

**THE LIMITS OF SCIENCE IN DETERMINING  
ENVIRONMENTAL PRIORITIES**

by

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## ABSTRACT

The dissertation examines the influence exerted by government's own experts, particularly natural, social and applied scientists, in the making of environmental policy. It focuses on the priorities for environmental policy, rather than the policies themselves, and addresses the question of how and under what conditions expertise resonates within environmental priority setting.

The research involved an extended case study within Environment Canada, between the years 1992 and 1995. In particular, it examined the Environment Canada Project Plan as it moved through its various stages of development, implementation and finally, failure to be approved. It examined other projects also proposed and possibly implemented during the same time period.

Based on an extensive collection of documents, including internal departmental memos provided to this research, interviews and participant observation, it was observed that government experts were not always influential even in situations where the professed method of policy making was "science-based." The readily available government experts were not always asked for their advice, nor were they always listened to even when they were asked.

A great deal of expert influence, or lack of influence, can be accounted for by serendipity, the effect of particular individuals in particular positions at particular moments in time.

The overall conclusion of the research is that, despite adherence to the value of "science-based" decision-making, policy making (at least in this instance) was not science-based in any significant measure. Even in the setting of priorities for attention, and even in the field of the environment, policy making remains mainly responsive to factors other than science.

The dissertation concludes by suggesting that greater emphasis on "science-based" policy making might go some distance to redressing the lack of influence of government experts. The discussion of specific policies might also be widened to allow people other than government officials to participate. It may well be that more attention to the contribution of experts might occur were the public involved in pressing for "science-based" policy.

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## ABBREVIATIONS

Agriculture	Agriculture Canada, later Agriculture & Agri-Food Canada
Conference Board	Conference Board of Canada
Environment	Environment Canada
Environment Canada Project coordinator	Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis head, later Environmental Protection/Response Assessment senior advisor
Environment Canada Project manager	Conservation & Protection/Ecosystem Sciences/Conservation director
Energy	Energy, Mines & Resources Canada
Finance	Finance Canada
Fisheries	Fisheries & Oceans Canada
Forestry	Forestry Canada
Health	Health & Welfare Canada, later Health Canada
Heritage	Heritage Canada
Industry	Industry, Science & Technology Canada; later Industry & Science Canada, still later Industry Canada
Major Industrial Accidents Council	Major Industrial Accidents Council of Canada
Mining Association	Mining Association of Canada
Natural Resources	Natural Resources Canada
Ontario Environment & Energy	Ontario Ministry of Environment & Energy
Pulp & Paper Research Institute	Pulp & Paper Research Institute of Canada
Pembina Institute	Pembina Institute for Appropriate Development
Rawson Academy	Rawson Academy of Aquatic Sciences
Transport	Transport Canada

## PREFACE

In this dissertation, I explore the role of government experts in establishing environmental priorities. My key case study is a project conducted by Environment Canada to develop and use a science-based process to determine them. Studying public policy making from the outside looking in is notoriously difficult. Indeed, it was purely by chance that I came across my key case. In the summer of 1993, I was observing an Environment-Health & Welfare Canada meeting in Ottawa on the second Priority Substances List. The Canadian Environmental Protection Act requires Environment and Health Canada (formerly Health & Welfare) to publish a list of chemicals for further assessment. The Green Plan announced publication of the second list in 1994. I was using this project as a case study in my doctoral research on the role of government experts in environmental policy making. One of the government managers at the meeting told me about a workshop to be held in a few days to review the process being developed by the Environment Canada Project. She suggested that I attend because it would be "much more interesting." After the meeting, the manager took me upstairs to meet the coordinator of the Project. He asked the Project manager for permission to invite me to attend the upcoming workshop. Luckily, I was in Toronto for the summer preparing for my comprehensive exams and could easily postpone my return to Vancouver.

The Environment workshop was *definitely* much more interesting. This process for deciding environmental priorities went far beyond the Priority Substances List. The purpose was to determine priorities across a broad range of environmental issues, including chemicals, for further assessment, control, and research. Although the roles of experts and non-experts had not been established, the assumption was that government experts would play a key role in the use (and development) of the process. My view at the time was that experts generally had too much influence in environmental policy making. Yes, it was important to involve a broader range of experts (from different disciplines and organizations), but even more important was a role for non-experts. However, the 60 or so experts and managers at the workshop - most of them government - seemed to represent a relatively broad range of views about the proper role of non-experts as well as experts, consistent with the debates both in theory and practice. So why not let government experts develop and even use the process? More fundamentally, and to my surprise, the experts and managers were essentially saying

that government experts did not play any role in deciding priorities across a broad range of issues. I had assumed that government at least tried science-based decision-making, regardless of whether the outcome was appropriate. Ultimately, I proved myself wrong.

## INTRODUCTION

### CHAPTER 1 SETTING THE SCENE

In this dissertation, my primary aim is to investigate the roles that government experts (that is, natural, social, and applied scientists) play and the influence they have in determining what environmental problems the governments of Canada will try to resolve and in what order they will try to resolve them. Canadian society in general expects - indeed demands - that its governments address a broad range of environmental problems such as climate change, wilderness preservation, genetically modified organisms, and toxic chemicals, not to mention the myriad other concerns that people may not consider to be environmental. But even if governments were willing to attend to these problems and had the money and staff to do it, they simply could not resolve all of them at the same time.<sup>1</sup> To fulfill their obligations to deal with at least some of the problems, governments must determine priorities. It is not unreasonable to expect that government decision-makers turn to government experts for advice. The main queries that arise from the use of government expert advice in deciding government environmental priorities are: What influence, if any, do government experts have in determining them? Why do they have this influence? Does their influence make a significant difference to determining "good" environmental priorities? Accordingly, these are the major questions I consider in this dissertation.

I began considering these questions in 1993 while I was examining the roles that Environment Canada and Health & Welfare Canada (Health) experts played in developing the second Priority Substances List: a list of chemical substances that were to be assessed. Environment and Health (now Health Canada) are required under the Canadian Environmental Protection Act to develop a list. The first list was published in 1989; the second list was to be published in 1994. Among other things, Environment and Health managers and experts were developing a scientific method for ranking the chemicals. Also, I went to an Environment workshop that reviewed a scientific method being developed by managers and experts from Environment and other federal departments for ranking a broad range of environmental problems to be managed (controlled, assessed, or researched).<sup>2</sup> The latter method was being developed as part of an Environment project to develop and use a formal process for determining

Environment's priorities, and perhaps even for the federal and provincial governments. Before the workshop, I assumed that - "of course" - government experts used such methods as the basis for their advice and that government decision-makers seriously considered this advice when they decided environmental priorities. But, after the workshop, I was left wondering if my assumptions were true, so I started investigating their validity. I set up interviews with approximately 25 experts and managers within Environment and several other "science-based" federal departments and the International Joint Commission.<sup>3</sup> By then (the summer of 1993), Brian Mulroney had stepped down as prime minister and a federal election was called. Meanwhile, under interim prime minister Kim Campbell, the federal government was implementing massive budget cuts, downsizing, and restructuring in a major way. Notably, Environment's budget was reduced by 30%, many jobs were phased out, and Environment/Parks was transferred to the new Heritage Canada. The predominant view of my Environment interviewees was that Environment experts were not playing a significant (that is, *deciding*) role in determining these priorities, and that they should be. (It is interesting to note that the resulting change of government had no direct significant effect on the Environment Canada Project itself.)

Following the interviews, I did an extensive search of the theoretical and practical literature that I thought would be related to the process of determining environmental priorities. After scrutinizing the literature, I found it lacking in studies that focus on the roles that government experts play. Although there are some studies about the ideal scientific ranking methods, they only imply the roles that government experts play or should play. Also, without studies that focus on the roles that government experts play (or should play), there are gaps in our knowledge and understanding of the process of determining environmental priorities. I was disconcerted to find that the studies seemed to be based on the assumption that there is some one or some body of people (government experts or not) who know best about determining environmental priorities. The studies that conclude a significant (deciding) role for government experts seem to assume that government experts know best because it is possible for them to successfully play their ideal dual role as experts and public servants. The studies that conclude a less significant role, or no role at all, for government experts seem to assume that government experts do not know best because it is not possible for them to successfully play this role. But the studies do not explain *why* the authors seemed to assume that *anyone* can know best.



It is important to fill the knowledge gaps because without understanding the influence if any that government experts have in determining environmental priorities, society is blindfolded. This makes it extremely difficult, if not impossible, to ascertain the environmental implications of our governments' priorities. And by the time that we do know for sure, the damage may be so extensive that it could be (and perhaps already is) irreparable. Some possible cautionary examples include the use of polychlorinated biphenyls. Since there are still essentially no studies that focus on the roles that government experts play in determining environmental priorities, a broad basic question still to be answered is: Who should determine environmental priorities: government experts; experts as a whole; governments; or even society as a whole?<sup>4</sup>

To narrow the knowledge gaps, I investigated the influence that government experts actually had in deciding environmental priorities by conducting a multiple-case study of various projects that occurred during the early to mid-1990s. My primary cases include: the 1992-95 Environment Canada Project; a 1993-95 Ontario Ministry of Environment & Energy project (similar to the Environment Canada Project except the purpose was to develop and use a science-based process for determining Environment & Energy's priorities); and the 1992-95 Priority Substances List 2 Project. To increase the quality of my study, I used multiple sources of evidence, a case study protocol, and replication logic. I also established a chain of evidence, developed a case study database, performed pattern matching analysis, and had a key informant review the draft case study report. The Environment Canada Project is my major primary case in this dissertation.

#### Determining Environmental Priorities<sup>5</sup>

Environmental priorities are simply one or more environmental problems that are ranked higher in importance than other environmental problems. (I use the term "problems" rather than issues because even if an environmental issue is defined as a solution or goal, there is always an inherent problem.) Environmental problems are any problems associated with the negative impacts of human activities on the natural environment (including humans). If governments allocate resources such as time, money, or staff to try to resolve the environmental problems, then the problems by definition reflect priorities for the governments. Resolving the problems can include determining if the problem really is a problem (for the governments), how important the

problem is (compared to other problems), if the problem can be solved (by the governments), how to resolve the problem, and if the problem really is solved.

Environmental problems become priorities through a decision-making process. Governments decide whether they will try to resolve particular problems, and in what order they will try to resolve them. Governments may use formal (planned as opposed to unplanned) decision-making processes to designate their environmental priorities. One obvious example is the budgetary process. The focus of such processes can vary: a single environmental problem, a narrow range of problems, a broad range, or a very broad range including other problems that the governments do not define as environmental. Those that focus on a range of problems, and attempt to prioritize resources, are sometimes called "priority setting" processes. Processes for determining priorities can be routine or ad hoc, and relatively open or closed (not only to the general public but also to other government departments). They may include scientific methods to rank the environmental problems and their possible solutions. Such methods may be based on the assessment and management of risk. The Priority Substances List 2 process is one such example of a risk-based approach.

But environmental priorities are seldom, if ever, determined once and for all. Governments may be able to rank some environmental problems as "high" (or "low") but may only be able to rank others "high" for a short period of time. Governments may not be able to rank environmental problems as a whole, relative to other problems that are not considered to be environmental. Many factors can influence and control, perhaps determine, environmental priorities, as shown in Table 1.1 and Figure 1.1.<sup>6</sup> These factors act as incentives and constraints for both the government decision-makers and the participants who advise them. Furthermore, the factors can change before and after a government has designated any environmental problem as a priority.

I consider that a problem has become a priority when resources (time, money, or staff) are allocated to it.

### Who Are Government Experts?

For this dissertation, government experts are people who are formally trained in the natural, applied, or social sciences; are recognized as experts in their disciplines or fields; and are directly employed by a government as experts and as public servants. Experts are only experts if they are formally trained in the discipline or field in which they

are working at the time. (I use the term "experts" rather than "scientists" because people often assume that a scientist is a natural scientist, and not an applied or social scientist. In my study, all were directly involved.)

Government experts are directly employed by a government as experts, not as government managers or elected officials (see Figure 1.2). Although I am not calling them experts, government managers or elected officials who are formally trained in the sciences have expertise, and can apply it, but they do so as managers.

My definition does not include experts who are employed indirectly (for example, as consultants), although such experts were involved in my study. Government experts can be temporarily located at other organizations through exchange programs. But experts directly employed by an outside organization who are temporarily located in a government through exchange programs are NOT government experts for the purpose of this dissertation.

#### Who Are Government Decision-makers?

I define government decision-makers as people who are directly employed by a government as decision-makers and as public servants. Government decision-makers include elected officials and, if decision-making authority is delegated, their senior managers: deputy ministers or assistant deputy ministers (see Figure 1.2). Other government managers do not make the final decisions, but they may be delegated to make interim decisions. In this sense these managers are included as (interim) decision-makers here.

Government managers are directly employed by a government. They can be temporarily located at other organizations through exchange programs. My definition does not include managers directly employed by an outside organization who are temporarily located in a government through exchange programs.

Government experts do not make interim or final decisions. They are scientific advisors and this dissertation traces their influence, if any, on key decisions that determine environmental problems as priorities.

### What is Influence?

Government experts and others have influence when they offer advice about allocating or not allocating resources to an environmental problem, and at least some of their advice is reflected in the decision to designate or not designate the problem as a priority. Major influence occurs when all of their advice is reflected in the final decision. Minor influence occurs when some of it is. And no influence occurs when none of it is reflected, or they do not offer advice.

But if government experts do not offer advice, is it possible for them to have no influence? It could be argued that they still have influence on decisions if they are *expected* to offer advice. I will return to this point in my concluding chapter.

### The Major Literature

In this section, I discuss what the major studies in the theoretical and practical literature suggest about the roles that government experts play in determining environmental priorities. Although essentially none of the studies *focuses* on the roles of government experts, it does not necessarily follow that experts play no role. There may be a number of reasons why no studies have been done: Perhaps no one has studied the role of government experts because they are deemed not important, or because their roles, although significant, are obvious. Or perhaps the process of determining government environmental priorities is too closed or too complex.

Some of the studies that *do not focus* on the roles that government experts play are *still relevant* to my investigation. Indeed, given my definition of the process of determining environmental priorities, this could include many studies about policy processes within Canada and even other countries. Thus I conducted a review of the literature in multiple disciplines and fields including: studies that focus on the roles that government experts should play in determining environmental priorities; studies that focus on the roles that other factors play or should play, especially experts and public servants; and studies that focus on the roles that government experts, experts, and public servants play and should play in determining priorities in general, environmental policies, and policies in general. I was surprised to find so few relevant studies.<sup>7</sup>

Further, in these few relevant studies, discussed below, there is very little significant information, not only about the roles that government experts play, but also

about the process of environmental priorities in general. Also, none of the studies seems to have done a broad sweep of the literature to try to identify any patterns of findings that may be present in the existing studies. Thus there seems to be good reason to question what the studies found. In my study, I looked for identifiable patterns across the literature. It is for this reason that I present a synthesis of the studies rather than a more traditional study-by-study literature review. My discussion begins with an analysis of the descriptive information contained in the studies and then moves to the explanatory and evaluative information, following my three major questions.

### The Studies

The studies partially address the first of my three major questions and begin to show some general patterns. What influence, if any, do government experts have in determining environmental priorities? To this, the answer from the more relevant studies is, in a number of cases, government experts provide advice to government decision-makers about allocating resources to try to resolve environmental problems.<sup>8</sup> And, in a few of these cases, government decision-makers follow government expert advice.<sup>9</sup>

In my attempt to answer my first major question in more detail, I took a closer look to see if the studies as a whole revealed more detailed patterns. The only other significant pattern that the studies *clearly* suggest is: The roles that government experts play in deciding environmental priorities are case- and perhaps study-specific (because few studies describe the same case).

The above summarizes the *descriptive* information in the studies that is relevant to my first major research question. Although there are obviously gaps, for the purpose of my dissertation, I consider this information to be sound and useful because most of the studies were subject to peer review (including the ones that were not formally published in journals or books), no other studies have disproved them, some of the studies continue to be cited by the other researchers, and the findings of my study do not contradict the other studies. Rather than trying to definitively fill in the descriptive gaps, I focused on my last two major research questions: Why do government experts have the influence that they have in determining environmental priorities? Does their influence make a significant difference to determining "good" environmental priorities?

It is disconcerting to note that the studies do not adequately address these *explanatory* and *evaluative* questions. In general, the studies provide the same

insufficient, often implicit explanation: Government experts play the roles that they play because certain (or all) government experts themselves, along with government decision-makers, and/or the other participants are uninformed and/or not public interested.<sup>10</sup> These explanations do not really answer why government experts have the influence they have. What the studies really conclude is: The roles that government experts play make a significant difference. But it seems that the studies base their explanations on the assumption that there is some one or some body of people who actually know best about allocating resources to try to resolve environmental problems (perhaps even the studies' authors themselves know best). Therefore it follows that not only should the body of people who "know best" provide advice to the government decision-makers, but if the government decision-makers follow this advice, they would be able to decide the best environmental priorities possible. However, the studies do not explain *why* they seem to assume that any one can know best.

I question the assumption that *any one* knows best. It is reasonable to suggest that the ideal way to prove that anyone knows best would be to substantiate that some environmental priorities are better than others. But this is difficult, if not impossible, to prove because even if the physical evidence clearly shows that certain past environmental priorities were wrong (for example, the use of polychlorinated biphenyls), it *cannot* be known for certain that a different allocation of resources would not have resulted in some other equally devastating crisis. It is interesting to note that only one study, Bruce Doern and Thomas Conway's *The Greening of Canada*, explicitly acknowledges this difficulty.<sup>11</sup>

To try to understand why the studies' authors seemed to assume that anyone knows best and to try to see if any patterns emerged, I took a closer look at the other studies. The studies did not address my questions, but a pattern of assumptions did emerge about why government experts are supposed to know or not know best. The pattern at one end of the spectrum is that one group of studies seems to assume that it is possible for government experts to successfully play their ideal dual role as experts and public servants. The more relevant of these studies is Hickling Corporation's "Application of Economic Analysis to the Development of Priorities for Environment Canada."<sup>12</sup> In other words, government experts alone know best, at least about the science of deciding environmental priorities. As experts, they are expected to be objective; as public servants, they are expected to be subjective. At the other end of the spectrum, another group of studies seems to assume that it is NOT possible to play this

ideal role, such as Christina Chociolko and W.G.B. Smith's "Setting Environmental Management Priorities" and the Institute for Risk Research's "The Development of a Methodological Framework for Establishing Priorities for Environmental Protection."<sup>13</sup>

Therefore, government experts do not know best about the science because they *cannot* know best. Yet the studies from across the spectrum do not discuss the dual role, either in theory or in practice. Can government experts be both objective and subjective? If this is not known, then neither assumption (that government experts know best *nor* that they do not) is valid.

It is important to note another pattern that emerged: The studies *disagree* about some of the questions that experts (government or not) should answer in determining environmental priorities. In particular, the studies, including Tee Guidotti's "Comparing Environmental Risks," disagree about those questions that straddle the traditional boundaries of science, and of administration and policy, for example, questions related to the acceptability of the risks associated with environmental problems.<sup>14</sup> And, more importantly, the studies *agree* about the questions that experts should answer, those questions that are typically placed within the traditional boundaries of science, such as questions related to the significance of the associated risks. Yet based on my preliminary observations, it seemed that both government experts and experts as a whole were unable to authoritatively answer some of these questions. Further, there is generally *no discussion* in the studies about where to set the boundaries not only between all three domains, but also between the two domains of administration and policy.<sup>15</sup> This raises the following questions for me: Why do some of the studies accept the legitimacy of the boundaries? Why do some of the studies not? Why do the studies that do not accept the legitimacy of the boundaries move them where they moved them? Are the uncertainties of determining environmental priorities so high that the questions (traditional or not) cannot be answered by science? Can any expert (government or not) answer these questions scientifically? If these questions cannot be answered by science, why should experts be involved? Even if the questions cannot be answered scientifically, should government experts be answering the questions because, unlike other experts, they also have a formal mandate to act in the public interest? It is the lack of answers to these questions in particular that compelled me to investigate the influence that government experts have in deciding environmental priorities.

## Placing The Study in Context

In our 1994 book *Risk and Responsibility*, William Leiss and I state that in Canada and elsewhere, finding solutions to controversies about managing health and environmental risks that are acceptable to a broad range of participants has not been very successful. We argue that such controversies arise because many parties avoid taking responsibility for the consequences of the risks they advocate. We propose that, through stakeholder negotiation, consensus on assessing and managing risks could be achieved. We use as key case studies controversies regarding power frequency electric and magnetic fields, Alar, and antisapstains.<sup>16</sup>

In the book, we elaborated on the ways in which institutions and individuals avoid assuming responsibility. We specifically discuss how experts and the public determine the trade-offs between risks and benefits, and the overall gains or losses associated with hazardous activities, stating that, "these sometimes elaborately calculated trade-offs are full of estimates and assumptions, that, upon scrutiny by others, often turn out to have highly unstable foundations, typically leading to an exaggeration of benefits and an understated or incomplete description of risks."<sup>17</sup>

We then discussed power frequency electric and magnetic fields and Alar by detailing the interplay between the various experts' assessments of the risks, benefits and trade-offs, and the public's perception of the same.<sup>18</sup>

We explained the process of stakeholder negotiation in which parties try to negotiate their differences and reach a voluntary agreement, and describe in detail the use of such a process in the antisapstains dispute. We also proposed how a stakeholder negotiation process could have achieved a consensus in the power frequency electric and magnetic fields and Alar disputes.<sup>19</sup>

We concluded by suggesting that the most promising way for society to move from disagreement towards consensus is for all parties to take responsibility for the consequences of their positions on risk-taking.<sup>20</sup> Specifically, industry and governments should have available "a disinterested risk assessment that uses the best scientific methods"; governments should explore with other stakeholders how to make responsible tradeoffs between risks and benefits; and finally, public interest groups should help citizens move away from "risk averse" positions and balance their views towards "involuntarily imposed and voluntarily assumed risks."<sup>21</sup>



We predicted that if stakeholder negotiation is used, the participants will find that "the inherent difficulties in risk assessments will represent one of the chief and enduring obstacles to negotiating consensus, no matter how high the level of goodwill among the parties."<sup>22</sup>

Regarding the power frequency electric and magnetic fields dispute, we referred to Liora Salter's study of the role of science and scientists in making public policy; in particular her observation that the nature of what she calls mandated science discourages participation by conventional scientists, and for those who do participate, the experience is frustrating.<sup>23</sup> William Leiss and I argued that, "given the complex nature of the scientific debate... a 'separation' in the form of an international scientific consensus-finding conference must occur" before a stakeholder negotiation process.<sup>24</sup> This is because the "experts must first come to terms with the reasons for their own differences of opinion."<sup>25</sup> Further, the process should be ongoing and "subject to a broader societal decision about how much of our limited resources (time, money, people) we want to devote to this potential risk versus other known risks."<sup>26</sup>

This dissertation is a further exploration of the issues we raised in our earlier book. This time, I am using a more detailed case study than was possible in the previous work. Further, I want to refer to several authors who have been discussing the issues raised by William Leiss and me because they are directly relevant to the broader questions about policy making and expertise that are raised in my research, specifically: what role do experts play in policy making; how is the problem of uncertainty handled; and finally, whose expertise should matter, scientists' or the lay public's, in the handling of scientifically complex decision-making?

### Information, Expertise, and Policy Making

In Herbert Simon's 1957 classic book *Administrative Behavior* (first published in 1945), he discusses his study of decision-making processes in administrative organizations.<sup>27</sup> In particular, Simon proposes:

a theory of human choice or decision-making that aims... to accommodate both those rational aspects of choice that have been the principal concern of economists, and those properties and limitations of human decision-making mechanisms that have attracted attention of psychologists and practical decision-makers.<sup>28</sup>

Simon discusses problems of the then current administrative theory (especially the principle of distinguishing between fact and value in decision-making, and therefore separating questions of administration from questions of policy), constructs a theory of rational choice, examines the influences on decision-making in an organizational environment, and illustrates how his analysis can address questions of organization structure. He also explains why, in his view, organizational influences, especially authority, are effective in shaping human behaviour.<sup>29</sup>

Simon argues that, "The central concern of administrative theory is with the boundary between the rational and the non-rational aspects of human social behavior."<sup>30</sup> Further, "administrative theory is peculiarly the theory of intended and bounded rationality -- of the behavior of human beings who *satisfice* because they have not the wits to *maximize*."<sup>31</sup>

In his proposed approach to theory, Simon views the process of human choice as a process of "drawing conclusions from premises" and uses the premise as the unit of analysis rather than the decision in which a large number of premises are combined.<sup>32</sup> He identifies several classes of decision premises including: authority, defined as "the power to make decisions which guide the actions of another"; communication, which is "any process whereby decisional premises are transmitted from one member of an organization to another"; efficiency, a criterion which "demands that, of two alternatives having the same cost, that one be chosen which will lead to the greater attainment of the organization objectives; and that, of two alternatives leading to the same degree of attainment, that one be chosen which entails the lesser cost"; and "identifications" (loyalties to goals and groups), where "a person identifies himself with a group when, in making a decision, he evaluates the several alternatives of choice in terms of their consequences for the specified group."<sup>33</sup> He states that, "streams of these premises converge to influence the decision-making of organization members."<sup>34</sup>

Arnold Meltzer takes up some of the same issues in 1976, with his now classic book *Policy Analysts in the Bureaucracy*.<sup>35</sup> Meltzer argues that "much of the literature on policy analysis is utopian," in describing the results of his study about policy analysts in the United States federal government in Washington, DC.<sup>36</sup> He explores "the political and bureaucratic dimensions of the policy analyst at work," using interviews with senior policy analysts and his own experience as an analyst to do so.<sup>37</sup> Meltzer defines a policy analyst as an expert and professional (specialist or generalist) who helps formulate solutions to problems. Policy analysts, Meltzer states, do not operate their

own programs, but occupy staff advisory roles. He assumes that four factors are influential in the production of analysis: the analyst, client, organizational situation, and policy area. He views them as a set of concentric circles of influence, with the policy analyst being in the centre circle, and he suggests that generally the circles closer to the analyst exert a greater influence on the analyst's behavior than the circles farther away.<sup>38</sup> Regarding analysts themselves, Meltsner suggests that they "differ from each other by their expectations, which stem from the norms of their professional training, their formal education, their beliefs about reality, and their motivations to make an impact on public policymaking," and identifies three general types: the technician, politician, and entrepreneur.<sup>39</sup> Further:

...Analysts in general perceive that the output of analysis should be measured in terms of implementation or actual social and behavioral change. But many are satisfied with peer approval [the technician] or when the client accepts their recommendations and acts on them [the politician], regardless of the ultimate fate of their advice.<sup>40</sup>

Meltsner says that "the pressures of time and the need for legislative ideas push the analyst into the role of an operating official who.... is more likely to compile information about a particular policy than to develop a theory of the process of policy making" and therefore the analyst is more a bureaucrat than what Harold Laswell refers to as a policy scientist.<sup>41</sup> Further, the policy analyst "has superiors or clients he wishes to please... and in order to do so, competes with other bureaucratic experts."<sup>42</sup>

Regarding these clients, Meltsner argues that they differ on why they want analysis - to help make decisions, because it is fashionable, or to explain or justify decisions already made, as well as in their capacity to listen to analysts and to clarify problems. Further, their backgrounds, education, and experience differ, resulting in two styles: executive, managerial; or more reflective and intellectual. Meltsner says that the analyst has many relationships with clients over his career, and the productive relationships are those based on trust and confidence. Further, every analyst needs a supportive client, or his work will not be used.<sup>43</sup>

Regarding the organizational situation within which policy analysts operate, Meltsner states that often there will be several analysts working for a collective client and that the distance between client and analyst is critical because it significantly affects how they communicate, depending on, for example, the number of levels between client and analyst, or whether the advisor is an inside advisor or an outside consultant. Further,

the situation provides a viewpoint, which orders policy problems and solutions. Finally, what an organization does and the support it gets can affect the production of analysis.<sup>44</sup>

Meltsner then goes on to argue that organizational situations (such as profit and nonprofit consulting and research firms, and universities) have certain characteristics that influence the analyst and his work.<sup>45</sup> Meltsner says that in comparison to a university faculty member doing analysis, the study agenda of a bureaucratic analyst is:

more often determined by other people. He looks at a fairly narrow range of alternatives, most of which have been discussed in the literature and the newspapers; he has a short span of time in which to do a study and generally works on only a fraction of it, on a small piece of a group effort.<sup>46</sup>

Further:

Because of the pressure of time and lack of information, the level of technical competence for the study may not be elegant. However, the analyst compensates for his misgivings about quality by having a strong sense of personal power because of his immediate relationship to the policy and budgeting process of federal government.<sup>47</sup>

Meltsner concludes that the analyst views himself as an intellectual who is "free to reflect and be a force for change."<sup>48</sup> But, he says, "the bureaucratic context does not allow the analyst to act like other intellectuals."<sup>49</sup> As he puts it, "because there is a certain amount of pathology in the bureaucracy, expressed as an exaggerated concern for turf and personal aggrandizement, the policy analyst, like other bureaucrats, engages in a struggle for recognition, for status, and for reward."<sup>50</sup> Further, "the bureaucratic context denies him a monopoly on knowledge" and "there is a conflict over knowledge in a bureaucracy manned by professionals."<sup>51</sup>

Finally, regarding the policy area, Meltsner argues that this area "provides the analyst with a selected group of policy problems and their accompanying knowledge base and politics."<sup>52</sup> Further:

Sometimes the politics of a policy area are open and conflict ridden; sometimes they are closed, involving technical issues and technical men. Some policy problems have a dimension of crisis to them. Others are more chronic; they never seem to go away and are subject to incremental solutions.... and even when we know a great deal, the politics of the policy area may be so intractable as to require the assembling of unwieldy coalitions and the creation of public consensus.<sup>53</sup>

When these four factors are combined, the result is an analytical process, and different types of processes are possible, depending on how the factors are defined. The

processes all result in policy analysis, which he argues is a form of advice, and not just information.<sup>54</sup> As he puts it:

Advice as a product can be characterized as a series of typical questions. Was the advice of sufficient quality and scope to meet the requirements of policymakers? Did it arrive in sufficient time to be used by policymakers and to mesh with other political forces to enhance acceptance? Did the advice help to make or support decisions?... Was it parsimonious, was it one-time or frequent, and was it robust enough to survive the many hurdles of policy adoption and implementation?<sup>55</sup>

Meltsner continues by suggesting that, "like the bureaucrat, the policy analyst is a political actor" because they make political decisions, including deciding to work in the bureaucracy, choosing a client to work for, selecting problems for analysis, defining the problem and resolving it, and communicating the results persuasively to clients.<sup>56</sup>

Meltsner concludes that "the problems besetting policy analysts and their varied behaviors are almost entirely predictable and understandable."<sup>57</sup> He suggests that bureaucratic policy analysts are generally susceptible to bureaucratic influences because "they are members of an emerging profession without enforceable standards and sanctions," "lack an adequate base of knowledge and associated theoretical paradigms," "have tenuous communication networks," and "are low resource, low status political actors."<sup>58</sup> He says the result is:

...a lack of social and political support from outside of the bureaucracy. Therefore it is not surprising that analysts succumb to bureaucratic forces, folkways, and incentives. Nor is it surprising to find such a variety of analytical behavior and roles because the bureaucratic context has sufficient discretion or slack to allow the mutual expectations of both client and analyst to operate.<sup>59</sup>

Further, "the analyst starts off expecting to influence the bureaucracy, but it is the bureaucracy that influences him. By working in it, he takes on a particular identity."<sup>60</sup>

Throughout his book, Meltsner explores his above assumptions in detail by examining bureaucratic analytical roles, what analysts do, how the analyst works on a policy problem, the solving of problems, the clients of analysts, and communication between client and analyst.<sup>61</sup> He examines the dilemmas of analysis, stating that analysts "have the potential to stimulate the public bureaucracy with uncomfortable questions and fresh ideas... but there are obstructions," some originating from the analyst ("his own conception of his role and the place of analysis") and others outside his control ("to do with the inadequacy of policy knowledge and with deficiencies in

organizational and political arrangements").<sup>62</sup> "Whether policy analysts can be different from their past and present colleagues in the bureaucracy is an open question."<sup>63</sup>

More recent work on information, expertise, and policy making includes, for example, studies by William Dunn, and by John Markoff and Veronica Montecinos. In a 1980 article "The Two Communities Metaphor and Models of Knowledge Use," Dunn constructs, reviews, and assesses five models of knowledge use by identifying and comparing their assumptions with case studies of "knowledge utilization and planned change."<sup>64</sup> Dunn's study was based on a survey of reported cases of knowledge use and planned change in the public and private sector. The analysis was limited to variables often examined from the two-communities perspective.<sup>65</sup>

Dunn states that a two-communities perspective on relations between social scientists and policy makers has shaped thinking about knowledge use and that this allows "observers to make claims about knowledge (non)utilization by arguing that relations... are similar to those between natural sciences and humanities" (after C.P. Snow).<sup>66</sup> He further states that the perspective suggests that "problems of knowledge are fundamentally cultural, that is, they depend on the subjective interpretation of meaning attached to 'knowledge' by members of particular subcultures."<sup>67</sup>

Dunn identifies five classes of assumptions within the perspective and suggests that they are competing models of knowledge use by policy makers, as follows: (1) the product-contingent model in which "the characteristics of products of social science research (form, content, language, length, reliability, validity, timeliness)" determine the scope of use; (2) the inquiry-contingent model in which "differences in modes of inquiry used to acquire, process, and interpret information (research design, analytic techniques, observational methods, sample)" determine the scope; (3) the problem-contingent model in which "the characteristics of policy problems (levels of conflict, uncertainty, and risk associated with attempts to satisfy needs or realize opportunities)" determine the scope; (4) the structure-contingent model in which "variations in the structure of organizations (authority, responsibility, power, and incentive systems)" determine the scope; and (5) the process-contingent model in which "the nature of interaction (authoritarian, delegative, collaborative) among producers and potential users and beneficiaries of knowledge" determines the scope.<sup>68</sup>

Dunn states that his results have several implications for the perspective and models.<sup>69</sup> He generalizes first that reliability and validity seem to influence knowledge use (product-contingent model) - the greater the reliability and validity of information, the

greater the use.<sup>70</sup> Research quality, reliability, and validity seem to be different properties of use.<sup>71</sup> Overall reliability and validity of information do not seem to be related to the use or nonuse of conventional methods (such as experimental designs), which suggests "a wider conception" of reliability and validity.<sup>72</sup> Second, some support for the problem-contingent model was provided when the nature of the problem was controlled; for operational decisions (vs strategic), the greater the quality of research, the greater the use. Third, the type of organization seems to exert a moderate influence on knowledge use - it was used more in private organizations with formal profit incentives (vs public); the presence of an outside evaluator exerts no noticeable difference; and the affiliation of change agents seems to exert the strongest influence - knowledge produced by agents formally affiliated with the sponsoring organization was used more (structure-contingent model). Dunn generalizes finally that the results suggest overall involvement in all phases of policy making is not required for knowledge use and that it is important to involve all relevant stakeholders (social scientists, policy makers, etc.) in the problem definition, goal-setting, and evaluation phases (vs approach selection and implementation) (process-contingent model). Further, the diffusion style of change agents seems to exert an important influence. The more social scientists encouraged feedback on their research results, the greater the use.<sup>73</sup>

Dunn also examined the impact of knowledge use on problem-solving, using as indicators the "adoption of innovations, resolution of problems, and unintended consequences of change."<sup>74</sup> He states that the results question the assumption that knowledge use "automatically results in effective problem-solving."<sup>75</sup> Further, relations between use and adoption of innovations are changed when certain variables are controlled such as research quality, which suggests overall use is "a key intervening variable in the adoption of innovations and other facets of problem-solving behavior."<sup>76</sup>

Dunn suggests several conclusions, as follows. First, distinguishing between "cultural" and "structural" factors (his quotes) is impossible unless the variables, hypotheses, and assumptions of the two-communities perspective are specified.<sup>77</sup> Second, some variables such as research quality cannot be understood without knowing how policy makers and others interpret them. Third, isolating the influence of a single variable must be supplemented by relating that variable to all others.<sup>78</sup> Fourth, the study of knowledge use must move beyond assumptions that "quality" research is "used" research (his quotes) and that its use results in improved problem-solving.<sup>79</sup> Finally, explanations of knowledge use must be based on methodologies that are "holistic,

subjective and directed toward questions about consequences as well as antecedents of knowledge use."<sup>80</sup>

In Markoff and Montecinos' 1993 article "The Ubiquitous Rise of Economists," the argument is made that professional economists are rising to the highest levels of government in many countries.<sup>81</sup> The authors argue that this situation is not due to economists' technical knowledge, but rather is "a ceremonial display" and part of a trend towards a "transnational political culture" in which economists occupy a "sacerdotal [or priestly] role."<sup>82</sup> Markoff and Montecinos use the Chilean government as an example to demonstrate that economists have in recent decades partially displaced other professionals such as lawyers, as principal advisers to ministers in countries of differing size, region, and political traditions.<sup>83</sup> In some countries such as Norway, they are becoming ministers, while in others such as the United States, "they may be coming to dominate civil service recruitment, but have not attained the heights of power."<sup>84</sup> Further, their rise "has also occurred in countries with great differences in traditions of incorporating expert knowledge into political action," for example, Mexico and Britain.<sup>85</sup>

The authors hypothesize that:

The belief that economic affairs are central to governmental action and to relations among governments has made the display of Ph.D.-endowed ministers an aspect of a new kind of legitimacy claim, has added to the degree to which the professional language of economists informs a new political lingua franca, and has encouraged transnational professional ties and values as a significant context for national political decisions.<sup>86</sup>

While developing these hypotheses, Markoff and Montecinos consider "the classical reflections of [Max] Weber on the role of holders of specialized knowledge in modern governments to show that Weber's discussion of 'politicians' and 'bureaucrats' is inadequate" and "the importance of uncertainty surrounding economic management in an era when economic affairs are widely taken to be central questions in political life, an anxious uncertainty which confers great power on those who claim membership in a profession believed to possess the knowledge to dispel anxiety."<sup>87</sup> But, they argue Weber's analysis is inadequate for three reasons:

First, the distinction between 'politicians' whose honor is in serving some set of group interests by responsibly balancing competing ethical imperatives, and the 'civil servant' whose honor is in responsibly applying special expertise in the execution of policy, simply does not accord with the blurred realities confronting many technical experts now in office. Second, the propensity of politicians to pass responsibility for intractable problems to possessors of technical knowledge may itself become highly



institutionalised, as opposed to the merely irresponsible aberration for which Weber... condemned the Wilhelmine bureaucracy. Third, and most important, specialised knowledge may come to be redefined. The specialist may come to be seen as a generalist.<sup>88</sup>

Markoff and Montecinos elaborate on their first point by arguing that professional honour, including that of economists, "is likely to involve a devotion to the intellectual standards of the body of knowledge to which they adhere," and that this is distinct from the honour of both Weber's bureaucrats and politicians.<sup>89</sup>

Other studies in this area have been conducted by Carol Weiss, specifically on the use of social science research by government decision-makers. In a 1977 paper "Research for Policy's Sake," she summarizes three studies (by Nathan Caplan, Karin Knorr, and herself) on the subject.<sup>90</sup> Weiss concludes that the studies suggest research is not used mainly for solving problems, but rather is used indirectly as "a source of ideas, information, and orientations to the world."<sup>91</sup> Further, she says that even though the process is not easily recognized (by outsiders or policy makers), over time it can change the "whole focus of debate."<sup>92</sup> In addition to well-documented reasons for limited attention to research (including "weaknesses in the research itself, conflicting demands on policy, and disjunctions between the knowledge needs of policymakers and the research outputs of social scientists"), people tend to look for the use of it "in the wrong places."<sup>93</sup> Weiss then describes the results of the three studies, which looked at the specific use of specific studies by government. The first, by Caplan, was based on interviews with high-level United States federal decision-makers in executive-branch departments. The second, by Knorr, was based on interviews with federal, provincial, and city government officials in Vienna along with questionnaires sent to Austrian social researchers. Third is her own study, where she interviewed mental health decision-makers in United States federal, state, and local positions. She found that the potential use of studies was described in terms of research quality, conformity to user expectations, action orientation, and challenge to the status quo; and further, that these characteristics were important in determining the use, especially the challenge to the status quo.<sup>94</sup>

Weiss argues that all these studies seemed to suggest "to a large (but unknown) degree, research actually affects policy less through problem solving or social engineering than through what Morris Janowitz has called 'enlightenment.'"<sup>95</sup> She concludes by stating that, in contrast to the conventional problem solving model of research use, the enlightenment model does not assume that "value consensus"

between social scientists and policy makers is required for "useful research."<sup>96</sup> She further states that her findings support policy analysts outside government broadening the range of policy options.<sup>97</sup>

In her edited 1977 book *Using Social Research in Public Policy Making*, Weiss elaborates, making the argument that social science research should be used in government policy making, thus disputing the then conventional assumptions about the relationships between social science and government.<sup>98</sup> Specifically, Weiss asserts that arguments against using research in policy imply that "government and social science are separate realms and should remain so" (including government "diverts social scientists from their true priority of enlarging knowledge," social scientists "giv[e] advice prematurely on the basis of inadequate knowledge," "distort the development of the disciplines," "abdicate their role as scientists and become technicians for the powers-that-be," and become "handmaidens of the state, rather than... critics"), and further that "closer interrelationships... would provide benefits and incur costs for the 'wrong' groups."<sup>99</sup> She states that the counter-arguments include that most social scientists seem to accept that the realms do overlap, the use of research is also "hallowed by tradition," social science seems "as adroit at exploiting government for pursuit of its own ends," and especially that "all choices of emphasis in the social sciences are governed by some set of values.... [a]nd contributing to the deliberations of government is a value that can be viewed as legitimate as many."<sup>100</sup>

Weiss suggests that, generally, the literature is based on three assumptions: using research for policy is "a good thing," government does not use research well, and government could use research better if "modest reforms were made."<sup>101</sup> Regarding the first assumption, she believes that the commitment of social scientists to research "is grounded in a belief in rationality... [b]ut entangled with... more self-serving motives" including "interest in the status and rewards that accrue to social science,... desire for influence in the corridors of power, and/or... reformist zeal to move public policy in the direction of their own beliefs."<sup>102</sup> Regarding the second assumption, Weiss refers to some of the studies in the remaining chapters and states that improving the use of research is difficult particularly because of government's emphasis on resolving controversies by "negotiating differences and reconciling divergent views [rather] than on reaching scientifically elegant solutions," and also government's tendency to "prefer the ills they have [to] the disorder attendant on even beneficent change" when use "threatens to bring about rapid change."<sup>103</sup> Further: research produces fragile

knowledge ("government officials know that social science is beset with fads of attention, with competing theoretical frameworks, and with contradictory empirical evidence" and social scientists "often tend to be timorous about drawing policy implications from their work and reluctant to give clear-cut recommendations"), and even as research accumulates and its quality improves, a stronger knowledge base may not be provided; research "can be used... to resolve problems only where decision-makers and researchers have accepted the same set of values"; "each actor in the policy process responds to the incentives and rewards of his own position.... [and] the kinds of information that each actor wants to have are likely to be widely divergent."<sup>104</sup> Finally, it is not easy to notice use because identifying the actors who make a policy, or when a policy is made is occasionally difficult.<sup>105</sup>

Regarding the third assumption, Weiss argues that the terms "using research" or "research utilization" can be defined in six different ways.<sup>106</sup> The first and usual meaning is "problem solving," that is, "research will provide empirical evidence and/or conclusions that will help to solve a policy problem."<sup>107</sup> She states that this linear model assumes that policy makers and researchers agree on goals, assumes that commissioned research will have "direct and immediate applicability and will be used for decision making," and often assumes that one specific study will be used.<sup>108</sup>

Weiss critiques the "knowledge-driven model," in which research can be used because it "has thrown up an opportunity that can be capitalized upon."<sup>109</sup> She says that this model, also linear, "assumes that the sheer fact that knowledge exists presses it toward development and use."<sup>110</sup> Weiss suggests that the linear model is inadequate in social science research (as opposed to the physical sciences) because knowledge is not likely to be convincing, and it is not easily converted into material or social technologies, and, finally, its development and use is less likely "unless a social problem has been consensually defined, politicized, and potential solutions debated."<sup>111</sup>

She then discusses the "interactive model," which holds that "the use of research is only one part of a complicated process.... by which decision-makers inform themselves of the range of knowledge and opinion in a policy area."<sup>112</sup> This model has more to commend it inasmuch as social scientists are one set of participants who seldom have evidence that is direct and explicit, but they can participate in discussions.<sup>113</sup>

As to "research as political ammunition," this is the use of research to support a position predetermined by "the constellation of interests around a policy issue," or the

decision-maker's "ideology, intellect, or interest."<sup>114</sup> Weiss says that "researchers, particularly if they have been commissioned to do research on the subject, or if they have some stake in the results are often appalled at the agency's lack of receptiveness to their conclusions,.... [and] can become cynical about government's 'use' of social research."<sup>115</sup> She suggests that such use is neither unimportant nor improper because "only distortion deserves reproof," and she goes on to say that research can strengthen the side that the evidence supports and therefore "stands a better chance of making a difference in the outcome."<sup>116</sup> Weiss also states that in this model all parties need access to the evidence.<sup>117</sup>

Weiss also talks about "miscellaneous uses," by which she means the use of research to "delay action," "avoid taking responsibility for a decision," "gain recognition and support" for a successful program, "discredit an opponent or a disliked policy," "maintain the prestige of a government agency through its support of prestigious researchers," "keep universities and their social science departments solvent," "serve as a training ground," and "generate further research on topics of social importance."<sup>118</sup> Weiss asks whether such uses are legitimate, and answers by saying, "value-based criteria have to be invoked."<sup>119</sup>

Finally, Weiss discusses "research as conceptualization," by which she means that research "can be 'used' in re-conceptualizing the character of policy issues or even redefining the policy agenda."<sup>120</sup> Weiss states that research may "sensitize decision-makers to new issues and turn what were non-problems into policy problems," "convert existing social problems into non-problems," and "drastically revise the way a society thinks about issues...., the facets of an issue that are viewed as susceptible to alteration, and the alternative measures that it considers."<sup>121</sup> She adds that, "Global reorientation of this sort is not likely to be the outcome of a single study or even one specific line of inquiry. But over time and with the accumulation of evidence, such use can have far-reaching implications."<sup>122</sup>

In sum, problem solving is not the common pattern as far as policy analysts and their audiences are concerned. Problem solving uses of policy analysis do occur, but this research is likely to be done by agency staff and likely to focus on day-to-day operations, not program and policy issues.<sup>123</sup> "Officials apparently use social science as a general guide to reinforce their sense of the world and make sense of that part of it that is still unmapped or confusing.... Even research that challenges the status quo is... welcomed in decision-making circles."<sup>124</sup>

Caplan also discusses the use of social science knowledge in policy decisions at the national level.<sup>125</sup> Based on interviews with executives in the executive branch of the United States government (and excluding the routine use of economic data), Caplan found that use is most likely to occur when: "the decision-making orientation of the policymaker is characterized by a reasoned appreciation of the scientific and the extra-scientific aspects of the policy issue"; "the ethical-scientific values of the policymaker carries with them a conscious sense of social direction and responsibility"; "the policy issue is well defined and of such a nature that a 'best' solution requires research knowledge"; the research findings are "not counterintuitive," "are believable on grounds of objectivity," and "their action implications are politically feasible"; and "the policymaker and knowledge producers are linked by information specialists capable of coupling scientific inputs to policy goals and objectives."<sup>126</sup>

In a later article, "Knowledge Creep and Decision Accretion," Weiss summarizes her views on the usefulness of social science research to government officials.<sup>127</sup> Here, she argues that "knowledge that derives from systematic research and analysis, is not often 'utilized' in direct and instrumental fashion in the formulation of policy" and that "instead, research knowledge usually affects the development and modification of policy in diffuse ways" (creep).<sup>128</sup> She further states that "decisions often take shape gradually, without the formality of agenda, deliberation, and choice" (accretion), and that this "helps to explain the lack of direct utilization."<sup>129</sup> To reach these conclusions, Weiss interviewed people who held high-level positions in United States federal, state, and local mental health agencies and concludes that social science research has many uses (direct input, general guidance, ritual, orienting perspective, continuing education, challenge and clarification). Further, based on her study and others, public officials use research more widely than previously suggested.<sup>130</sup> In particular, "social science, by helping to structure people's perceptions of social reality, seems to have pervasive effects."<sup>131</sup>

Weiss believes that the question of these "effects" must still be confronted, given that we know many reasons why the use of research is limited.<sup>132</sup> She reminds us that scholars have found various obstacles that block the route between research and decision, specifically:

Research does not fit the exact circumstances within which decisions are made, research is not ready on time for decisions, research conclusions are not unambiguous or authoritative enough to provide direct guidance, research reports do

not reach the right audience, decision makers do not understand or trust research findings or understand how to interpret and apply them, the lessons from research are outweighed by the combinations of competing interests, agency self-protection, and individual career concerns.<sup>133</sup>

She argues that officials "do not report the use of research for specific decisions [because] many of them *do not believe that they make decisions*."<sup>134</sup> Weiss suggests that this is mainly due to "(1) the dispersion of responsibility over many offices and the participation of many actors in decision-making...; (2) the division of authority among federal, state, and local levels in the federal system; and (3) the series of gradual and amorphous steps through which many decisions take shape."<sup>135</sup> Finally, she states that policies can "accrete" without decision through repetition of an action, a series of actions and reactions, or as a side effect of other decisions.<sup>136</sup>

Weiss' conceptions will prove especially useful for the analysis of the role of expertise in decision-making in my case study. I will return to them in my conclusion.

### The Problem for Policy Makers: Uncertainty

Many authors have taken up the issue of uncertainty, especially as it pertains to using scientific expertise.

In her 1986 monograph *Risk Management and Political Culture*, Jasanoff states that risk management has been considered a problem of national policy making and compares United States, Canadian, and several European policies for controlling the risk of cancer from man-made chemicals.<sup>137</sup> She focuses on the use of science in risk management and suggests the "patterns of interaction between experts and the lay public reflect fundamental features of a country's political culture."<sup>138</sup> Jasanoff contrasts each country's approach to controlling cancer risk by providing an overview of their policies, analyzing their procedures for identifying carcinogens and quantitatively estimating their risks, and discussing each country's response to advances in knowledge about cancer. Specifically, she investigates the impact of the different approaches on the regulation of formaldehyde. She then more broadly examines each country's institutional choices for managing scientific and political disputes about risk.<sup>139</sup> First, she relates institutional arrangements for public participation to each country's political culture, and second, she examines the role that the scientific community and international organizations might play in resolving disputes about "regulatory science."<sup>140</sup> Jasanoff concludes that "science fails to exert a greater harmonizing influence on risk

management" because national regulatory systems deal with uncertainty and expert conflicts differently.<sup>141</sup> They consider other interests in addition to the scientific community's views: "cultural factors influence goals and priorities," and "societies respond differently to questions of political process and institutional design."<sup>142</sup> The answers to questions of "who should participate, how much should they know, how should disputes be resolved, and by what ultimate authority" "shape the assessment of uncertainty, overshadowing science and leading in the end to widely divergent policies for managing the same technological hazards."<sup>143</sup>

Jasanoff outlines various countries' strategies for dealing with scientific uncertainty which fall into three basic patterns.<sup>144</sup> Germany (at the time she was writing) "delegate[s] the resolution of all scientific issues, including those marked by uncertainty, to technical experts."<sup>145</sup> The group then explains its determinations about risk.<sup>146</sup> Britain and Canada "let determinations about carcinogenic risk emerge from a mixed scientific and administrative process, in which uncertainty is not always publicly analyzed."<sup>147</sup> The United States "acknowledges that both scientific and political judgment are required...., but requires the political decision-maker to resolve conflicts caused by scientific uncertainty, generally in accordance with explicit agency guidelines."<sup>148</sup> It is her conclusion, based on the formaldehyde case, that the United States' approach is least likely to resolve disputes about technological risk, but that the alternatives to this approach "do not fully resolve the problem of preserving democratic values in areas of mixed scientific and political decision-making."<sup>149</sup>

Jasanoff concludes by stating that "the goals of administrative efficiency and scientific credibility are incompatible with those of analytical rigor and informed public participation" but that "understanding these trade-offs does not necessarily bring policy-makers closer to finding optimal 'solutions' to problems of risk management."<sup>150</sup> Further, she states that, "the choice of institutions and procedures in each country is rooted in its individual political culture and cannot readily be modified, even if the costs are substantial."<sup>151</sup>

In her 1990 book *The Fifth Branch*, Jasanoff takes up where the earlier book left off: the scientific advisory process is rarely examined or public. She discusses her study of the role of advisory committees involved in the United States regulatory process as an example.<sup>152</sup> She defines the technocratic approach as one that "looks to scientists as primary validators of policies with high technical content" and the democratic approach as one that "views broad public participation as the antidote to abuses of expert

authority."<sup>153</sup> She argues that neither of these two typical models "for controlling the use of science by regulatory agencies.... takes adequate account of the nature of science or of politics."<sup>154</sup>

Jasanoff uses two federal agencies - the Environmental Protection Agency and the Food and Drug Administration - and their committees as key examples. She sets up the historical and analytical framework for her study by discussing some factors that constrain the ability of committees to be "legitimizers of public policy."<sup>155</sup> Specifically, she describes the institutional and political environment within which the committees work and relates the problems (the public's increasing concern about technological hazards, reduced trust in government, and uncertainty about expert involvement in political decision-making) to the literature on the combination of science and values in regulatory processes and "the contingent and negotiated character of scientific knowledge."<sup>156</sup> Jasanoff argues that "three major findings... must be taken into account in any serious discussion of scientific advising."<sup>157</sup> First, "scientific 'facts' are, for the most part, socially constructed."<sup>158</sup> Her main concern in the book is "to investigate how scientific advice affects both the construction and deconstruction of claims in the regulatory process."<sup>159</sup> The second finding challenges "the notion that scientific facts are tested and established with reference to objective criteria of validity."<sup>160</sup> She develops the theme that "the embedding of science in political frameworks exacerbates... tendencies toward personalizing issues of experimental quality."<sup>161</sup> The third challenge lies in "how science succeeds in acquiring and maintaining cognitive authority in a distrustful world," particularly through the strategies that scientists use to determine membership of "peer groups and networks of prestige or authority" (Thomas Gieryn calls these boundary work).<sup>162</sup> Jasanoff suggests peer review is "how scientific advisory committees are able to preserve the appearance of authority even in the face of uncertainty and political conflict."<sup>163</sup>

Jasanoff goes on to discuss and dismiss the technocratic and democratic approaches.<sup>164</sup> In particular, she reviews the technocratic proposals for reform that resulted from four controversies (nitrites, 2,4,5-T, Love Canal, and estimates of occupational cancer) and argues that they "carried a more ambiguous message than is evident from these proposals."<sup>165</sup> Then she analyzes democratic approaches (judicial review and open decision-making) and states that their "limitations... underscore the continued need for scientific advisory mechanisms in the regulatory process."<sup>166</sup> She contrasts regulatory science (Salter calls this mandated science) with research science



and argues that based on the science fraud literature, there are problems of accountability in both. Jasanoff then examines how the Environmental Protection Agency and Food and Drug Administration use their advisory bodies, and evaluates the general application of other technocratic approaches, such as delegating responsibility for risk assessment to the National Academy of Sciences. She concludes by presenting an amended view of how science interacts with politics in the regulatory process, and discussing how to improve the advisory process.<sup>167</sup> In particular, she states that her study contradicts several assumptions about the advisory process (including "scientific advisers can or do limit themselves to addressing purely scientific issues," "scientists are always conservative in assessing risks," and "advice is merely a pretext for delaying decisions"), that it "seems increasingly important as a locus for negotiating scientific differences that carry political weight," and that advice "serves an invaluable function in a regulatory system that is otherwise singularly deficient in procedures for informal bargaining."<sup>168</sup> Further, "since scientific knowledge is in perpetual flux and demands constant renegotiation, interactions involving advisory committees have to be structured in accordance with norms more flexible than those of formal and informal administrative rulemaking."<sup>169</sup>

Finally, the negotiated model of regulatory science suggests that the risks of science seizing the reins of decision-making from political institutions may have been overdrawn. Negotiation commits scientists, no less than other actors, to moderating their views toward a societal mean.<sup>170</sup>

Brian Wynne, in his 1992 article "Uncertainty and Environmental Learning," clarifies the uncertainty issue significantly.<sup>171</sup> He states that the goal of environmental policy has moved towards prevention (from end-of-pipe to upstream decision-making), and he argues that this not only exposes existing uncertainty about environmental effects, but also two fundamentally new types of uncertainty: ignorance and especially indeterminacy. He further argues that the preventive approach involves much more than shifting the threshold of proof in a body of scientific knowledge; it involves the possible reshaping of the knowledge itself.<sup>172</sup> Risk assessment, originally developed for well-structured mechanical problems, is now used for badly structured environmental problems in which "the limitations of available knowledge are potentially more serious."<sup>173</sup> This is because "in constructing analytical models of environmental systems, externally defined significant end-points, or pragmatic considerations, such as what can actually be measured, often dictate the structure of the resulting knowledge."<sup>174</sup>

These practices (including the use of surrogate and composite variables) "artificially reduce uncertainties and variations" and become so routine to practitioners that they forget this.<sup>175</sup>

There are four types of uncertainty in scientific knowledge.<sup>176</sup> For risk, Wynne argues that the odds are known; for uncertainty, they are not, but the main parameters may be known (uncertainty may be reduced but ignorance may increase); for ignorance, what is not known is not known ("ignorance increases with increased commitments based on given knowledge"); and finally, for indeterminacy, "causal chains or networks [are] open."<sup>177</sup> In contrast to Jerome Ravetz and Silvio Funtowicz, these four types of uncertainty are not easily placed on a scale of uncertainties, but rather they overlaid one on the other.<sup>178</sup> In particular, indeterminacy is "embedded" even at the low end of the scale (what Ravetz and Funtowicz call risk).<sup>179</sup> Social commitments (using Wynne's terminology) or decision stakes cannot be independent of uncertainties. They determine what type of uncertainty is being expressed and they are themselves indeterminate and conditional.<sup>180</sup> "When discussing the burden of proof for environmental decisions it is mistaken to assume that there is an objective level of uncertainty intrinsic to any piece of scientific knowledge."<sup>181</sup> Wynne gives examples of how "indeterminacy underlies the construction of scientific knowledge" (in toxic waste disposal and the Chernobyl nuclear accident), and argues that ignorance and indeterminacy should be included in a greater public debate about the implications of society's commitment to certain technologies.<sup>182</sup> Further, he says that this could reshape the body of knowledge itself and even implement a preventive approach.<sup>183</sup>

While it is unlikely that the "uncertainty" problem in policy making will ever be put to rest, Jasanoff's and particularly Wynne's, contributions move beyond the rhetoric and politics of uncertainty, which bedevils policy makers, to a more analytical approach that is useful for this thesis.

### Whose Expertise?

This dissertation primarily concerns scientific expertise, but most authors distinguish scientific expertise from public or non-scientific expertise, and therefore it is useful to consider the two together.

In William Leiss' 2001 book *In the Chamber of Risks*, Leiss argues that industry and governments have made progress in health and environmental risk management.<sup>184</sup>

However, Leiss continues, "they often mismanage public controversies in these areas."<sup>185</sup> He concludes that three propositions should guide effective management: "public perceptions are legitimate and must be treated as such, that risk management subsists in an inherently disputable zone, and that the public ought always to be involved (through good risk communication practices) in discussions about the nature of risk evaluation by scientists and risk managers."<sup>186</sup> He uses as key case studies controversies in Canada and elsewhere about genetically modified foods, cell phones, MMT (a fuel additive), nuclear power, pulp mill effluent, toxic chemicals management, tobacco control, and cloning risks.<sup>187</sup>

Leiss firmly believes that it is essential to distinguish between risk issue management and risk management, stating the most important difference is that, in the former, "risk issues are not primarily driven by the state of scientific risk assessments," but that "such assessments are just one of a series of 'contested' domains within the issue."<sup>188</sup> He states that governments must do both, but they are poor at risk issue management "mainly because they do not accept the legitimacy of risk controversies."<sup>189</sup> A key reason for the view that "widespread managerial incompetence prevails" is that risk management agencies have seen themselves as "experts in hazard characterization, and to a lesser extent in risk assessment, whereas what is needed from them above all is expertise in risk issue management."<sup>190</sup> For example, in response to public concern about hazards, agency representatives (that is, their professional staff) dealt with the characterization, but not the concern, when they should have addressed them as a whole.<sup>191</sup> "Because of the close interaction of business and government in today's economy, there are ample opportunities for each to do considerable damage to the other through failures in risk issue management."<sup>192</sup> Specifically, as the first four cases show, "serious failings by industry in risk issue management have compromised government's ability to carry out publicly credible risk management."<sup>193</sup> The remaining four cases illustrate that "governments are sometimes paralysed by risk issues and unable to give clear policy direction either to the public or to industry (or in some cases both)."<sup>194</sup> Controversy about global climate change "already shows how some governments are willing to leave industry twisting in the wind... by avoiding their responsibilities to set a clear policy context and to help the public understand the full ramifications of this complex issue."<sup>195</sup>

In some of his case study examples, Leiss believes that "the evolution of issues... have been dictated in part by ENGOs [environmental groups] that have shown

themselves capable of matching industry's global reach, while in others... more localized citizen groups have been significant actors in the controversies."<sup>196</sup> In light of all this, Leiss offers guidelines on improving competence in risk management, including accepting responsibility, addressing uncertainties, managing the science/policy interface, and communicating risks appropriately. In the appendix, he describes how independent expert panels are structured and how they function.<sup>197</sup>

Leiss concludes that "as recent experience in Canada shows, there is some serious misalignment in the interplay between science and public policy within government," and states that the "old pattern - where government departments do scientific work directly which is then applied to policy choices - is obsolete."<sup>198</sup> He offers "a new paradigm... one where governments manage health and environmental risks, and draw upon independent scientific bodies for the risk assessment expertise they need in order to carry out their risk management mandate effectively."<sup>199</sup> He states that, "the strict institutional separation of science and policy is good for both [because] science is only useful to policy when it is completely true to itself... [and] good policy does not and cannot flow automatically from science itself."<sup>200</sup>

In Arie Rip's 2003 article "Constructing Expertise," Rip reviews a discussion paper by Harry Collins and Robert Evans which offers a normative theory of expertise as the next step in science studies.<sup>201</sup> Generally, Rip agrees with Collins and Evans about this being an important challenge, but Rip is critical about their approach. Rip agrees with Collins and Evans that certification does not recognize all types of expertise, especially experience-based expertise, but questions how such expertise can be recognized. He also agrees that more participation by non-specialists is not always desirable, but he feels that Collins and Evans should clarify if they mean that participation should be decided on a case-by-case basis.<sup>202</sup> Rip disagrees that it is useful to start with "esoteric" sciences (high energy physics, for example) as a model, and that sociologists studying such sciences should provide the perspective.<sup>203</sup> Collins and Evans simply assume that esoteric sciences should not be interfered with, and they suggest that the new experts have to prove their expertise to "a core-set community" with the help of intermediaries.<sup>204</sup> Further, Collins and Evans do not indicate how the rights of esoteric experts (in their words) "accrue" and are to be recognized.<sup>205</sup> Generally, Rip argues Collins and Evans' approach is too narrowly constructed within sociology, and thus that it neglects to consider the context within which expertise is shaped.<sup>206</sup> Rip challenges their assertion of the "self-evident and productive role" of

core-sets in esoteric sciences and he argues that there is no common agreement even within these sciences.<sup>207</sup>

Rip argues that an understanding of the processes of knowledge production and their outcomes is crucial to a normative theory.<sup>208</sup> Viewing the processes as "path-dependent learning," Rip states that core-sets of ideas may not be available beyond the laboratory.<sup>209</sup> He proposes an alternative: Instead of core-sets, reliance should be placed on "hybrid forums" or on participation exercises where a variety of both stakeholders and experts with credentials are involved.<sup>210</sup> This hybrid notion of knowledge, Rip argues, could be the basis for a more properly grounded normative theory.<sup>211</sup> In particular, he argues that "actors creating a 'forceful focus' must also be welcomed."<sup>212</sup> In support of this normative theory, Rip goes on to add two more types of expertise: discrimination and knowledgeability.<sup>213</sup> Both relate to "a general understandings of the issues and the ability to make critical contributions."<sup>214</sup> When critical participants acquire expertise during a controversy, competencies evolve.<sup>215</sup> Rip concludes that "the definition of a right to be involved as expert must take this into account."<sup>216</sup>

In his 2000 article "Making Systematic Sense of Public Discontents with Expert Knowledge," Steven Yearley takes up the issues raised by Rip.<sup>217</sup> He reviews two analytical frameworks for studying public "discontents" with expert knowledge (one by Funtowicz and Ravetz, the other by Wynne), and assesses their usefulness by applying them to a case study of local understanding of an air-quality model.<sup>218</sup> Yearley questions the rationale and scope for Funtowicz and Ravetz's call for public involvement in knowledge production and certification when uncertainty and decision stakes are high. He argues that Funtowicz and Ravetz incorrectly assume (1) that the two dimensions can be agreed on and measured in an objective way, questioning how technical (low), methodological, and epistemological (high) uncertainty shade into one another; and (2) that assessments of uncertainty and decision stakes are separate, stating that often the stakes cannot be assessed without an opinion about what is known.<sup>219</sup> Yearley further argues that "the qualifications for participation and the mechanisms for deciding that" are unclear.<sup>220</sup>

Yearley suggests that Wynne is, in fact, arguing for two things related to public expertise. First, in matters of ignorance, Wynne is suggesting that expertise resides in the ability to decide whom to trust; and secondly, Wynne is saying that, in matters of

indeterminacy, the public may be more expert than scientists in making assumptions about the social world (for example, slaughterhouse practice).<sup>221</sup>

With respect to inviting lay respondents to act in a "quality-assurance capacity," but not with respect to Funtowicz and Ravetz's other points, Yearley notes that the public is unlikely to only agree to be peer-reviewers.<sup>222</sup> Thus he finds stronger support for Wynne's framework, especially that it is often laypeople's awareness of ignorance and indeterminacy that accounts for public discontents in the first place.<sup>223</sup> There is no "technical fix" (Yearley's words) for ignorance and indeterminacy.<sup>224</sup> However, Yearley does suggest that focus groups (the method he used in his study) could be a good way of clarifying what is ignored and for identifying the social and political assumptions.<sup>225</sup>

These three bodies of literature set a framework for the study that follows. I will take up the usefulness of the various approaches later, in my conclusion, when I identify and answer several questions about the role of scientific expertise in the case study I have chosen.

### The Research Strategy

In this section, I discuss the research strategies that I used to investigate the influence that government experts have in deciding environmental priorities. I designed and conducted a multiple-case study of various projects that occurred during the early to mid-1990s. My primary cases include three projects conducted by Environment, Ontario Environment & Energy, and Environment and Health. My secondary cases include projects conducted by the Environment Council of Alberta, Victoria (British Columbia) Capital Regional District, British Columbia-Washington State Environmental Cooperation Council, Canadian Council of Ministers of the Environment, and United States Environmental Protection Agency. (The purpose of each of these projects was to develop and use a formal process to determine environmental priorities.)

A case study is the preferred research strategy when "a 'how' or 'why' question is being asked about a contemporary set of events over which the investigator has little or no control."<sup>226</sup> Traditional concerns about the strategy include: case study research lacks rigor; case studies "provide very little basis for scientific generalization"; and case studies "take too long and result in massive, unreadable documents."<sup>227</sup> I generally followed Robert Yin's case study approach discussed in his excellent book *Case Study Research: Design and Method*. Figure 1.3 summarizes the approach that I followed. In

particular, I used several tactics recommended by Yin to increase the validity and reliability of my study, during the various phases of my research (see Table 1.2). In research design, I used replication logic. In data collection, I used multiple sources of evidence, used a case study protocol, established a chain of evidence, and developed a case study database. In data analysis, I performed pattern matching analysis. My general analytic strategies were to first develop a case description and then rely on theoretical propositions. My dominant mode of analysis was pattern matching logic, leading to explanation building. In composition, I had a key informant review my draft case study report.

Although it is always a challenge to do a "good" case study, I found case selection particularly difficult because the process of determining environmental priorities is both complex and closed.<sup>228</sup> Because of this difficulty, I focus on case selection as I discuss my strategies in more detail.

### Case Selection

When I began my study in July 1993, I was already investigating the Priority Substances List 2 and Environment Canada projects (through a research project conducted by one of my committee members). These two projects were at least potential secondary cases because, given my definition of the process of determining environmental priorities, almost any example of a policy process could be appropriate. Because it was impossible to identify every possible example, I decided to select potential primary and secondary cases as I came across them, often by chance. The two projects, however, were only potential primary cases because I had three major outstanding questions that needed to be addressed satisfactorily: (1) Were such cases of *formal* (planned) processes appropriate examples of determining environmental priorities? (2) Because these cases were themselves *developing and using* formal processes, were they appropriate examples? I considered the question of the relevance of formal processes that included scientific ranking methods *based on risk assessment and management* (such as the processes being developed by the Priority Substances List 2 and Environment Canada projects) as relatively minor because the scientific ranking methods are all basically the same.<sup>229</sup> (3) Would I be able to collect relevant and usable evidence, both in terms of quantity and quality, for each of these cases?

Although Environment and Health had already granted me permission to observe the Priority Substances List 2 Project (including access to the secretariat's Project file), I would later need permission from the outside expert panel appointed by the Environment and Health ministers to identify and rank the chemical problems. I was particularly interested in the Environment Canada Project because (unlike the Priority Substances List 2 Project) the focus of the process that was being developed was broad: ranking environmental problems (not just chemicals) to be managed (including to be controlled and researched, and not just assessed). Also (at least for some Environment Canada Project participants), the plan was to use the process to determine federal or even national priorities, not just departmental priorities. However, the Environment Canada Project members themselves did not know when, or if, this process would actually be used. Further, as I immersed myself in the theoretical and applied worlds of determining environmental priorities, it seemed apparent that they were not yet being used, although Canadian governments (and industries) were increasingly interested in developing and using such broadly focussed processes, especially formal processes including scientific ranking methods based on risk assessment and management.<sup>230</sup> If they were not being used, then such cases, including the Environment Canada Project, would only be examples of the influence that government experts had in deciding one environmental problem (the Project) as a priority, rather than being examples of their influence in determining many environmental problems as priorities. And perhaps they would not be representative examples because the purpose of the projects was to change (increase) the influence that government experts had.

I eventually answered question #1 about whether formal processes are appropriate examples of determining environmental priorities. Yes, they were because the decisions (and non-decisions) about the allocation of resources by governments to try to resolve environmental problems are explicit. Without this explicitness, the process would be far too complicated to study. (Cases of formal processes can still include informal ones, for example, the process leading up to the initial decision to establish an environmental problem/a project as a priority.)

I now had answered one question towards selecting the Priority Substances List 2 and Environment Canada projects as primary cases, but still had two more questions to answer. Meanwhile, as I continued to examine various processes for deciding environmental priorities, I began examining in April 1994 my third potential primary case - the Ontario Environment & Energy Project (one of my committee members was



involved in it). This case was also developing and using a formal process. The focus of the process was similar to the Environment Canada Project except that the plan was to use it to determine Environment & Energy's environmental priorities. I thought that I had the answer to question #3 for this case: Would I be able to collect relevant and usable evidence? Yes, I would, especially because the Environment & Energy Project coordinator gave me permission to observe the Project meetings. (I had been hired in June 1994 to write a background paper for the Project called Environmental Priority Setting.<sup>231</sup>)

However, in February 1995, I became concerned about selecting the Priority Substances List 2 and Ontario Environment & Energy projects as primary cases.<sup>232</sup> In the former case, I was refused permission by the outside expert panel to observe their meetings. In the Environment & Energy case, I was asked by them to sign a confidentiality agreement by . Further, the agreement was backdated to the beginning of January. These events might cause real difficulties for selecting these cases. I did not sign the agreement and stopped participant-observation to avoid any conflict with my doctoral research. Events took a turn for the better in May 1995 because I affirmatively answered question #3 for the Environment case so that I was able to collect relevant and usable evidence. In particular, I was given access to the Environment Canada Project file.

It was not until July 1995, after reviewing and beginning to analyze the evidence that I had collected (especially for the Environment case), that I had the answer to question #2: Were cases developing and/or using formal processes appropriate examples?<sup>233</sup> Yes, they were. Specifically, given the gaps in the literature, it was significantly more important to address the last major research question that I asked (Does the influence that governmental experts have make a significant difference to determining of "good" environmental priorities?). Therefore, it was less significant if the cases (whether or not they were developing and/or using formal processes) represented the full range of influence that government experts have in deciding environmental priorities. Further, cases developing and/or using formal processes provided crucial and rare evidence about the influence that government experts could have, because the purpose of the projects was basically to change (typically increase) their influence (whether or not the formal processes were developed and used). I now had the answers to my three questions and could finally select the Priority Substances List 2,

Environment Canada, and Ontario Environment & Energy projects as my three primary cases.

However, I was no longer concerned about selecting the Priority Substances List 2 and Ontario Environment & Energy cases because the evidence I had for the Environment case was of exceptionally higher quantity and quality. Indeed, this was one of the reasons I decided to make the Environment case the major focus of my dissertation. I had two additional reasons: First, such evidence was necessary for addressing my final two research questions. Second, this evidence included other government (and non-government) processes of determining priorities that intersected (and sometimes collided) with the Environment Canada Project, including the Priority Substances List 2 and Environment & Energy projects. As a result, the Environment case included examples of processes of determining other projects as priorities, as well as the Environment Canada Project, that is, several other (secondary) cases.

I re-evaluated my case selection because I encountered some problems when I conducted my interviews: some people could not remember many (any) details; a few people were always too busy to meet; one person who had played a key role sent a substitute who had played a minor role; one person did not show up or return my subsequent phone calls; and one person cancelled the interview. However, these problems were not important enough to change my decision to focus on the Environment case. Indeed, they were important evidence in it. I remained confident about all of my answers to my outstanding questions as I continued to (more selectively) examine various processes for determining environmental priorities, to analyze the evidence that I collected, and began to compose my dissertation.<sup>234</sup>

### The Big Picture

When the Environment Canada Project began in 1992, environmental issues were a high priority in Canada. In the introduction to their book *Canadian Environmental Policy: Context and Cases*, Debora VanNijnatten and Robert Boardman describe the national perspective at that time:

...'Sustainable development' and ecosystems' were relatively new concepts in the political vocabularies of Canadians and environmentalism was experiencing its 'second wave.' New information on the extent and complex nature of environmental degradation was being discussed in various political and social fora, and the public

appeared worried about the environment, ...according to opinion polls. ...The federal government looked as if it might... flex its regulatory muscles, despite provincial and private-sector opposition. The Canadian Environmental Protection Act... was... new, the Canadian Environmental Assessment Act... was being proposed, and the federal Green Plan of 1990 appeared to provide some strategic direction for environmental policy as well as monies to pursue ecological objectives.

...These new legislative and policy initiatives were being constructed in a more transparent manner, with the input of environmental groups, industry, and scientists. ...Consultative processes and new legal mechanisms promised non-governmental and non-industry actors a more significant role in decision-making. Round tables on the environment and economy were established at the national level and in the provinces to explore the implications of sustainable development for Canada's future. ...Canada and the US had just negotiated an Air Quality Agreement under which both countries agreed to reduce emissions causing acid rain. ...Canada, along with other countries of the world, was making plans to endorse formally sustainable development and to sign international conventions on global climate change and biodiversity at the 1992 Rio Earth Summit.<sup>235</sup>

The Green Plan is summarized in Table 1.3.

During the Project, from 1992 to 1995, and after, environmental issues continued as a priority in Canada, but interest was waning. VanNijnatten and Boardman go on to say (as of 2000):

...Canada's (and indeed global) environmental problems have been shown to be more complex than originally thought, some even intractably so....

Some problems... were not even on the agenda in the early 1990s....

...The concept of sustainable development has increasingly given way in environmental policy discourse to the... 'sustainability' approach.... [the Canadian Environmental Protection Act], revised over 1997-9....

There is... continuity in the federal government's reluctance to test its regulatory powers, the provincial opposition to accept an expanded... federal role in environmental policy, and the use of intergovernmental accommodation to steer Canadians... The trend... deepened with... the Canada-Wide Accord on Environmental Harmonization in 1998... Negotiations on harmonization, which took place over 1993-8, provoked much critical commentary....

....Although the public has continued to express moderate levels of concern about environmental degradation, such concerns have ranked well behind other issues such as the deficit (in the mid-1990s)... ...Political parties have paid relatively little attention to the environment in their election platforms and campaigns....

Governments... moved away from formal legislative and regulatory means of achieving environmental goals over the 1990s... towards a reliance on voluntary corporate initiatives.... ...budget-cutting and program review exercises of the federal government beginning in 1994, the deficit-cutting and 'red tape reduction' exercises of the Ontario government beginning in 1995, and various reductions and 'rationalizations' in other provinces... ...mounting debts... New Public Management advocates....

Considerable debate has accompanied this development....

....The early 1990s represented the apex of multi-stakeholder consultation in environmental policy-making. Over the late 1980s-early 1990s, multi-stakeholder

consultations were being employed in conjunction with the formulation of almost all new environmental policies at the federal level...: the [Canadian Environmental Protection Act], the [Canadian Environmental Assessment Act], the Green Plan, the Federal Pesticide Registration Review, and the National Pollutant Release Inventory, to name a few. Extensive consultations were also being conducted by the provinces... The role of non-governmental environmental groups in the policy process has changed.... ...The doors of negotiating rooms are not as open to them....

Aboriginal peoples... increasingly find themselves seated inside....

.....The processes of economic, social, and political integration now associated with trends towards continentalization and globalization were highlighted from 1994 onward in debates about the North American Free Trade Agreement.<sup>236</sup>

In 1992, while environmental issues were a high priority from a national perspective, so were they from the perspective of Environment. Bruce Doern describes in his chapter "Environment Canada as a Networked Institution" in VanNijnatten and Boardman's book:

[Environment's] sense of place in national priorities reached its zenith with the announcement of the \$3 billion Green Plan in 1990. This... position was underpinned by several contributing forces and ideas that included: some newsworthy natural disasters in late 1980s; the ascendancy of evidence and debate about global warming; and the articulation of the philosophy of sustainable development by the Brundtland Commission and then its endorsement by G-7 leaders at their 1988 Toronto Summit. A new federal assertiveness was in evidence during this period, backed by opinion polls that strongly supported both the environment as a national priority and federal leadership. Arguably, this period peaked or ended with the Rio Earth Summit in 1992 but included the... acid rain agreement with the US.<sup>237</sup>

From 1992 to 1995 and after, not only was the priority of environmental issues declining for Canadians, so it was for Environment. Doern continues (as of 2000):

Cuts in the Green Plan began to occur almost immediately, but the dominant impetus for the decline in the environment as a perceived political priority came from the recession of the early 1990s and initiatives to manage the growing federal deficit. These initiatives took the form of a major governmental reorganization in 1993 and the introduction of Program Review in 1994.... The net effect of the various phases of Program Review was that Environment... absorbed a budget cut of over 31% and lost almost 23% of its personnel. The department in 1993 had just lost Parks..., which was transferred to the newly formed... Heritage, and it was also engaged in reorganizing its regional personnel into five integrated regions.... Meanwhile,... the department's mandate had... grown, as had its statutory base. These enlarged responsibilities had emerged from the development of legislation such as the Canadian Environmental Protection Act... and the Canadian Environmental Assessment Act, as well as from post-Rio obligations on matters such as global warming and biodiversity. Parliament has further deepened the mandate in 1999

through a revised [Canadian Environmental Protection Act] in the context of continuing resource constraints.<sup>238</sup>

These events were more or less relevant to the Environment Canada Project.

### Summary of Findings

I show that in some processes of determining the Environment Canada and other projects as priorities for Environment and other federal departments, some government experts had an influence, while others did not. In other processes, no government experts had an influence. The degree of influence depended on their type of expertise, whether or not they were asked for advice, who asked them for it, whether or not they offered it, and who they offered it to.

In the processes within the Environment Canada Project, when government experts offered advice and had a major influence, they were economists. Economists also had a minor influence or none. When economists had a major influence, it was typically because they were asked for advice by government decision-makers and offered it to them. Natural scientists who offered advice had a minor influence or none because they were not asked for advice by government decision-makers, even if they offered it to them. Government experts did not offer advice unless they were asked for it, and they were not asked for it when the decision-makers were Environment senior managers.

Some government experts advised that the Environment Canada Project should continue to be a priority. Yet ultimately it was not and the science-based process was neither developed nor used. Government and non-government experts were not asked for advice by anyone and did not offer it. I argue that their lack of influence made a significant difference because they did not and could not make the limits of science in determining priorities explicit or widely known.

Experts identified some of these limits and tried to incorporate them into the Environment Canada process by separating questions related to science from those related to administration and policy. Other limits were revealed through the arguments that government and non-government participants had about the experts who should be involved in deciding priorities, and the arguments that experts had with other participants about how priorities should be determined in general, including the resolution of those arguments. Some of the arguments that seemed to be resolved were raised again, the

resolution of some of the arguments was contrary to the experts' recommendations, and some of the experts' recommendations conflicted with those of other experts, who along with other participants sometimes resolved the arguments. Further potential limits were revealed by the questions that experts did not answer even though the participants all seemed to agree that they should answer them.

This dissertation suggests that science might have very little to do with determining priorities because this process, science-based or not, mostly involves administration and policy. If science is to have a major influence, experts must attempt to develop a science-based process and widely communicate their results beyond government and interest groups.

### The Structure of This Dissertation

This chapter has introduced my dissertation investigating the influence that government experts have in determining environmental priorities. I have discussed my major research questions by defining some key terms, reviewing the literature, and explaining my research strategy; and I have summarized the answers that I found to these questions in my multiple-case study.

Chapters 2 through 9 examine the influence that government experts have in deciding environmental priorities by describing and analyzing my major primary case: the 1992-95 Environment Canada Project (to develop and use a science-based process to determine Environment's priorities - the Environment Canada process).<sup>239</sup> Part I, including chapters 2 and 3, is about the promise of science-based decision-making for determining environmental priorities. Part II, including chapters 4 through 6, is about the science of science-based policy making. And Part III, including chapters 7 through 9, is about science-based decision-making in the determination of environmental priorities.

To present my evidence, I follow the decisions made by government decision-makers that established the Environment Canada and other projects as priorities for government agencies over time. I highlight the influence that government experts and other participants had in making these decisions, especially their arguments about how environmental priorities should be determined - including whether the projects themselves should be priorities, who should be involved in deciding priorities more generally, how they should be involved, the scope of various processes for determining priorities, and the processes themselves - and how these arguments were resolved.<sup>240</sup>

Besides arguments, I highlight *any* questioning about the involvement of experts. This includes questions about science, economics, risk assessment, and benefit-cost analysis since it is experts who conduct these. A chronology of key events is shown in Table 1.4.

The processes of determining the Environment Canada and other projects as priorities for government agencies are organized according to those of determining the Environment Canada Project as a priority for Environment and other federal departments. As shown in Table 1.5, Chapter 2 covers the process of establishing the Project for Environment. It began ostensibly in September 1992 and ended in November 1992 when the Environment/Conservation & Protection assistant deputy minister approved the Project. Figure 1.4 shows the federal government structure key to the Project at that time.

Chapter 3 covers the first and second processes of re-establishing the Project for Environment. The first process began and ended in November 1992 when the Environment deputy minister approved the Project. The second process began in November 1992 and ended in December 1992 when the Conservation & Protection assistant deputy minister approved Phase 1 of the Project plan (to develop the process).

Chapter 4 covers the third process of re-establishing the Project for Environment, and the first process of re-establishing it for Environment and other federal departments. The third process began in December 1992 and ended in May 1993 when the Environment/Policy Advisory Committee approved the plan. The first process began in April 1993 and ended in June 1993 when the Director General Steering Committee approved Phase 1 of the plan.

Chapter 5 covers the second process of re-establishing the Project for Environment and other federal departments, and the fourth process of re-establishing it for Environment. The second process began in June 1993 and ended in August 1993 when the Director General Steering Committee approved Draft 1 of the Project report. The fourth process began and ended in September 1993 when the Conservation & Protection assistant deputy minister approved Phase 3 of the plan (to use the process).

Chapter 6 covers the third process of re-establishing the Project for Environment and other federal departments, and the fifth process of re-establishing it for Environment. The third process began in September 1993 and ended in October 1993 when the Director General Steering Committee approved Draft 2 of the report. The fifth process began in October 1993 and ended in December 1993 when the

Environment/Environmental Protection assistant deputy minister (formerly the Conservation & Protection assistant deputy minister) approved the revised Project plan (to develop the process).

Chapter 7 covers the fourth process of re-establishing the Project for Environment and other federal departments, and the sixth process of re-establishing it for Environment. The fourth process began in December 1993 and ended in January 1994 when the Director General Steering Committee approved Draft 3 of the report. The sixth process began in January 1994 and ended in February 1994 when the Environmental Protection assistant deputy minister re-approved the revised plan.

Chapter 8 covers the fifth process of re-establishing the Project for Environment and other federal departments. It began in February 1994 and ended in April 1994 when the Director General Steering Committee approved the revised plan (to use the process).

Chapter 9 covers the seventh process of not re-establishing the Project for Environment, and the process of ending it. The seventh process began in April 1994 and ended in July 1994 when the Environmental Protection/Response Assessment director general re-approved the revised plan. The process of ending the Project began in July 1994 and finished ostensibly in March 1995 when the Environmental Protection assistant deputy minister failed to approve the Project. (Environment did not finish developing the process, let alone use it. The final draft text is shown in Appendix 1.)

In addition, Chapters 2 through 4 cover the process of not establishing the Imperial Oil Project (to develop and use a science-based process to determine national environmental protection priorities) for Environment and Industry. Chapters 2 through 3 cover the process of establishing the Canadian Petroleum Products Institute Project (to develop and use a science-based process to determine petroleum products industry environmental priorities) for Environment and other federal departments (and others). Chapters 3 through 5 cover the process of re-establishing it for them (and others). Chapters 3 through 4 cover the process of not establishing the Interdepartmental Committee Project (to develop and use a science-based process to determine Canadian environmental priorities) for Environment and Industry. Chapters 5 through 7 cover the process of not establishing the expanded Environment Canada-Canadian Petroleum Products Institute Project (to develop and use the Environment Canada-Canadian Petroleum Products Institute process to determine national environmental priorities) for Environment and other federal departments. Chapter 9 covers the process of ending the



Environment Canada-Strategic Options Project (to develop and use the Environment Canada process to determine federal government pollution priorities) for Environment; and the process of ending the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project (to develop and use the Environment Canada-Canadian Petroleum Products Institute and Strategic Options processes to determine federal government and petroleum products industry pollution priorities) for them. Table 1.6 lists key projects and their purposes.

Further, each of chapters 2 through 9 begins by summarizing the answers to my three major research questions that I found in that particular chapter: What influence, if any, did government experts have in determining the Environment Canada and other projects as priorities for Environment and other federal departments? Why did they have this influence? And did their influence make a significant difference to establishing "good" environmental priorities? Each chapter section then presents my evidence.<sup>241</sup> (Key documents, unless otherwise stated, were in the Environment Canada Project file.) Finally, each chapter ends by discussing the answer to my first question, and begins to discuss the answers to my final two questions.

My concluding Chapter 10 is about the limits of a science-based process. There I summarize and finally discuss the answers to all three of my questions from the Environment case, and extend my findings by combining them with those from my secondary cases. This chapter discusses the theoretical relevance of my overall findings on the influence that government experts had in determining environmental priorities, and the dissertation ends by discussing the practical relevance.

For the seasoned reader who is familiar with the sheer volume and flow of documentation in government policy processes, the short story is contained in Chapters 2 through 9 in the introductions to the sections, the bolded text within the evidence, and the discussions.

I have assumed that my readers are familiar with Canadian environmental policy in general.

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#### NOTES

<sup>1</sup> For the purpose of this dissertation, I use the term "government" to refer to the governments of *Canada* unless otherwise stated.

<sup>2</sup> The other federal departments included: Industry, Science & Technology Canada (Industry, now Industry Canada); Health; Energy, Mines & Resources Canada (Energy, now a service within Natural Resources Canada); Agriculture Canada (now Agriculture & Agri-Food Canada); Transport Canada; Finance Canada; and Fisheries & Oceans Canada (Fisheries).

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The problems included: ultraviolet-B radiation, smog, hazardous air pollutants, contaminated sites, climate change, acid rain, hazardous chemicals, pesticides, wetland degradation, fish health, forest decline, genetically modified organisms, exotic species (zebra mussel), and soil degradation.

<sup>3</sup> The other federal departments included: Industry & Science Canada (Industry; formerly Industry, Science & Technology Canada), Energy, Agriculture, Forestry Canada (now a service within Natural Resources Canada), Fisheries, and the National Research Council.

<sup>4</sup> However, two notable contributions to the broader relevant literature are on establishing environmental priorities, G. Bruce Doern and Thomas Conway, *The Greening of Canada: Federal Institutions and Decisions* (Toronto: University of Toronto Press, 1994); and on the roles that government experts play in policy processes, Janet E. Halliwell and William Smith, "Scientific Advice in Government Decision-Making: The Canadian Experience," a report in support of the work of the Council of Science and Technology Advisors, JEH Associates Inc., Gloucester, Ontario, March 22, 1999.

<sup>5</sup> In addition to my study, the following studies in particular informed my definition: on establishing environmental priorities, see John W. Kingdon, *Agendas, Alternatives, and Public Policies*, 2d ed. (Ann Arbor: HarperCollins, 1995); Doern and Conway; Kathryn Harrison and George Hoberg, "Setting the Environmental Agenda in Canada and the United States: the Cases of Dioxin and Radon," *Canadian Journal of Political Science* 24, 1 (1991): 3-27; and Michael Howlett, "Predictable and Unpredictable Policy Windows: Institutional and Exogenous Correlates of Canadian Federal Agenda-Setting," *Canadian Journal of Political Science* 31, 3 (1998): 495-524; and on establishing priorities in general, see G. Bruce Doern and Richard W. Phidd, *Canadian Public Policy: Ideas, Structure, Process*, 2d ed. (Scarborough, Ontario: Nelson Canada, 1992). Although the Kingdon study focuses on United States federal government priorities, several Canadian studies such as Harrison and Hoberg, and Howlett, "Predictable and Unpredictable Policy Windows," have partially tested his model and found it applicable to Canada. (But see Stuart Soroka, "Policy Agenda-Setting Theory Revisited: A Critique of Howlett on Downs, Baumgartner and Jones, and Kingdon," *Canadian Journal of Political Science* 32, 4 [December 1999]: 763-72; and Michael Howlett, "Rejoinder to Stuart Soroka," *Canadian Journal of Political Science* 32, 4 [December 1999]: 773-79.)

It is important to note that there are very few Canadian studies about determining environmental priorities and, even more surprising, very few studies about determining priorities in general. Based on my own study, I consider the descriptive information contained in these studies to be sound.

<sup>6</sup> Although there seems to be agreement (or lack of disagreement) about what factors can influence the establishment of environmental priorities, there is a lack of agreement about what factors, if any, have more influence and why specific factors have the influence they have.

<sup>7</sup> It is interesting to note that many of the studies limit their discussion to the roles that the various participants play; only a few studies also discuss the roles that the other factors such as jurisdiction and mandate play (see Table 1.1). Furthermore, most authors are not clear about how they identify a problem as a priority, and even if they are, they often only address the initial decision to establish it and perhaps to end it.

<sup>8</sup> The more relevant studies are Doern and Conway, and Christina Chociolko and W.G.B. Smith, "Setting Environmental Management Priorities: Rethinking Risk Analysis," in *Risk Analysis and Management in a Global Economy: Proceedings of the Society for Risk Analysis (Europe) Annual Conference Held in Stuttgart, Germany, May 21-25, 1995*, ed. Ortwin Renn (Stuttgart: Centre for Technology Assessment, 1997), 73-97. See also S. Michelle Driedger and John Eyles, "Charting Uncertainty in Science-Policy Discourses: The Construction of the Chlorinated Drinking-Water Issue and Cancer," *Environment and Planning C: Government and Policy* 21 (2003): 429-44.

<sup>9</sup> The more relevant study is Doern and Conway. See also Driedger and Eyles.

<sup>10</sup> One exception is the study by Doern and Conway (they provide an academic explanation that, simply put, government experts play the roles that they play because other factors play the roles that they play).

<sup>11</sup> Doern and Conway, 232-33.

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<sup>12</sup> Hickling Corp., "Application of Economic Analysis to the Development of Priorities for Environment Canada," final report submitted to the Environment Canada, Corporate Policy Group, Policy Directorate, April 19, 1993.

<sup>13</sup> This group includes studies that assume government *and* non-government experts know best, and studies that assume non-government experts alone know best. The more relevant of the former include: Chociolko and Smith; Environment Canada, Environmental Protection Service, Response Assessment Directorate, "Environmental Issue Definition and Ranking: A Proposed Methodology for Environment Canada," Hull, Quebec, April 27, 1994; and Environmental Priorities Working Group, "Environmental Priority Setting Methodology," August 1993; and the more relevant of the latter include: Institute for Risk Research, "The Development of a Methodological Framework for Establishing Priorities for Environmental Protection," draft proposal submitted to the Advisory Committee on Environmental Protection, Institute for Risk Research, Waterloo, Ontario, November 6, 1992; Tee L. Guidotti, "Managing Environmental Research in a Government Agency: Priorities in Chemical Hazards," *Environmental Research* 68, 2 (1995): 133-39; and G. Bruce Doern, *The Politics of Risk: The Identification of Toxic and Other Hazardous Substances in Canada* (Toronto: The Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario, January 1982).

<sup>14</sup> In addition to the studies cited in the previous two notes, the more relevant are: Tee L. Guidotti, "Comparing Environmental Risks: A Consultative Approach to Setting Priorities at the Community Level," *Public Health Reviews* 22, 3-4 (1994): 321-37; and John Moffet, "Environmental Priority Setting Based on Comparative Risk and Public Input," *Canadian Public Administration* 39, 3 (Fall 1996): 362-85.

<sup>15</sup> One exception is the earlier drafts of the study by Environment Canada.

<sup>16</sup> William Leiss and Christina Chociolko, *Risk and Responsibility* (Montreal: McGill-Queen's University Press, 1994).

<sup>17</sup> *Ibid.*, 14.

<sup>18</sup> *Ibid.*

<sup>19</sup> *Ibid.*

<sup>20</sup> *Ibid.*

<sup>21</sup> *Ibid.*, 278.

<sup>22</sup> *Ibid.*, 16.

<sup>23</sup> *Ibid.*, 140-44. See also Liora Salter, *Mandated Science: Science and Scientists in the Making of Standards* (Dordrecht: Kluwer Academic Publishers, 1988).

<sup>24</sup> Leiss and Chociolko, 272.

<sup>25</sup> *Ibid.*

<sup>26</sup> *Ibid.*

<sup>27</sup> Herbert A. Simon, *Administrative Behavior: A Study of Decision-Making Processes in Administrative Organization* (New York: MacMillan, 1957).

<sup>28</sup> *Ibid.*, xi.

<sup>29</sup> *Ibid.*, xiii, 20.

<sup>30</sup> *Ibid.*, xxiv.

<sup>31</sup> *Ibid.*

<sup>32</sup> *Ibid.*, xii.

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- <sup>33</sup> Ibid., xii, 125, 154, 122, 205.
- <sup>34</sup> Ibid., xii.
- <sup>35</sup> Arnold J. Meltsner, *Policy Analysts in the Bureaucracy* (Berkeley: University of California Press, 1976).
- <sup>36</sup> Ibid., viii.
- <sup>37</sup> Ibid., 3.
- <sup>38</sup> Ibid., 1-4.
- <sup>39</sup> Ibid., 4.
- <sup>40</sup> Ibid.
- <sup>41</sup> Ibid., 4-5.
- <sup>42</sup> Ibid., 5.
- <sup>43</sup> Ibid., 5-6.
- <sup>44</sup> Ibid., 6-7.
- <sup>45</sup> Ibid., 7.
- <sup>46</sup> Ibid.
- <sup>47</sup> Ibid., 7-8.
- <sup>48</sup> Ibid., 8.
- <sup>49</sup> Ibid.
- <sup>50</sup> Ibid., 9.
- <sup>51</sup> Ibid.
- <sup>52</sup> Ibid.
- <sup>53</sup> Ibid.
- <sup>54</sup> Ibid., 10.
- <sup>55</sup> Ibid.
- <sup>56</sup> Ibid., 10-11.
- <sup>57</sup> Ibid., 11.
- <sup>58</sup> Ibid., 11-12.
- <sup>59</sup> Ibid., 12.
- <sup>60</sup> Ibid., 12-13.
- <sup>61</sup> Ibid., 13.
- <sup>62</sup> Ibid., 13.

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- <sup>63</sup> Ibid.
- <sup>64</sup> William N. Dunn, "The Two-Communities Metaphor and Models of Knowledge Use," *Knowledge: Creation, Diffusion, Utilization* 1, 4 (June 1980): 515-36.
- <sup>65</sup> Ibid., 518-21.
- <sup>66</sup> Ibid., 515.
- <sup>67</sup> Ibid., 516.
- <sup>68</sup> Ibid., 517.
- <sup>69</sup> Ibid., 530.
- <sup>70</sup> Ibid.
- <sup>71</sup> Ibid.
- <sup>72</sup> Ibid., 530-31.
- <sup>73</sup> Ibid., 531-32.
- <sup>74</sup> Ibid., 532.
- <sup>75</sup> Ibid.
- <sup>76</sup> Ibid., 532-33.
- <sup>77</sup> Ibid., 533-34.
- <sup>78</sup> Ibid., 534.
- <sup>79</sup> Ibid.
- <sup>80</sup> Ibid.
- <sup>81</sup> John Markoff and Veronica Montecinos, "The Ubiquitous Rise of Economists," *Journal of Public Policy* 13, 1 (1993): 37-68.
- <sup>82</sup> Ibid., 37.
- <sup>83</sup> Ibid., 39.
- <sup>84</sup> Ibid.
- <sup>85</sup> Ibid., 40.
- <sup>86</sup> Ibid., 41.
- <sup>87</sup> Ibid.
- <sup>88</sup> Ibid., 50.
- <sup>89</sup> Ibid., 51.
- <sup>90</sup> Carol H. Weiss, "Research for Policy's Sake: The Enlightenment Function of Social Science Research," *Policy Analysis* 3, 4 (1977): 531-45. See also Nathan Caplan, "A Minimal Set of Conditions Necessary for the Utilization of Social Science Knowledge in Policy Formulation at the National Level," in Carol H. Weiss, *Using Social Research in Public Policy Making* (Lexington: Lexington Books, 1977), 183-97;

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Karin Knorr, "Policy-Makers' Use of Social Science Knowledge: symbolic or Instrumental?" in *Using Social Research for Public Policy Making*, Weiss, 165-82; and Carol H. Weiss and Michael J. Bucuvalas, "The Challenge of Social Research to Decision Making," in *Using Social Research for Public Policy Making*, Weiss, 213-30.

<sup>91</sup> Weiss, "Research for Policy's Sake," 531.

<sup>92</sup> *Ibid.*, 534-35.

<sup>93</sup> *Ibid.*, 532-33.

<sup>94</sup> *Ibid.*, 535-37, 540-42.

<sup>95</sup> *Ibid.*, 535.

<sup>96</sup> *Ibid.*, 544.

<sup>97</sup> *Ibid.*

<sup>98</sup> Weiss, *Using Social Research in Public Policy Making*.

<sup>99</sup> *Ibid.*, 2.

<sup>100</sup> *Ibid.*, 2-3.

<sup>101</sup> *Ibid.*, 4, 5, 6.

<sup>102</sup> *Ibid.*, 7, 8.

<sup>103</sup> *Ibid.*, 9.

<sup>104</sup> *Ibid.*, 9-10.

<sup>105</sup> *Ibid.*, 11.

<sup>106</sup> *Ibid.*

<sup>107</sup> *Ibid.*

<sup>108</sup> *Ibid.*, 11-12.

<sup>109</sup> *Ibid.*, 13.

<sup>110</sup> *Ibid.*

<sup>111</sup> *Ibid.*

<sup>112</sup> *Ibid.*, 13, 14.

<sup>113</sup> *Ibid.*, 14.

<sup>114</sup> *Ibid.*

<sup>115</sup> *Ibid.*, 14, 15.

<sup>116</sup> *Ibid.*, 15.

<sup>117</sup> *Ibid.*

<sup>118</sup> *Ibid.*

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- <sup>119</sup> Ibid.
- <sup>120</sup> Ibid., 15-16.
- <sup>121</sup> Ibid., 16.
- <sup>122</sup> Ibid.
- <sup>123</sup> Ibid.
- <sup>124</sup> Ibid., 17.
- <sup>125</sup> Caplan.
- <sup>126</sup> Ibid., 184, 185.
- <sup>127</sup> Carol H. Weiss, "Knowledge Creep and Decision Accretion," *Knowledge: Creation, Diffusion, Utilization* 1, 3 (March 1980): 381-404.
- <sup>128</sup> Ibid., 381.
- <sup>129</sup> Ibid., 382.
- <sup>130</sup> Ibid., 382, 395-96.
- <sup>131</sup> Ibid., 397.
- <sup>132</sup> Ibid.
- <sup>133</sup> Ibid., 398.
- <sup>134</sup> Ibid.
- <sup>135</sup> Ibid., 399.
- <sup>136</sup> Ibid., 402.
- <sup>137</sup> Sheila Jasanoff, *Risk Management and Political Culture* (New York: Sage, 1986).
- <sup>138</sup> Ibid., vi.
- <sup>139</sup> Ibid., 7-8.
- <sup>140</sup> Ibid., 8.
- <sup>141</sup> Ibid., 79.
- <sup>142</sup> Ibid.
- <sup>143</sup> Ibid.
- <sup>144</sup> Ibid., 80.
- <sup>145</sup> Ibid.
- <sup>146</sup> Ibid.
- <sup>147</sup> Ibid.
- <sup>148</sup> Ibid.

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- <sup>149</sup> Ibid., 80, 81.
- <sup>150</sup> Ibid., 81.
- <sup>151</sup> Ibid.
- <sup>152</sup> Sheila Jasanoff, *The Fifth Branch: Science Advisors as Policy Makers* (Cambridge: Harvard University Press, 1990).
- <sup>153</sup> Ibid., vii.
- <sup>154</sup> Ibid.
- <sup>155</sup> Ibid., 2.
- <sup>156</sup> Ibid.
- <sup>157</sup> Ibid., 12.
- <sup>158</sup> Ibid.
- <sup>159</sup> Ibid., 13.
- <sup>160</sup> Ibid.
- <sup>161</sup> Ibid., 14.
- <sup>162</sup> Ibid. See also Thomas F. Gieryn, "Boundary-Work and the Demarcation of Science from Non-Science: Strains and Interests in Professional Ideologies of Scientists," *American Sociological Review* 48 (1983): 781-95.
- <sup>163</sup> Jasanoff, 14.
- <sup>164</sup> Ibid., 18.
- <sup>165</sup> Ibid.
- <sup>166</sup> Ibid.
- <sup>167</sup> Ibid., 18-19.
- <sup>168</sup> Ibid., 249, 250.
- <sup>169</sup> Ibid., 250.
- <sup>170</sup> Ibid.
- <sup>171</sup> Brian Wynne, "Uncertainty and Environmental Learning - Reconceiving Science and Policy in the Preventive Paradigm," *Global Environmental Change - Human and Policy Dimensions* 2, 2 (June 1992): 111-27.
- <sup>172</sup> Ibid., 112, 111.
- <sup>173</sup> Ibid., 113.
- <sup>174</sup> Ibid.
- <sup>175</sup> Ibid.
- <sup>176</sup> Ibid., 114.



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- <sup>177</sup> Ibid.
- <sup>178</sup> Ibid., 116. See also Silvio O. Funtowicz and Jerome R. Ravetz, *Uncertainty and Quality in Science for Policy* (Dordrecht: Kluwer Academic Publishers, 1990).
- <sup>179</sup> Wynne, 116.
- <sup>180</sup> Ibid., 116, 117.
- <sup>181</sup> Ibid., 119.
- <sup>182</sup> Ibid., 112, 123.
- <sup>183</sup> Ibid., 111, 127.
- <sup>184</sup> William Leiss, *In the Chamber of Risks* (Montreal: McGill-Queen's University Press, 2001).
- <sup>185</sup> Ibid..
- <sup>186</sup> Ibid., 288.
- <sup>187</sup> Ibid., 15.
- <sup>188</sup> Ibid., 10.
- <sup>189</sup> Ibid., 13.
- <sup>190</sup> Ibid., 14.
- <sup>191</sup> Ibid.
- <sup>192</sup> Ibid., 14-15.
- <sup>193</sup> Ibid., 15.
- <sup>194</sup> Ibid.
- <sup>195</sup> Ibid.
- <sup>196</sup> Ibid.
- <sup>197</sup> Ibid., 288-92, 293-99.
- <sup>198</sup> Ibid., 174.
- <sup>199</sup> Ibid.
- <sup>200</sup> Ibid.
- <sup>201</sup> Arie Rip, "Constructing Expertise: In a Third Wave of Science Studies?," *Social Studies of Science* 33, 3 (June 2003): 419-34. See also Harry M. Collins and Robert Evans, "The Third Wave of Science Studies: Studies of Expertise and Experience," *Social Studies of Science* 32, 2 (April 2002): 235-96.
- <sup>202</sup> Rip, 419.
- <sup>203</sup> Ibid., 420.
- <sup>204</sup> Ibid.
- <sup>205</sup> Ibid.

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- <sup>206</sup> Ibid.
- <sup>207</sup> Ibid., 421.
- <sup>208</sup> Ibid., 422.
- <sup>209</sup> Ibid., 422, 423.
- <sup>210</sup> Ibid., 424
- <sup>211</sup> Ibid.
- <sup>212</sup> Ibid., 425.
- <sup>213</sup> Ibid., 426.
- <sup>214</sup> Ibid., 428.
- <sup>215</sup> Ibid.
- <sup>216</sup> Ibid.
- <sup>217</sup> Steven Yearley, "Making Systematic Sense of Public Discontents with Expert Knowledge: Two Analytical Approaches and a Case Study," *Public Understanding of Science* 9, 2 (April 2000): 105-22.
- <sup>218</sup> Ibid., 105.
- <sup>219</sup> Ibid., 110.
- <sup>220</sup> Ibid.
- <sup>221</sup> Ibid., 111-12.
- <sup>222</sup> Ibid., 120.
- <sup>223</sup> Ibid.
- <sup>224</sup> Ibid.
- <sup>225</sup> Ibid.
- <sup>226</sup> Robert K. Yin, *Case Study Research: Design and Methods*, rev. ed., Applied Social Research Methods, vol. 5, (Newbury Park, California: Sage Publications, 1989), 13, 20.
- <sup>227</sup> Ibid., 21.
- <sup>228</sup> See chapters 2 through 9.
- <sup>229</sup> Typically the methods have two separate and sequential steps. The first involves ranking environmental problems according to their negative health, ecological, and socioeconomic effects; and the second involves ranking the problems according to their possible solutions, for example, control, assess, and research.
- <sup>230</sup> For example, the Environment Council of Alberta was conducting a similar project. In contrast, the United States Environmental Protection Agency had conducted similar projects at the federal, state, city, and tribe level.
- <sup>231</sup> See Christina Chociolko, "Environmental Priority Setting: A Tool for Public Policy Makers," prepared for the Ontario Ministry of Environment & Energy, Science & Technology Branch, William Leiss & Associates Ltd., Ontario, September 1994.

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<sup>232</sup> Around this time, I took a course on Comparative Risk and Public Policy sponsored by the United States Environmental Protection Agency.

<sup>233</sup> Around this time, I co-authored a paper with the Environment Canada Project coordinator on environmental priority setting.

<sup>234</sup> My direct evidence for the Environment Canada case included nearly 800 documents from the Project file, over 15 in-depth interviews, and various observations.

<sup>235</sup> Debora L. VanNijnatten and Robert Boardman, eds., *Canadian Environmental Policy: Context and Cases*, 2d ed. (Toronto: Oxford University Press, 2002), ix, by permission.

<sup>236</sup> *Ibid.*, ix-xiii, by permission.

<sup>237</sup> G. Bruce Doern, "Environment Canada as a Networked Institution," in *Canadian Environmental Policy*, VanNijnatten and Boardman, 110.

<sup>238</sup> *Ibid.*, 110-11.

<sup>239</sup> I use the term "science-based process" to refer to any process that includes a scientific ranking method.

<sup>240</sup> Argument: strongly emphasized and others disagreed.

<sup>241</sup> I standardized the presentation of evidence because the style of the documents was so varied.

**PART I**  
**THE PROMISE OF SCIENCE-BASED DECISION-MAKING FOR DETERMINING**  
**ENVIRONMENTAL PRIORITIES**

**CHAPTER 2**  
**APPROVAL OF THE ENVIRONMENT CANADA PROJECT**

In this chapter, I discuss the influence that government experts had in the process of establishing the Environment Canada Project (to develop and use a science-based process to determine Environment's priorities - the Environment Canada process) as a priority for Environment. The process began ostensibly in September 1992 and ended in November 1992 when the Conservation & Protection assistant deputy minister approved the Project.

During this two and a half month period, several other processes of determining environmental priorities occurred. The process of not establishing the Imperial Oil Project (to develop and use a science-based process to determine national pollution priorities - the Imperial Oil process) for Environment and Industry began, and the process of establishing the Canadian Petroleum Products Institute Project (to develop and use a science-based process to determine petroleum products industry pollution priorities - the Canadian Petroleum Products Institute process) for Environment and other federal departments (and others) began. I also discuss in this chapter the influence that government experts had in these processes.

I show that government experts seemed to have no influence on the decision made by the Conservation & Protection assistant deputy minister to establish the Environment Canada Project for Environment. I suggest that they had no influence (neither a minor nor major one) because either they were not asked for advice or did not offer it. I also suggest that their lack of influence did not make a significant difference to determining "good" environmental priorities because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities (and the administration and policy of it).

## Conservation & Protection Assistant Deputy Minister Approval of the Project

In this section, the process of determining the Environment Canada Project as a priority for Environment began and ended. Several other processes of determining environmental priorities intersected with this one, including those establishing the Imperial Oil, Hickling, and Canadian Petroleum Products Institute projects for the Advisory Committee on Environmental Protection, federal government, Environment, Industry, other federal departments, and two environmental groups. Indeed, this process collided with establishing the Imperial Oil Project.

Specifically, an Imperial Oil senior manager advised the Advisory Committee on Environmental Protection to establish the Imperial Oil Project. They and a federal government official questioned whether it should be. Hickling Corporation advised the Policy Advisory Committee to establish two Hickling projects (to develop and use science-based processes to determine Environment's priorities - the Hickling processes). The Environment/Corporate Policy assistant deputy minister advised the Environment deputy minister (and Conservation & Protection assistant deputy minister) to establish the Environment Canada Project, and argued against the Imperial Oil Project. The deputy minister also argued against it. And the Canadian Petroleum Products Institute advised the Petroleum Products Industry Task Force to establish the Canadian Petroleum Products Institute Project. The Memorandum of Understanding Steering Committee set up (via Conservation & Protection) the Interdepartmental Committee - including an Industry environmental analyst - to advise whether the Imperial Oil Project should be established. And the deputy minister asked the Conservation & Protection assistant deputy minister to decide whether the Environment Canada Project should be.

A Conservation & Protection/Ecosystem Sciences/Strategic Planning chief advised the Ecosystem Sciences director general that the Imperial Oil Project should not be established, and to advise Conservation & Protection and Corporate Policy the same. Then the Conservation & Protection assistant deputy minister established the Environment Canada Project for Environment.

During these processes of determining environmental priorities, two arguments emerged about whether a project itself should be a priority (as mentioned above), and who should be involved in deciding priorities more generally. The Corporate Policy assistant deputy minister argued to the deputy minister and Conservation & Protection assistant deputy minister that the Imperial Oil Project should not be established (vs the

Environment Canada Project, which should be) because the Advisory Committee on Environmental Protection should not decide Environment's priorities (vs Environment, who should). Then the deputy minister argued the same. These arguments were not resolved during this period, September 1992 to November 1992.

A chronology of key events (bolded in the Evidence below) is shown in Table 1.4. Table 1.5 lists key projects and their purposes. Key group participants are shown in Table 2.1. Figure 1.4 shows the federal government structure key to the Environment Canada Project in the Fall of 1992.

### Evidence

The Environment Canada Project was first proposed by Environment in mid-October 1992. However, its origins can be traced to the beginning of September 1992 when the first of three proposals from non-government groups for projects to develop and use science-based processes for determining environmental priorities was made.

*The Imperial Oil Project.* The first proposal was from an Imperial Oil senior manager. **The senior manager, an Advisory Committee on Environmental Protection member, drafted the proposal for the Imperial Oil Project (to develop and use a science-based process to determine national pollution priorities), as asked by the Committee's Focus Group on Priority Setting, in August.** The Advisory Committee, set up in February, included: the Conservation & Protection and Industry assistant deputy ministers (the Advisory Committee co-chairs and Memorandum of Understanding Steering Committee); and 24 senior representatives of 11 companies and industry associations (from the chemical; forest products; metals, mining, processing; oil and gas; and manufacturing sectors), four labour groups, four environmental groups, and five "institutions." Their purpose was to "provide support to the... Steering Committee by establishing a forum for consultation on Environment's regulatory and Green Plan issues that affect industry's ability to remain competitive in world markets." The Steering Committee's purpose was to "provide direction for the implementation of the [Memorandum] by facilitating cooperative working relationships that enhance the effectiveness of federal initiatives as [Conservation & Protection] and [Industry] work with industry to promote international competitiveness and a clean environment." The Group included the Imperial Oil, Canadian Labour Congress,

Rawson Academy of Aquatic Sciences, and Conference Board of Canada senior representatives. The Conference Board, a consulting company, was also the Advisory Committee Secretariat.

The senior manager's proposal, a 13-page action plan, was sent to the Advisory Committee before the meeting. A Conservation & Protection/Environmental Protection/Regulatory Affairs chief was asked for comments.

As summarized in Table 2.2 (see Appendix 2 for detailed information), the senior manager proposed the following (notes that were written on the proposal are in italics):

that [the Advisory Committee] sponsor and steer a project, to be resourced by the government of Canada, with the following objectives:

- establish national environmental priorities based on comparative risk *[no single process]*
- confirm national environmental goals and sequence response strategies based on pursuing opportunities for the greatest risk reduction within a cost profile the nation can afford *[against gov't. policy]*

This could be thought of as an extension to the Green Plan - "Part II: Setting Priorities for Environmental Protection".... *[What about Conservation?]*

Phase 1 - End '92?.... *[unrealistic... [Green Plan] has set priorities]*

Phase II - End '93?....

Environment... is the logical agency to take the lead role on this project and to provide the key resources.

**The Mulroney Conservatives established the Green Plan, a "national strategy for sustainable development," as a priority for the federal government in December 1990.** The five-year, \$3 billion Plan itself was a list of environmental issues (i.e., priorities), and the result of a formal process for deciding them (see Table 1.3). Environment was the lead department and, by April 1992, their main priority was implementing the Plan. About 40% of the \$3 billion was to be spent within Environment.

Regarding "why set environmental priorities," the senior manager wrote:

**Expectations**

- knowledge and awareness growing
- politics and emotion outpacing science
- public policy agenda getting longer

**Collision course?**

**Affordability**

- much "low-hanging" fruit already captured
- globalization of trade increasing competitive pressures
- prevention, control and remediation costs growing

Regarding project benefits, the senior manager wrote:

- greater credibility in the national environmental goal-setting process
- contributes to the federal government's regulatory reform initiative

- provides focus and coherence to the environmental agendas at all levels of government
- fosters greater certainty on what's really important and galvanizes action
- helps ensure limited resources are used wisely for the biggest benefit
- supports a more substantive debate in Canada on environment and economy issues

**The Mulroney Conservatives established the Regulatory Reform Strategy, "centred on rationalizing the central regulatory decision process," as a priority for the federal government in 1986.** The new Office of Privatization & Regulatory Affairs was the lead department.

And regarding the work plan, the senior manager wrote:

Phase 1... should be designed to establish a prioritized list of environmental threats based on informed consensus using risk assessment techniques, and to define the ground rules of Phase II in which the cost/benefits in reducing these risks are developed....

Risk assessment techniques have been successfully applied in other jurisdictions to help rank environmental threats and these can provide useful models for this work.... The US [Environmental Protection Agency] has carried out two major studies... to employ risk assessment techniques in setting environmental priorities....

These qualitative and quantitative risk assessment techniques can help to rank or cluster various environmental threats. An example of the results of such an approach... is a prioritized list of environmental threats for the state of Washington, as developed by a public advisory committee with the assistance of the... [Agency].... A similar approach could be applied in this study using Canada's Green Plan as a starting point, which provides a comprehensive listing (unranked) of environmental threats.

There are many examples of cost-effective policy planning in addressing environmental threats... for example, the [Canadian Council of Ministers of the Environment's] [Nitrogen Oxides/Volatile Organic Compounds] Management Plan.... Notwithstanding important issues related to the appropriateness of the goals and level of risk reduction achieved, the means that are defined to achieve these goals (primarily command and control regulations) and the sequencing specific initiatives, it is noteworthy that this plan was developed using a cost/benefit framework....

...The US National Academy of Sciences..., National Academy of Engineering... and Institute of Medicine... report... "Policy Implications of Greenhouse Warming".... is particularly instructive since a framework is described to compare response options in order to define a least-cost path. This could be a useful model in this [Advisory Committee] project.

(The appendices of the proposal included 42 pages of excerpts from the Environmental Protection Agency, Washington State, Canadian Council of Ministers of the Environment, and National Academy of Sciences, National Academy of Engineering and Institute of Medicine reports.)



**In early September, at the third meeting of the Advisory Committee, the senior manager presented his proposal for the Imperial Oil Project, and advised the Committee to establish it as a priority. The Committee discussed the proposal and, as shown below by excerpts from the meeting minutes, they and a federal government official questioned whether it should be.**

[The senior manager] proposed that this work be taken on by [the Committee] with support being provided by the federal government - [Industry] and Environment... The question before us is how do we engage [the Committee] in this work - do we want to take it on?

....A project like this is ambitious - especially to get it done by the end of the year. Values will be hard to deal with. If the group went through the priority-setting process then you could get an informed consent.

Risk assessment as an approach will give problems. Reservations were expressed about our reliance upon mathematical risk assessment, also, health now counts heavily and that hasn't been added to risk analysis. If you start costing, you will find you lack indicators. There is still a lot of work being done on indicators. These are indicators of damage, not indicators of risk. Indicators of risk are still in their infancy....

Science and economics can help make better choices but they are not the whole picture. They are not a substitute for a consensus process but rather to have some analytical input into it. Canada is a leader in consensus building and in risk analysis using the Health... approach. We will need to emphasize the non-scientific side from the outset. Elements of this include tools of risk communication, social values, which are not scientific. Unless you bring in everybody early on you are asking for trouble later on....

In the US, priority setting has been wrestled with for many years and it is only in the last two that there has been some success in defining themes - not priorities. [The Environmental Protection Agency] says it is critical to identify priorities but it is very political and they have not yet figured out how to deal with public perceptions. The [Agency] is beginning to address the criteria by which priorities may be set, including the political ones. In 1980, the [Agency] had its first conference on comparative risk and scientific indicators.

It is more difficult to reach consensus on process and criteria.

- Is [the Committee] the body to address the process question? Members... felt they didn't have the mandate from the environmental community and business to get involved in designing the process.
- Should the process be outside of [the Committee]?

A federal official felt that in discussion so far he had missed the issue of accountability. There is priority setting in government. It took ministers years to rank priorities and allocate funds in the Green Plan....

....The accountability issue is not resolved and the challenge is given to the federal government.

Industry and Environment offered to review the proposal from the federal perspective and report back by mid-December.

As shown above, some Committee members questioned whether risk assessors should help decide national pollution priorities, and whether benefit-cost analysts could help.

Other items on the Committee agenda included A Strategic Framework for the Pollution Prevention Strategy and Harmonization. Environment and Industry established the National Pollution Prevention Strategic Framework project, "developing a strategic framework which provides a national context and leadership to encourage collaborative approaches to the problem of pollution prevention," as a priority for themselves by now. Environment was the lead department.

And the Canadian Council of Ministers of the Environment established the Harmonization project, "development and implementation of a comprehensive program to harmonize environmental laws across the country," as a priority for the federal and provincial governments by now. Environment was the lead department for the federal government.<sup>1</sup>

*The Hickling projects.* The second proposal for projects to develop and use science-based processes for determining environmental priorities was from Hickling, a major consulting company. **In mid-October, at a Policy Advisory Committee meeting which the Environment deputy minister also attended, Hickling advised the Committee to establish two Hickling projects (to develop and use science-based processes to determine Environment's priorities) as priorities.** The Committee included the Corporate Policy assistant deputy minister (the chair), and Environment policy director generals and directors. They were a subcommittee of the Environment/Top of the House Committee (another name for the Environment management board), including the Environment deputy minister, assistant deputy ministers, and regional director generals.

As summarized in Table 2.2, Hickling proposed two projects they wanted to conduct for Environment. The first was to "establish priorities for the regulation of toxic substances using a risk-based benefit/cost analysis approach" and the second was to "develop a strategic plan for integrating risk-based benefit/cost analysis into [Environment's] planning, decision-making and budgeting apparatus."<sup>2</sup>

*The Environment Canada Project.* Environment began reviewing the Imperial Oil senior manager's and Hickling's proposals. **The Corporate Policy assistant deputy**

minister sent the senior manager's proposal to the Environment deputy minister with a copy to the Conservation & Protection assistant deputy minister and, as shown below, advised him to establish as a priority the Environment Canada Project (to develop and use a science-based process to determine Environment's priorities). Also shown, the Corporate Policy assistant deputy minister argued that the Imperial Oil Project should not be established because the Advisory Committee on Environmental Protection should not decide Environment's priorities (vs Environment, who should). Then the deputy minister argued the same. His comments, written on a Corporate Policy assistant deputy minister's memo, are in italics.

The Corporate Policy assistant deputy minister wrote the deputy minister, and the deputy minister commented:

I found the attached [Imperial Oil proposal on risk assessment] quite interesting, particularly in light of the recent presentation to [the Policy Advisory Committee] by Hickling. The central message of this piece seems to be that:

- Environmental regulations are imposing an increasing cost on the economy; *[How? Is this true? Evidence?]*
- There is no real *[?]* evidence that many of these costs produce corresponding benefits; *[Are we regulating the right things?? Is the problem the regulations themselves rather than the intent. Are the regulations addressing the problem at the wrong point.]*
- This lack of evidence is due to the absence of systematic evaluation of costs, risks and benefits by the government of Canada in general and by Environment... in particular; *[Do we always need to have irrefutable evidence? What does the citizen want.]*
- It's time to remedy this by engaging a consultant to do the job. The consultant would be paid for by the government of Canada...

I have a lot of sympathy with [Imperial Oil's] analytical approach. ...The Department must develop a credible capability for assessing the costs, risks and benefits of alternatives. This will not answer all the... questions we face, but I see a lot of benefits of developing our capabilities in this area. Not the least... is the opportunity for scientists and economists to work together in establishing priorities.

....I think it preferable to have this developed in house, perhaps supplemented by technical consulting assistance. We need our own capability to develop, understand and defend our own priorities. *[agree!]* We would be in a poor position if [the Advisory Committee on Environmental Protection] were given the task of directing us on how to use our own resources to do our own job.

...I believe the points [Imperial Oil] raises are valid, but I have concerns about the approach. Fundamentally, however, we need to get moving in this area ourselves.

As shown above, the Corporate Policy assistant deputy minister questioned whether consulting company experts should help decide Environment's priorities. Also

shown, the deputy minister questioned if citizens (vs risk assessment and benefit-cost analysts) should help decide federal environmental regulatory priorities.

The memo was sent to Conservation & Protection/Environmental Protection.<sup>3</sup>

*The Canadian Petroleum Products Institute Project.* The third proposal for a project to develop and use a science-based process for determining environmental priorities was from the Canadian Petroleum Products Institute, an industry association including 15 companies that refine and market petroleum products. Two of the companies, Imperial Oil and Shell Canada, were also Advisory Committee on Environmental Protection members. The Institute's mission was to "proactively serve and represent the refining and marketing sectors of the petroleum industry on environmental, health, safety and business issues affecting the industry and Canadian society."

**By now, the Institute drafted the Canadian Petroleum Products Institute process, "an internal model... for prioritizing environmental issues to help guide the development of the Institute's annual workplan."**

The goal of the... model was to establish an objective method of analyzing and prioritizing issues to determine how to effectively allocate limited human and financial resources. It was developed to help translate a range of perceptions about an environmental issue into numeric values. It also provided a promising approach for establishing some general environmental priorities for the industry.

The "issues" were pollutants, mostly air.

"The approach is a three step priority-setting process based on 'best available judgement' using the Kepner-Tregoe technique (weighted ranking system) and the principle of cost-effectiveness." The steps included:

- Scan Canada's identified current or emerging problem areas in which the petroleum [sic] has a role to play and prioritize [sic] these topics from the overall Canadian perspective.
- Identify potential solutions which the petroleum downstream industry might contribute in response to the... Canadian problems and prioritize [sic] those... from the industry's perspective.
- Broaden the review of... solutions to include those of all... relevant stakeholders and
  - prioritize [sic] this larger collection... from the perspective of the cost to Canadians based on cost-effectiveness toward meeting the stated goals,
  - develop a strategy which includes a phased implementation of the initiatives, beginning with the most cost-effective solutions.

The [Canadian Petroleum Products Institute] Issue Analysis is divided into five categories, in descending order of importance:

- health (What are the human health impacts/risks?)
- environment (What are the impacts on the ecosystem?)
- impacts (What are the socio-economic impacts?)
- contribution (What is Canada's contribution to the issue?)
- costs (What is the estimated cost for controlling/eliminating the issue?)

The original process is shown in Appendix 2.

**The Institute advised the Petroleum Products Industry Task Force to establish the Canadian Petroleum Products Institute Project as a priority (to develop and use a science-based process to determine petroleum products industry environmental priorities).** The Task Force, set up in September 1992, was to include nine petroleum products industry senior representatives (including the Institute, Imperial Oil, and Shell); nine Environment (Conservation & Protection and Corporate Policy) and other federal department (Energy, Finance, Industry, and Transport) assistant deputy ministers, director generals, and directors; and two environmental group senior representatives (Pembina Institute for Appropriate Development and Society to Overcome Pollution). The Energy assistant deputy minister and a Canadian Ultramar senior manager were the co-chairs. The Conservation & Protection and Industry assistant deputy ministers were also Advisory Committee on Environmental Protection members. The Corporate Policy assistant deputy minister was also a Policy Advisory Committee member. The Task Force's purpose was to "help [the Institute] establish a plan to enhance the long-term environmental sustainability and international competitiveness of the petroleum products industry."

As summarized in Table 2.2, the Institute proposed a project to "prioritize current or emerging environmental issues in which the petroleum downstream industry has, or is perceived to have, a role to play." The Institute "volunteered to have its model reviewed by a multi-stakeholder Working Group to test its validity and to report back to the Task Force."<sup>4</sup>

*The Imperial Oil Project.* Environment and other federal departments began reviewing the Imperial Oil senior manager's proposal. **Conservation & Protection took the lead for the Memorandum of Understanding Steering Committee and set up the Interdepartmental Committee to review the proposal, and advise whether the Imperial Oil Project should be established as a priority, as shown below.**

The Interdepartmental Committee included the Conservation & Protection/Environmental Protection/Regulatory Affairs chief, an Industry executive, Industry environmental analyst, and Health/Health Protection director. The Regulatory Affairs director was the lead for Environment. The executive and Health Protection director were on exchange from the Canadian Petroleum Products Institute and Shell, respectively. The Interdepartmental Committee were "mandated to administer and coordinate a federal response to [the Advisory Committee on Environmental Protection]."

**The Interdepartmental Committee contracted CanTox Incorporated to review "alternate priority setting methodologies" under study or in use in Canada or the United States.** CanTox is a consulting company "in toxicology, health and environmental sciences," including "expertise in risk assessment, environmental impact analysis, environmental exposures and risk assessment modelling, regulatory issues, remediation assessment."<sup>5</sup>

*The Environment Canada Project.* In early November, a meeting was called between Conservation & Protection and Corporate Policy to discuss the direction that Conservation & Protection intended to take on "priority setting." **By now, the Environment deputy minister asked the Conservation & Protection assistant deputy minister to decide whether the Environment Canada Project should be established as a priority, as shown below by an excerpt from an assistant deputy minister's memo to the deputy minister.**

"The purpose of the meeting was... to address the challenge you gave to [Conservation & Protection] to use and communicate a rational\scientific approach to priority setting."

**Before the meeting, a Conservation & Protection/Ecosystem Sciences/Strategic Planning chief sent the Imperial Oil senior manager's proposal to the Ecosystem Sciences director general and, as shown below, advised him that the Imperial Oil Project should not be established as a priority, and to advise Conservation & Protection and Corporate Policy the same.**

The chief wrote the director general:

The... [Imperial Oil] proposal... suggests that [Environment] engage a consultant to do risk assessment. You may wish to bring the group up to date with some of the activities the [Ecosystem Sciences] management team has undertaken since the Socio-Economic Workshop...

- [Ecosystem Sciences] is already in a state of priority setting from an environmental/economic perspective (see list provided to [the Ecosystem Sciences/Conservation director]);
- [Conservation] will work closely with [Strategic Planning] in the formulation of business plans and horizontal teams to identify which initiatives should receive priority...;
- [Conservation & Protection/Policy] and [Strategic Planning] have had some discussions to focus objectives and discuss strategic direction;
- Positive feedback has been received from the Branch workshops held to date and the preparation of business plans and horizontal team formation is progressing.

(The Ecosystem Sciences management team is another name for the Ecosystem Sciences management board.)

Ecosystem Sciences, formerly Conservation & Protection/Inland Waters, was launched at the beginning of April 1992 as the first step in a transition process within Conservation & Protection water programs. By then, Conservation & Protection established the Transition Project, to "ensure resources are effectively aligned to deliver Green Plan priorities" and "set the stage for a more integrated ecosystems approach to the way [Conservation & Protection] does business... in response to the Green Plan," as a priority for themselves. Unlike other Environment directorates, Ecosystem Sciences included both natural scientists and economists.

As shown above, the chief questioned if consulting company (vs Environment) experts alone should decide Environment's priorities.

Environment decided to conduct their own project. **At the Conservation & Protection and Corporate Policy meeting, the Conservation & Protection assistant deputy minister established the Environment Canada Project as a priority for Environment, and especially for Conservation & Protection, as shown below by excerpts from the assistant deputy minister's memo.**

Conservation & Protection and Corporate Policy met to:

- ...address the challenge [the Environment deputy minister] gave to [Conservation & Protection] to use and communicate a rational/scientific approach to priority setting;
- ...review the... proposals ([Advisory Committee on Environmental Protection], Hickling, [Canadian Petroleum Products Institute]) on the table relating to priority setting, risk assessment and other methodologies and to determine how best to respond...; and
- ...determine how [Conservation & Protection] can better position itself to respond to immediate industry concerns, especially on the regulatory front.

The Ecosystem Sciences director general, Conservation director, Conservation/Environmental Economics head, Conservation & Protection/Environmental Protection director general, Policy director general, and a Corporate Policy director general attended the meeting.

The outcome was:

- A team... led by Ecosystem Sciences... will be formed which will integrate the broad strategic framework for priority setting within [Conservation & Protection] along with the immediate priorities on the regulatory side.
- This team will assist in advancing the [Environmental Protection] work already initiated on the [Institute] & [Advisory Committee] proposals and will review and respond accordingly.
- [Corporate Policy] shall participate on the team and will play a macro-planning and scanning role and on the longer-term will integrate this [Conservation & Protection] work into a broader departmental priority-setting approach.
- A business plan will be developed by the team and presented to the Policy Advisory Committee and Top of the House in early 1993.

In other words, the assistant deputy minister (and Corporate Policy assistant deputy minister) approved the Environment Canada Project.<sup>6</sup>

### Discussion

In this dissertation, I ask three major questions: What influence, if any, do government experts have in determining environmental priorities? Why do they have this influence? Does their influence make a significant difference to determining "good" environmental priorities? I begin discussing the answers to these questions that I found in my cases below.

#### The Environment Canada Project

*Establishing it for Environment.* During the process of establishing the Environment Canada Project as a priority for Environment, the Conservation & Protection assistant deputy minister - the final decision-maker for this Project - decided to allocate time and staff to it. Government experts did not offer advice, so they seemed to have no influence on the decision.

In this process, government experts were not asked for advice, and did not offer it. So perhaps they had no influence on the decision because *either they were not*



*asked or did not offer.* But why were they not asked, and why did they not offer? In the process that was to be developed and used in this Project - the Environment Canada process - Environment "scientists and economists" were to be asked by Environment.

Like government experts, the assistant deputy minister was a public servant, but unlike them, he was a manager (Environment senior), not an expert, although he had expertise in engineering. So perhaps the lack of influence by government experts on the decision did not make a significant difference because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities. Also, the other participants - including another Environment senior manager with expertise in economics - did not question if this Project should be established, with the minor exception of the Environment deputy minister who asked the assistant deputy minister to decide whether it should be. In particular, the Corporate Policy assistant deputy minister advised the deputy minister and Conservation & Protection assistant deputy minister to establish it, and argued against establishing the Imperial Oil Project. But what did government experts know?

I finish discussing the answers to these questions in Chapter 10. Meanwhile, it is important to note that some participants in the Environment Canada and other projects questioned if experts from certain organizations or in certain disciplines should or could be involved in determining environmental priorities, and how they should be involved. First, some Advisory Committee on Environmental Protection members questioned whether risk assessors should help decide national pollution priorities, and whether benefit-cost analysts could help. Second, the Corporate Policy assistant deputy minister questioned the Environment deputy minister and Conservation & Protection assistant deputy minister whether consulting company experts should help decide Environment's priorities. Third, the deputy minister questioned if citizens (vs risk assessment and benefit-cost analysts) should help decide federal environmental regulatory priorities. Finally, the Conservation & Protection/Ecosystem Sciences/Strategic Planning chief questioned the Ecosystem Sciences director general if consulting company (vs Environment) experts alone should decide Environment's priorities.

Generally, however, the participants all seemed to agree that at least some experts (Environment experts, not risk assessors) knew best about the science of determining priorities. Experts were assumed to carry the day.

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## NOTES

<sup>1</sup> The above section is based on: first Imperial Oil senior manager, "Setting Priorities for Environmental Protection: An Action Plan," Advisory Committee on Environmental Protection, August 1992; Advisory Committee on Environmental Protection, minutes of third meeting of September 9-10, 1992, 1, 8-9; *ibid.*, agenda of fourth meeting of February 3-4, 1992; Environment Canada, Corporate Policy Group, *Environmental Consultations Calendar*, October 1992, 23, 33; Advisory Committee on Environmental Protection, terms of reference, November 18, 1992, 1, 4; Advisory Committee on Environmental Protection, list of members, November 1992; Industry assistant deputy minister to Conservation & Protection assistant deputy minister, letter of December 18, 1992, "ACEP Proposal on Priority Setting"; first Imperial Oil senior manager, overheads for third Advisory Committee on Environmental Protection meeting of September 9-10, 1992, "Setting Priorities for Environmental Protection: An Action Plan"; Canada, *1992-93 Estimates, Part III: Environment Canada* (Ottawa: Supply & Services Canada, 1992); G. Bruce Doern and Thomas Conway, *The Greening of Canada: Federal Institutions and Decisions* (Toronto: University of Toronto Press, 1994), 51; Canada, *Canada's Green Plan* (Ottawa: Minister of Supply & Services, 1990); G. Bruce Doern and Richard W. Phidd, *Canadian Public Policy: Ideas, Structure, Process*, 2d ed. (Scarborough, Ontario: Nelson Canada, 1992), 104, 202; Conservation & Protection/Environmental Protection/Regulatory Affairs economist, briefing note of November 27, 1992, "Federal response to ACEP re: [Imperial Oil senior manager's] 'Setting Priorities for Environmental Protection: An Action Plan'"; Marcia Valiante, "Legal Foundations of Canadian Environmental Policy: Underlying Our Values in a Shifting Landscape," 8, in Debora L. VanNijnatten and Robert Boardman, ed., *Canadian Environmental Policy: Context and Cases*, 2d ed. (Don Mills: Oxford University Press, 2002).

See also US Environmental Protection Agency, Science Advisory Board, *Reducing Risk: Setting Priorities and Strategies for Environmental Protection* (Washington, DC: Environmental Protection Agency, September 1990); US Environmental Protection Agency, Office of Policy, Planning, & Evaluation and Office of Policy Analysis, *Unfinished Business: A Comparative Assessment of Environmental Problems* (Washington, DC: Environmental Protection Agency, February 1987); State of Washington, *The State of the Environment Report: Environment 2010* (Olympia: State of Washington, November 1989); Canadian Council of Ministers of the Environment, "Management Plan for Nitrogen Oxides (NOx) and Volatile Organic Compounds (VOCs): Phase 1," November 1990; and US National Academy of Sciences, National Academy of Engineering, and Institute of Medicine, *Policy Implications of Greenhouse Warming* (Washington, DC: National Academy Press, 1991).

<sup>2</sup> Corporate Policy assistant deputy minister to Environment deputy minister, memo of October 13, 1992, "IOL proposal on Risk Assessment," copied to Conservation & Protection assistant deputy minister and Corporate Policy director general; Conservation & Protection/Environmental Protection/Regulatory Affairs economist, Attachment 1, "Proposals for Prioritizing Environmental Protection Initiatives"; Environmental Protection/Response Assessment senior advisor, interview, June 25, 1995.

<sup>3</sup> Corporate Policy assistant deputy minister to Environment deputy minister.

<sup>4</sup> Environmental Priorities Working Group, "Environmental Priority Setting Methodology," August 1993, 3, Appendix 1; Canadian Petroleum Products Institute, Annual Report, 1997; Conservation & Protection/Ecosystem Sciences director general to Conservation & Protection assistant deputy minister, memo of November 25, 1992, "Priority Setting and Risk Assessment"; Environmental Protection/Response Assessment senior advisor; Conservation & Protection/Environmental Protection/Regulatory Affairs economist, Attachment 1; first Canadian Petroleum Products Institute senior director to Petroleum Products Industry Task Force, memo of June 16, 1993, "Report of the Petroleum Products Industry Task Force"; Natural Resources/Energy assistant deputy minister and first Ultramar senior manager to Industry minister, letter, "Report of the Petroleum Products Industry Task Force," 2; Petroleum Products Industry Task Force, "Report of the Petroleum Products Industry Task Force," Draft #1, June 14, 1993, 1; Environmental Priorities Working Group, "Report," Draft #1, May 12, 1993, 1.

<sup>5</sup> Conservation & Protection/Environmental Protection/Regulatory Affairs economist, briefing note of November 27, 1992; Industry assistant deputy minister to Conservation & Protection assistant deputy minister; Conservation & Protection/Ecosystem Sciences director general to Conservation & Protection assistant deputy minister; Environmental Protection/Response Assessment senior advisor; Industry assistant deputy minister to Conservation & Protection assistant deputy minister; CanTox program manager, overheads for National Priority Setting Workshop of July 26-28, 1993, "Environmental Priority Workshop..."

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<sup>6</sup> Conservation & Protection assistant deputy minister to Environment deputy minister, memo of November 20, 1992, "Approach to Priority-Setting," copied to Corporate Policy assistant deputy minister; Conservation & Protection/Ecosystem Sciences/Strategic Planning chief to Ecosystem Sciences director general, memo of November 5, 1992, "Meeting Friday a.m. with C&P Policy: EP IOL proposal on Risk Assessment"; "Managing Environmental Issues From an Ecosystems Perspective: ESED - A Case Study," 1, 2, in Background Papers for Workshop on Managing Environmental Issues from an Ecosystem Perspective held on August 25-26, 1992 in Cornwall, ON; Environmental Protection/Response Assessment senior advisor; Conservation & Protection/Ecosystem Sciences director general to Environment director generals at November 6, 1992 meeting, memo of December 4, 1992, "Environment Canada Framework for Priority Setting"; Conservation & Protection/Ecosystem Sciences/Conservation/Environmental Economics head to Environment Canada Project manager, memo of November 6, 1992, "Comments on priority setting meeting of 6 November, 1992," copied to Environment Canada Project coordinator; Conservation & Protection/Policy director general to Conservation & Protection/Ecosystem Sciences director general and Conservation & Protection/Environmental Protection director general, memo of November 10, 1992, "Tel que convenu..."

### CHAPTER 3

#### FORMULATION OF THE ENVIRONMENT CANADA PROJECT PLAN

In this chapter, I discuss the influence that government experts had in the *first* and *second* processes of re-establishing the Environment Canada Project as a priority for Environment. The first process began and ended in November 1992 when the Environment deputy minister approved the Project. And the second process began in November 1992 and ended in December 1992 when the Conservation & Protection assistant deputy minister approved Phase 1 of the Project plan (to develop the Environment Canada process).

During this one and a half month period, several other processes of determining environmental priorities occurred. The process of establishing the Canadian Petroleum Products Institute Project for Environment and other federal departments (and others) ended, the process of not establishing the Imperial Oil Project for Environment and Industry continued, the process of re-establishing the Canadian Petroleum Products Institute Project for Environment and other federal departments (and others) began, and the process of not establishing the Interdepartmental Committee Project (to develop and use a science-based process to determine Canadian environmental priorities - the Interdepartmental Committee process) for Environment and Industry began. I also discuss in this chapter the influence that government experts had in these processes.

I show that government experts seemed to have no influence on the decision made by the Environment deputy minister to re-establish the Environment Canada Project for Environment. I suggest that they had no influence because either they were not asked for advice or did not offer it. I also suggest that their lack of influence did not make a significant difference to determining "good" environmental priorities because the deputy minister knew as much as (or more than) they did about the science of deciding priorities (and the administration and policy of it).

Secondly, I show that one Energy economist and one Industry engineer seemed to have a major (deciding) influence on the decision by the Petroleum Products Industry Task Force to establish the Canadian Petroleum Products Institute Project for Environment and other federal departments. And one Conservation & Protection/Environmental Protection/Regulatory Affairs economist seemed to have no influence. I suggest that the Energy economist, and engineer had a major influence because they were asked for advice and offered it. And the Regulatory Affairs

economist had no influence because although she was asked, she did not offer. I also suggest that her lack of influence did not make a significant difference because the Task Force knew as much as (or more than) she did about the science of deciding priorities. And the major influence by the Energy economist, and engineer did not make a significant difference because the Task Force knew as much as they did about the science.

Finally, I show that government experts seemed to have no influence on the decision made by the Conservation & Protection assistant deputy minister to re-establish the Environment Canada Project for Environment. I suggest that they had no influence because either they were not asked for advice or did not offer it. I also suggest that their lack of influence did not make a significant difference because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities.

#### Conservation & Protection Assistant Deputy Minister Approval of the Plan (Phase 1)

In this section, the first and second processes of re-establishing the Environment Canada Project as a priority for Environment began and ended. Several other processes of determining environmental priorities intersected with this one, including those establishing, re-establishing, and ending the Canadian Petroleum Products Institute, Imperial Oil, Interdepartmental Committee, Hickling, Priority Substances List 2, Corporate Policy, and Conservation & Protection Fiscal Restraint projects for Environment, Industry, other federal departments, the Canadian Petroleum Products Institute, and two environmental groups. Indeed, establishing and re-establishing the Canadian Petroleum Products Institute Project, and establishing the Imperial Oil Project collided with this process. And establishing the Interdepartmental Committee Project collided with establishing the Imperial Oil Project.

Specifically, the Petroleum Products Industry Task Force set up the Risk Assessment & Work Prioritization Working Group - including an Energy senior economist and Industry engineer - to advise whether the Canadian Petroleum Products Institute Project should be established. Conservation & Protection set up the Priority Setting-Risk Assessment Committee - including a Conservation & Protection/Environmental Protection/Regulatory Affairs economist - to advise whether Environment should establish the Canadian Petroleum Products Institute and Imperial

Oil projects. And the Conservation & Protection assistant deputy minister updated the Environment deputy minister on his decision to establish the Environment Canada Project.

CanTox advised the Interdepartmental Committee - including the Industry economist - that the Interdepartmental Committee Project should be established. The Interdepartmental and Priority Setting-Risk Assessment committees advised the Memorandum of Understanding Steering Committee to establish it, but not the Imperial Oil Project. The Environment Canada Project coordinator advised that the Interdepartmental Committee Project should be established (equal to re-establishing the Environment Canada Project), but the Imperial Oil and Canadian Petroleum Products Institute projects should not be. The Conservation & Protection/Ecosystem Sciences director general advised the Conservation & Protection assistant deputy minister to re-establish the Environment Canada Project (equal to establishing the Interdepartmental Committee Project), and argued against the Canadian Petroleum Products Institute and Imperial Oil projects. Then the Environment deputy minister re-established the Environment Canada Project for Environment.

Ecosystem Sciences/Conservation advised the Ecosystem Sciences management board to re-establish the Environment Canada Project. The Risk Assessment & Work Prioritization Working Group advised the Task Force to establish the Canadian Petroleum Products Institute Project. The Conservation & Protection assistant deputy minister asked the Ecosystem Sciences and Environmental Protection director generals to advise whether the Environment Canada Project should be re-established (equal to establishing the Interdepartmental Committee Project); the Imperial Oil, Canadian Petroleum Products Institute, and two Hickling projects not established; and the Priority Substances List 2 Project (to develop and use a science-based process to determine federal government pollution priorities) ended. Then the assistant deputy minister established the Conservation & Protection Fiscal Restraint project (to develop a process to determine Conservation & Protection's program priorities - the Conservation & Protection Fiscal Restraint process) for Environment.

The Environment Canada Project manager advised the Ecosystem Sciences director general to advise other Environment director generals to re-establish the Environment Canada Project and other federal department director generals to establish it, and for this group to advise Environment whether it should be re-established (use the Environment Canada process). The director general advised them. Then the Task

Force established the Canadian Petroleum Products Institute Project for Environment, other federal departments, the Institute, and two environmental groups; and set up the Environmental Priorities Working Group - including the senior economist and a Health/Health Protection biostatistician - to advise whether it should be re-established (use the Canadian Petroleum Products Institute process). And the Corporate Policy assistant deputy minister did not establish the Hickling projects, but did establish the Corporate Policy Project (to develop and use a science-based process to determine Environment's policy priorities - the Hickling process) for Environment.

Ecosystem Sciences advised the Environmental Protection director general, Corporate Policy director general, and a Conservation & Protection/Policy director to re-establish the Environment Canada Project and to advise other federal departments to establish it. The Industry assistant deputy minister advised the Conservation & Protection assistant deputy minister to establish the Interdepartmental Committee Project. The manager, Regulatory Affairs director, Environmental Protection/Industrial Programs chief, and Policy director advised the Ecosystem Sciences, Environmental Protection, and Policy director generals to argue to the Conservation & Protection assistant deputy minister to re-establish the Environment Canada Project, end the Canadian Petroleum Products Institute Project, and not establish the Imperial Oil Project; and questioned whether the Corporate Policy Project should be re-established. The director generals argued the same to the Conservation & Protection assistant deputy minister (via the Ecosystem Sciences director general), and questioned the same. Then the assistant deputy minister re-established the Environment Canada Project for Environment.

During these processes of determining environmental priorities, several arguments emerged and continued about whether projects themselves should be priorities, who should be involved in deciding priorities more generally, and the scope of various processes for determining them. First, the Conservation/Environmental Economics head argued to the manager that the Environment Canada process should determine more than regulatory priorities. Second, the Interdepartmental and Priority Setting-Risk Assessment committees argued that more than two years should be allocated to determine national pollution priorities, and neither industry nor an advisory group should decide Canadian environmental priorities (vs the federal government, who should). Third, the Interdepartmental Committee argued to the Steering Committee that benefit-cost analysts should not decide them (vs other experts, who should). Fourth, the

Ecosystem Sciences director general argued to the Conservation & Protection assistant deputy minister that the Canadian Petroleum Products Institute and Imperial Oil projects should not be established (vs the Environment Canada Project, which should be re-established) because the Institute and Advisory Committee on Environmental Protection should not decide Environment's priorities (vs Environment, who should). Fifth, the Environmental Protection director general, Corporate Policy director general, and Policy director argued to Ecosystem Sciences that other federal departments - including their experts - should not help decide them (vs Environment, who should). Then Ecosystem Sciences argued to the Environmental Protection director general, Corporate Policy director general, and Policy director that the departments should help. Finally, the manager, Regulatory Affairs director, chief, and Policy director argued to the Ecosystem Sciences, Environmental Protection, and Policy director generals that the Environment Canada Project should be re-established, the Canadian Petroleum Products Institute Project ended, *and* the Imperial Oil Project not established because one (the Environment Canada) process (vs three processes) should determine Environment's priorities. Then the director generals argued the same to the Conservation & Protection assistant deputy minister.

At this point, Conservation resolved the arguments about the Environment Canada process determining more than regulatory priorities, and the Institute and Advisory Committee not deciding Environment's priorities. They recommended the process determine more than regulatory priorities, and the Institute and Committee help decide Environment's priorities in the process. The Task Force resolved the argument about not establishing the Canadian Petroleum Products Institute Project. They established it for Environment, other federal departments, the Institute, and two environmental groups. And the Ecosystem Sciences director general, Environmental Protection director general, Corporate Policy director general, and Policy director resolved the argument about other federal departments not helping decide Environment's priorities. They decided that the Conservation & Protection assistant deputy minister should determine this. The other arguments were not resolved during this period, November 1992 to December 1992.



## Evidence

In early November 1992, the Environment Canada Project began as Conservation & Protection started to formulate the Project plan, led by Conservation & Protection/Ecosystem Sciences. The Ecosystem Sciences/Conservation director was now the Environment Canada Project manager. (He led a Health/Health Protection project to develop and use a science-based process to determine Health Protection's non-ionizing radiation emitting device management priorities in 1991.)

**The Conservation/Environmental Economics head argued to the manager that the Environment Canada process should determine more than regulatory priorities, as shown below.**

The head did not intervene in the Conservation & Protection and Corporate Policy meeting held earlier that day because his comments may have been seen as "technical in nature." He wrote the manager (and copied the Conservation/Ecosystem Risk Analysis head) because he thought he might find the comments useful:

The task is to design a method... for setting priorities for industries and substances to be regulated under [Environment's] regulatory mandate. The issue revolves... now around the excessively complicated (and messy) issues of where to regulate, how priorities are determined, industrial negotiations, etc... ...We may have put "the cart before the horse", being trapped by our traditionally regulatory approach... Before we go... much further, we ought to stand back and consider other alternatives. This observation follows from the [Environment deputy minister's] and [Corporate Policy assistant deputy minister's] messages at the recent socio-economic workshop, namely that regulation is not working, probably will not ever work, and is unacceptable as a sole strategy for environmental control.

There is a perception that toxic materials should be banned or regulated... Yet, some European countries incorporate toxic materials into their... effluent discharge fees. Further, the real opportunity here may rest in prevention... with interventions in a substance's life cycle. ...Let's not get too focused on regulation.

The type of process the Environmental Economics head had in mind was:

- Environmental scans, using science results, socio-economic analyses, and other media, would identify potentially harmful materials....
  - Risk analyses would then be used to determine the magnitude of the socio-economic and environmental risk posed by the identified substances. (...science + economic inputs here...)
  - Design of suitable intervention means would follow, using (in order of priority): economic measures...; education; regulation; and, as a last alternative, prohibition....
- ...This type of procedure would:
- free [Environment] of intervention obligations in industry.

- concentrate on the harmful substances..., leaving... industry to adjust via "the invisible hand."
- be more efficient economically.
- lead to beneficial technological change.
- result in quicker results
- shift the focus to preventative action.<sup>1</sup>

The Conservation & Protection/Policy director general and director drafted the memo from the Conservation & Protection assistant deputy minister to the Environment deputy minister about the Conservation & Protection and Corporate Policy meeting, and sent it to the Ecosystem Sciences director general and Conservation & Protection/Environmental Protection director general for comments. In mid-November, the Ecosystem Sciences director general approved the draft memo, and the Policy director general was informed.<sup>2</sup>

*The Canadian Petroleum Products Institute Project.* Environment and other federal departments began reviewing the Canadian Petroleum Products Institute's proposal. **By now, the Petroleum Products Industry Task Force set up the Risk Assessment & Work Prioritization Working Group to review the proposal, and advise whether the Canadian Petroleum Products Institute Project should be established as a priority.** The Group included two petroleum products industry representatives (a second Institute senior director and a consultant); eight Environment and other federal department (Energy, Finance, Transport, and Industry) directors, chiefs, and the executive; one Energy senior economist; one Industry engineer; and two environmental group senior representatives (also Task Force members). A Conservation & Protection/Environmental Protection/Industrial Programs director was the lead for Environment. The executive was also an Interdepartmental Committee member.

The Environment Canada Project manager drafted three pages of notes on risk assessment/risk management and work prioritization and sent them to the Group for review and discussion at their meeting the next day. He wrote them:

There are two groups of questions to be taken into account in any risk assessment/risk management and work prioritization [sic] activity:

- What are the present and potential environmental risk or threats?, and what is their relative priority for action?; and
- What do you do about the risks so identified as being priority risks?

This dictates that the... paradigm is in two distinct and separate components:...

- risk identification and assessment, and prioritization [sic], and

- risk management strategy development and evaluation....  
[The first component] involves a number of steps:
- the identification and characterization of environmental risks and threats....
- assessment of the risks from a scientific perspective.... (...the... "Zurich Method" is often used for human health risks.)
- identification of other factors - jurisdictional responsibilities, public perceptions and reactions....

Each of these analyses and assessments can be brought together in a mathematical algorithm with appropriate (numerical) weighting systems, in order to arrive at a numerical score.

Typically the risks may be classed into groups:

- High, Medium, or Low; or
- DO (something about it), WATCH (the risk for change in significance), LIST (and review it next time around)....

[The second component] also involves a number of steps but is only carried out in respect to the first (DO) group of risks:

- What are the life-cycle factors in the risk, and where might the risk best be handled...<sup>1</sup>?
- What... is already being done? and with what response?
- What additional strategies... could be developed and applied, and with what estimated results?
- What are the costs of each strategy?<sup>3</sup>
- What are the benefits....?
- After evaluating the costs and benefits, and the availability of resources, what are the selected strategies?

<sup>1</sup> Life-cycle analysis has been used in many risk management assessment [sic] processes and is a fine art or science....

<sup>3</sup> Benefits... are extremely hard to quantify in dollar terms, especially when it becomes necessary or appropriate to value life.

The manager commented:

The science of risk assessment and management is still developing, and its application... is dynamic.... The need for the development and application of this science is not contested, the experience had with it requires assessment, and the various components of it... need to be more fully developed and integrated.

The Group met the next day to review the Institute proposal. The Institute presented the Canadian Petroleum Products Institute process. "Government departments and participating [environmental groups] considered it a useful starting point for developing the process by a future group." The Group drafted a set of principles for the Canadian Petroleum Products Institute Project.<sup>3</sup>

*The Environment Canada Project.* The Conservation & Protection/Ecosystem Sciences director general sent a memo on the "risk assessment project" to the Environment Canada Project manager. He wrote him:

You managed a considerable coup for [Ecosystem Sciences] in being given the Conservation & Protection lead. I now want to ensure that we are all on the same track and... have a comprehensive business plan, with confirmed partnerships... for my early December presentation to [Conservation & Protection] Management Board.

The director general proposed that the following points be reflected in the plan:

- The ultimate objective of the project is to provide departmental senior managers - [assistant deputy minister], [deputy minister] - and the Minister with a credible tool for evaluating environmental threats and for setting departmental priorities among industrial sectors, substances and/or ecosystems targeted for action and justifying decisions taken.
- The tool or framework for priority setting should stand up to scrutiny and satisfy the concerns of industry, [environmental groups], and media that the department is taking the most appropriate, and effective actions required.
- ...The project should include the application of the priority setting framework to specific decisions... The intent is to confirm existing priorities or to provide advice to senior management on future courses of action with appropriate rationale.  
Following the [deputy minister's] directives to focus on [Conservation & Protection's] bread and butter issues, it is important we keep to real priority setting issues facing our managers.
- A major challenge will be to develop a process that is transparent and inclusive while allowing the Minister and [deputy minister] maximum discretion in making the final decision.
- While "risk assessment" is clearly an underlying component, I'd suggest a working title... which focuses on the added value to setting priorities/decision... making. How about "[Environment Canada] Priority Setting Framework Project"?

Conservation & Protection's "bread and butter issues" were regulatory issues.

**Conservation & Protection set up the Priority Setting-Risk Assessment Committee within Conservation & Protection (not including Corporate Policy) to draft the Environment Canada Project plan, and advise whether Environment should establish the Imperial Oil and Canadian Petroleum Products Institute projects as priorities, as shown below.**

The Committee included the Environment Canada Project manager, Environmental Protection/Regulatory Affairs chief (also an Interdepartmental Committee member), a Regulatory Affairs economist, Environmental Protection/Industrial Programs chief, Environmental Protection/Waste Management manager, the Environmental Protection/Commercial Chemicals director, and a Wildlife representative. The Environment Canada Project manager was to be supported by the Ecosystem Sciences/Conservation/Ecosystem Risk Analysis head - now the Environment Canada

Project coordinator, and his staff. They included an ecological risk analyst and socioeconomic risk analyst.

The Committee were to initially "coordinate, within [Conservation & Protection], current and future activities related to risk assessment and priority setting" and "develop a business plan that will allow [Conservation & Protection] to deal with setting environmental priorities within [an Environment] context." In addition, the Committee were to work with Health and Industry to "adequately assess and respond to outside proposals which focus on risk assessment and/or priority setting (ie. [the Canadian Petroleum Products Institute] and [Imperial Oil senior manager] proposals)" and "participate in the development of a formal priority setting strategy for environmental protection initiatives."<sup>4</sup>

The Conservation & Protection assistant deputy minister's draft memo was revised. The phrase "the... work on the [Institute] front" was changed to "the work... on the [Institute] and [Advisory Committee on Environmental Protection] proposals."

**The assistant deputy minister sent the memo to the Environment deputy minister with a copy to the Corporate Policy assistant deputy minister and updated him on his decision to establish the Environment Canada Project as a priority for Environment.**

A few days later, in late November, the Ecosystem Sciences/Strategic Planning chief sent the draft memo to the Environment Canada Project manager. She wrote him:

The note... highlights the horizontal team [Conservation] is charged to establish.... [The Ecosystem Sciences director general] will be expected to present the base line... team focus... at the [early] December [Conservation & Protection] management briefing... We should discuss steps ahead as soon as possible to prepare appropriate material.<sup>5</sup>

*The Interdepartmental Committee Project.* Meanwhile, Environment and other federal departments continued reviewing the Imperial Oil senior manager's proposal. **CanTox finished their review of "priority setting methodologies" and drafted a report.** In the report, CanTox identified "the key issues which need to be addressed in setting an agenda for environmental priority setting in Canada" and provided "a set of recommendations to guide the development of a priority setting strategy specifically adapted to Canadian needs." An approach including "issue identification and characterization, criteria-based priority setting, and comparative risk assessment" was outlined.

Key... recommendations associated with developing a mechanism for environmental priority setting in Canada can be summarized as follows:

- the scope of the priority setting mechanism, from the outset, be carefully defined in terms of committing financial, time and manpower resources
- a strategy be designed which accommodates regional diversity in terms of type and extent of environmental problems, geography, culture, politics and economic well-being
- approaches used by other countries or agencies be reviewed to determine whether they can be adapted or applied to a Canadian priority setting strategy
- environmental experts (government, industry, [environmental groups], etc.) be assembled for consultation on development and design
- a comprehensive list of issues to be addressed in each of the three risk assessment areas (human health, ecological health, and social and economic well-being) be compiled and used to assist in the development of the priority setting mechanism

The Interdepartmental and Priority Setting-Risk Assessment committees met to review the CanTox report. **In the report, CanTox advised the Interdepartmental Committee that the Interdepartmental Committee Project should be established as a priority (to develop and use a science-based process to determine Canadian environmental priorities). At their meeting, the committees argued that more than two years should be allocated to determine national pollution priorities, and neither industry nor an advisory group should decide Canadian environmental priorities (vs the federal government, who should), as shown below by an excerpt from an Environment Canada Project coordinator's information note.**

It was generally agreed that the agenda set out by [Advisory Committee on Environmental Protection] is far too ambitious and can not... reasonably be achieved within a two year timeframe... The approach outlined by CanTox... was generally accepted... Everyone concurred that the federal government not industry or an advisory group should be responsible for conducting the priority setting exercise.

The Conservation & Protection/Environmental Protection/Regulatory Affairs economist drafted the three-page Interdepartmental Committee's briefing note on the federal response to the Imperial Oil senior manager's proposal. The Regulatory Affairs chief sent the note to an Industry director, the Health/Health Protection director, and Environment Canada Project manager.

**The Interdepartmental Committee sent the briefing note to the Memorandum of Understanding Steering Committee and advised them to establish the Interdepartmental Committee Project as a priority, but not the Imperial Oil Project, as shown below by excerpts from the note.**

Regarding background and current status, the Interdepartmental Committee wrote the Steering Committee:

Given the number of outside proposals advocating various strategies for prioritizing environmental protection initiatives, it would seem that existing mechanisms... are not readily apparent to the general public. Acknowledging that greater emphasis could be placed on developing and integrating a more visible and structured framework for priority setting into the decision-making process, [Environmental Protection] has responded as follows....

It is clear from the... CanTox report that the development of a mechanism for priority setting in Canada will require careful scoping and design. While acknowledging the merit of the [Imperial Oil senior manager] proposal and the risk-based benefit/cost analysis approach it advocates, it is imperative to recognize that:

- there are alternate methodologies for prioritizing environmental protection initiatives
- the [senior manager] approach and timetable may not be feasible given budgetary and time constraints.

Developing a strategy which accommodates financial and time constraints and yet addresses the many diverse environmental issues and concerns which exist throughout Canada, will require further investigation and study.

Regarding action, the Interdepartmental Committee wrote:

To that end, the inter-departmental and Priority Setting-Risk Assessment committees have agreed to proceed as follows:

- CanTox... will be requested to provide a final draft of their report which reflects and incorporates comments from [Environment, Health, and Industry]. ...It is proposed that this report... be presented to... [the Advisory Committee on Environmental Protection]... at their February meeting.
  - A series of workshops will be organized to:
    - determine how best to identify and define the environmental issues of concern in Canada
    - examine specific methodologies associated with the assessment of human health..., ecological... and social and economic risk
    - develop a framework for managing the project
- Representatives of the various interest groups within [the Advisory Committee] will be invited to participate and provide input into these workshops, along with selected individuals from various constituencies.
- [the Advisory Committee] will be advised of:
    - the federal response to date
    - the action plan to be adopted in developing a Canadian environmental priority setting strategy (upon approval of the Steering Committee).

The Interdepartmental Committee recommended, "The Steering Committee commit to the action plan... and invest the time and resources required to develop an environmental priority ranking system which will best accommodate the diverse regional, economic and cultural interests within Canada."

**As shown above, the Interdepartmental Committee argued that benefit-cost analysts should not help decide Canadian environmental priorities (vs other experts, who should).<sup>6</sup>**

*The Environment Canada Project.* **The Environment Canada Project coordinator advised that the Interdepartmental Committee Project should be established (equal to re-establishing the Environment Canada Project), but the Imperial Oil and Canadian Petroleum Products Institute projects should not be, as shown below by an excerpt from the coordinator's information note.**

The coordinator concluded and recommended:

A common interdepartmental response should be adopted to this initiative and others proposed by industry groups such as [the Institute]

A scoping exercise led by [Conservation & Protection] could be undertaken and completed by the end of the fiscal year. This exercise could include:

- resource requirements, timeframe, roles and responsibilities
- development of a draft framework and criteria
- convening a multi-disciplinary workshop to review the proposed framework, methods, screening and evaluation criteria used
- stakeholder consultations
- formulation of an action plan.

Industry and [environmental groups] should be kept posted of our progress.

(The end of the fiscal year was March 1993.)

**The Conservation & Protection/Ecosystem Sciences director general sent an outline comparing the Imperial Oil senior manager's and Institute's proposals to the Conservation & Protection assistant deputy minister and, as shown below, advised him to re-establish the Environment Canada Project (equal to establishing the Interdepartmental Committee Project) as a priority. Also shown, he argued against establishing the Canadian Petroleum Products Institute and Imperial Oil projects because the Canadian Petroleum Products Institute and Advisory Committee on Environmental Protection should not decide Environment's priorities (vs Environment, who should).**

The director general wrote the assistant deputy minister:

[Conservation & Protection/Environmental Protection] is currently involved in two parallel projects on priority setting/risk assessment, one sponsored by the... Committee... and the other by the... Institute... The [Committee] proposal... provides a general industry perspective on how Environment... should handle priority setting. The [Institute] proposal... is based on affordability by the industry rather than



the level of risk to the environment. ...The concerns in both these proposals should be dealt with simultaneously....

It is not the role of [the Institute] or [Committee] to set departmental policies or priorities. [Ecosystem Sciences] has been assigned the responsibility to respond to these initiatives. First, [Ecosystem Sciences/Conservation] will form a small working group to develop priority-setting methods, screening and evaluation criteria to be tested. Second, those involved from [Conservation] would require direct exposure to key industrial players. Then a workshop of experts will be convened to review the proposed methods and procedures so that we get results that are transparent and acceptable to the user.

(The scoping exercise was underway.)<sup>7</sup>

At the end of November, the Conservation & Protection/Policy director general, in an urgent memo, sent the Conservation & Protection assistant deputy minister's memo to the Environment Canada Project manager. The manager sent it to the Environment Canada Project coordinator to use in the Ecosystem Sciences director general's memos.

**The same day, the Environment deputy minister replied to the assistant deputy minister's memo and, as shown below, re-established the Environment Canada Project as a priority for Environment.**

The deputy minister wrote the assistant deputy minister, "Good initiative." The deputy minister's memo was sent to the Policy director.<sup>8</sup>

**Conservation drafted the Environment Canada Project plan, i.e., a six-page business plan, and, as shown below by excerpts from it, resolved the arguments about the Environment Canada process determining more than regulatory priorities, and the Canadian Petroleum Products Institute and Advisory Committee on Environmental Protection not deciding Environment's priorities. Conservation recommended the process determine more than regulatory priorities, and the Institute and Committee help decide Environment's priorities in the process.**

The draft plan reflected some of the comments and concerns that were raised regarding the Institute, Advisory Committee, and Hickling proposals. Conservation had not yet been able to consult with other Conservation & Protection directorates and other federal departments due to the workload involved in dealing with the proposals.

Regarding background, Conservation wrote:

Post-Green Plan, the environmental protection agenda has become so charged with initiatives, that various stakeholders are questioning the way in which Environment... sets its strategic and budgetary priorities, and the number of items on the agenda. In response to these concerns, various stakeholder groups, such as the Advisory Committee... and... Institute..., have proposed different approaches to priority

setting. As well, other players such as Hickling... are now trying to sell their own approach to the department.

There are many advantages to setting risk-based priorities....

Freed from program constraints, analysts can examine a large menu of problems and potential solutions in a relatively short period of time.

Regarding project description, Conservation wrote that the "priority setting system" had three components: an ecosystem scan, screening criteria, and an initial assessment of possible response strategies. The strategies included monitoring, assessment, control, and mitigation. Although not covered by the Project, subsequent stages of the risk management process, including option selection and implementation, monitoring, and evaluation, were to "strongly benefit" from it.

Tasks included:

- Establish a [Environment/other federal department] [Director General Steering Committee] and [Project Team] to review proposed process and to obtain commitment or to modify through negotiation. Develop a series of partnerships within Environment..., with [other federal departments] and other stakeholders to complete a coordinated set of tasks between December 1992 to March 1993. Review progress reports submitted by [the Team] and hopefully incorporate bilateral initiatives undertaken by groups such as [the Advisory Committee] and [Institute]....
- Convene multidisciplinary workshop to review proposed ecosystem management framework, screening procedures and evaluation criteria used.

Stakeholders included provincial governments, industry associations, and environmental groups.

Resource needs included: for the ecosystem scan, a consulting contract; for response strategies, a consulting contract; and for screening and assessment, public opinion polls and the workshop.

The timeframe and deliverables included the first Steering Committee meeting in December 1992, the workshop in mid-March 1993, and completion of the Project - "a fully documented priority setting system and initial list of agreed upon priorities based on a commonly accepted ranking framework" - at the end of the 1992-93 fiscal year.

**At the beginning of December, Conservation presented the draft plan to the Ecosystem Sciences management board and advised them to re-establish the Project as a priority.<sup>9</sup>**

*The Canadian Petroleum Products Institute Project.* **By now, the Risk Assessment & Work Prioritization Working Group drafted a plan for the Canadian**

**Petroleum Products Institute Project, i.e., a one-page work plan for the Environmental Priorities Working Group.** Regarding mandate, the Risk Assessment & Work Prioritization Working Group wrote:

to more fully develop [the Canadian Petroleum Products Institute's] environmental prioritization methodology and make recommendations to [the Petroleum Products Industry] Task Force regarding its suitability as a tool for setting environmental priorities in the downstream petroleum industry.

Regarding framework, the Risk Assessment & Work Prioritization Working Group wrote:

[The Institute's] proposed Environmental Prioritization [sic] Methodology... has stimulated considerable discussion among Task Force members and... Group members about the difficulties associated with setting environmental priorities. [The Methodology] should continue to provide the framework for improving this methodology.

Tasks and timelines included: identifying "environmental issues related to the petroleum products industry... (i.e., linked to products and processes, as well as existing government regulations and policies)" and developing "methodology for assessing the ecological and health priorities, associated with these issues" by January 1993; and identifying "other factors which must be considered in setting environmental priorities for the industry (perhaps building on some of the criteria included in the existing [Canadian Petroleum Products Institute] model such as socioeconomic impacts and costs)" by February 1993. The final report to the Task Force was due in June 1993. The plan is shown in Appendix 2.

**The Risk Assessment & Work Prioritization Working Group presented the plan to the Task Force and advised them to establish the Project as a priority.<sup>10</sup>**

*The Environment Canada Project.* In early December, the Conservation & Protection assistant deputy minister asked the Conservation & Protection/Environmental Protection director general and Conservation & Protection/Ecosystem Sciences director general to advise whether the Environment Canada Project should be re-established (equal to establishing the Interdepartmental Committee Project); the Imperial Oil, Canadian Petroleum Products Institute, and Hickling projects not established; and the Priority Substances List 2 Project ended as priorities, as shown below.

In a "no hurry" memo, the assistant deputy minister wrote the director generals:

I would like... a brief briefing on:

- Hickling's risk assessment methodology (proposed);
- [the Canadian Petroleum Products Institute's] model;
- [the Imperial Oil senior manager's] proposal at [the Advisory Committee on Environmental Protection] on prioritization [sic].

Are there linkages?

Is the [Advisory Committee] work and the [Institute] work duplicative?

[Environment] is also getting its act together - probably lots of overlap here (linkages with [Health] through [the Priority Substances List 2 Project]).

Other industry sectors e.g. [Mining Association of Canada] also interested in risk assessment.

Can we all get our act together on this one? For example, a multi-stakeholder workshop could be held to develop one preferred (if not perfect) tool.

**The Mulroney Conservatives established the Priority Substances List 2 Project (to develop and use a science-based process to determine federal government pollution priorities) as a priority for the federal government in December 1990 under the Green Plan.** The federal government is required under the Canadian Environmental Protection Act to develop a priority substances list. The list itself is a list of chemicals (i.e., priorities) for assessment. The first list was published in 1989. The second list was to be published in 1994 and revised every three years after that. Environment and Health are the lead departments.

Ecosystem Sciences scheduled the assistant deputy minister briefing for late December.

The Conservation & Protection/Policy director sent the Environment deputy minister's memo and a draft agenda for a meeting on "priority setting" in early December to the Ecosystem Sciences, Environmental Protection, and Corporate Policy director generals. The expected results of the meeting were to incorporate the Conservation & Protection assistant deputy minister's direction to the draft Environment Canada Project plan; task the team to finalize it; lead to the assistant deputy minister briefing, which was now scheduled for early January; and make linkages with other initiatives such as Regulatory Review, the Hickling proposal, and Fiscal Restraint. The assistant deputy minister's direction and expectations included "Phase 1. Inventory/Tools/Process/Priorities" and "Phase 2. Incorporating lessons from Regulatory Review/Economic Instruments/Others."

The Mulroney Conservatives established Regulatory Review, a federal government-wide review of regulations and competitiveness, as a priority for the federal

government in the February 1992 Budget. **Environment then established the Environment Canada Regulatory Review project, "of 35 environmental protection and three wildlife regulations focuses on improving delivery of environmental and competitiveness objectives," as a priority for themselves.** "Findings in discussion documents will lead to recommendations to the Minister."

The Mulroney Conservatives established Fiscal Restraint as a priority for the federal government by now. **The Conservation & Protection assistant deputy minister then established the Conservation & Protection Fiscal Restraint Project (to develop a process to determine Conservation & Protection's program priorities) as a priority for Environment, as shown below by an excerpt from an Environment Canada Project coordinator's memo.**

[The Conservation & Protection/Management Accountability director] and [Conservation & Protection/Finance & Administration director] have... been asked by the [assistant deputy minister] to develop priority setting criteria for the [Conservation & Protection] fiscal restraint exercise.

And the Economic Instruments for Environmental Protection project was established as a priority for the federal government by now. Based on a federal discussion paper, consultations were to "focus on practical design and implementation issues related to the use of economic instruments in Canada."<sup>11</sup>

Ecosystem Sciences/Conservation were to revise the draft Environment Canada Project plan based on the comments received so far. They intended:

to circulate next week, the somewhat modified draft... plan to confirmed and potential members of the Priority Setting Team and to convene short meetings with... members [in mid-December] to review the [Conservation] proposal and then to produce a formal... plan incorporating the views of... members and their respective directorates.

"This formal... plan would be presented to the Priority Setting [Director General] Steering Committee for consideration and review, prior to it being presented to [Conservation & Protection] Management Board."

The Environment Canada Project manager sent draft memos from the Ecosystem Sciences director general to other Environment (including regional, and Conservation & Protection/Wildlife) and other federal department director generals (who either were aware or should have a direct interest in the Project) to the director general for his early review and consideration. **The manager advised the Ecosystem**

**Sciences director general to advise the other Environment director generals to re-establish the Environment Canada Project as a priority and the other federal department director generals to establish it; and for this group to advise Environment whether it should be re-established (use the Environment Canada process), as shown below by excerpts from the memos. The Ecosystem Sciences director general sent the draft Project plan and a preliminary list of Director General Steering Committee members to the other director generals and, also shown, advised them.**

The Ecosystem Sciences director general basically wrote the other director generals:

In response to stakeholder concerns, that have been expressed about [Environment's] crowded regulatory agenda and the severe constraints facing both industry and government, that now limit our ability to achieve the goals set out in the Green Plan and our ability to respond to emerging environmental problems, Environment... has recognized the need to develop a comprehensive framework for setting environmental protection priorities and is setting up a process to do so.

The objective of this initiative is to formulate a comprehensive framework for setting priorities for assessing environmental issues and concerns, identified through various scanning activities, and for the development of subsequent management response strategies. We expect and hope, that the exercise will answer the concerns raised by the Canadian Petroleum Products Institute... and Advisory Committee on Environmental Protection... among others, that Environment... should have a more comprehensive, transparent and predictable framework for setting its priorities. It is our intention to bring them into this process as partners, rather than having us respond simultaneously to a number of externally generated priority setting initiatives that rely on different frameworks.

Except he wrote the other Environment director generals, "It is our intention to bring them into this process as partners, rather than expecting them to respond simultaneously to a number of priority setting initiatives that rely on different frameworks."

The Ecosystem Sciences director general asked the other Environment director generals whether they agreed with the need for a Steering Committee, its composition, and the process. He also asked the other Environment director generals who were not at the meeting to each nominate a Project Team member from their directorate. He asked the other federal department director generals whether they agreed with the need for a Committee and to each nominate a Team member, but not whether they agreed with the composition or the process.<sup>12</sup>

*The Canadian Petroleum Products Institute Project.* **By early December, the Petroleum Products Industry Task Force resolved the argument about not establishing the Canadian Petroleum Products Institute Project as a priority. They established it for Environment, other federal departments, the Canadian Petroleum Products Institute, and two environmental groups, as shown below. The Task Force set up the Environmental Priorities Working Group to develop the Canadian Petroleum Products Institute process and, also shown, to later advise whether the Project should be re-established (use the process).**

The Task Force now included Health/Health Protection. The Group were to include the Conservation & Protection/Environmental Protection director general and second Petro-Canada senior manager (the co-chairs); three other petroleum products industry senior representatives (including the Institute and Imperial Oil); ten to fifteen Environment and other federal department (Energy, Finance, Transport, Industry, and Health/Health Protection) director generals, directors, chiefs, and the executive; the Energy economist; one Health Protection biostatistician; and two environmental group senior representatives (Pembina Institute and Society to Overcome Pollution). Monthly meetings were scheduled. A draft report was due in April 1993.

The Task Force also established the Competitiveness Project as a priority for Environment, other federal departments, and the Canadian Petroleum Products Institute, and set up the Competitiveness Issues Working Group to review "selected issues related to the industry's economic and competitive position" and recommend "actions to improve the industry's performance." Energy was the lead department.<sup>13</sup>

*The Corporate Policy Project.* **The Corporate Policy assistant deputy minister did not establish the Hickling projects as priorities, but did establish the Corporate Policy Project (to develop and use a science-based process to determine Environment's policy priorities) for Environment, and especially for Corporate Policy, as shown below.**

**Corporate Policy contracted Hickling to develop the Hickling process, "a practical methodological basis for using economic analysis in Environment... as a means of establishing environmental priorities." A final report recommending "a methodological approach and strategy for application to policy issues facing Environment" was due in March 1993.<sup>14</sup>**

*The Environment Canada, Environment Canada Regulatory Review, and Conservation & Protection Fiscal Restraint projects.* **At the meeting that was to lead to the Conservation & Protection assistant deputy minister meeting, in the draft Environment Canada Project plan, Conservation & Protection/Ecosystem Sciences (via their director general) advised the Conservation & Protection/Environmental Protection director general, Corporate Policy director general, and Conservation & Protection/Policy director to re-establish the Project as a priority, and advise other federal departments to establish it. The Environmental Protection director general, Corporate Policy director general, and Policy director argued that the departments - including their experts - should not help decide Environment's priorities, while Ecosystem Sciences argued that they should, as shown below by excerpts from the Environment Canada Project coordinator's memo. Also shown, the Ecosystem Sciences director general, Environmental Protection director general, Corporate Policy director general, and Policy director resolved the argument. They decided that the Conservation & Protection assistant deputy minister should determine this.**

The Environment Canada Project manager was away on business. Representatives of the Environment Canada Regulatory Review Project (including the Regulatory Review director) and Conservation & Protection Fiscal Restraint Project (the Conservation & Protection/Management Accountability and Conservation & Protection/Finance & Administration directors) attended the meeting. They were invited by the Policy director, the former because of the "obvious implications" of the Environment Canada Project, and the latter because the assistant deputy minister had also asked them to develop "priority setting criteria."

The Ecosystem Sciences director general reported on the Environment Canada Project. The Environmental Protection director general reported on the Canadian Petroleum Products Institute, Competitiveness, and Imperial Oil projects. The Corporate Policy director general reported on the Corporate Policy and Science Forum projects. And the Policy director outlined the Conservation & Protection assistant deputy minister's expectations.

The Science Forum project was a conference of researchers, research managers, and policy people from all parts of Environment. It was the first time such a conference had been held. Environment/Science Advisor were the lead.



After the meeting, the coordinator sent a memo to the manager about it. Regarding the Environment Canada Regulatory Review and Conservation & Protection Fiscal Restraint projects, he wrote:

These two groups should be kept informed at each stage of our work and may even want to contribute to some of the tasks.... I briefed [the Management Accountability director]... and she gave me, the first draft of what they are sending to [Conservation & Protection] management board. We are unlikely to be able comment [sic]... now but she will give us an opportunity for input after the meeting.

Regarding the Environment Canada Project, the coordinator wrote:

The need for a Priority Setting [Core Director] Working Group was recognized, in addition to [Director General] Steering Committee and [Project Team]... It should probably be chaired by yourself, and include at minimum... [the Policy director], [Environmental Protection/Regulatory Affairs] director, and someone from [Corporate Policy]....

There was extensive discussion on the One Window Concept. I told them that I did not feel that it was feasible or desirable for you to attend all the meetings... Maybe you need an ambassador or we need to organize a speakers bureau. At the same time when the [assistant deputy minister] or Stakeholder groups are told about the wondrous things we are doing, each directorate in the room has to be humming the same tune.

The involvement of [other federal departments] in the [Committee] and [Team] at this stage was questioned, given the [Environment deputy minister's] direction to get our own house in order first. After much cajoling, it was agreed that we should consult with [other federal departments] but that we needed to brief the [assistant deputy minister] and get his feedback, before the approach we recommend is finalized and submitted to the.. Committee.

It was unusual for a project to include a director-level Working Group. The Group, to include some of the Priority Setting-Risk Assessment Committee members, were to set up the Team, and they were to include the other Committee members.

Regarding the Competitiveness Project, the coordinator wrote, "What may be of interest to us is that [Industry] has developed methods for assessing competitiveness."

Regarding the Imperial Oil, Interdepartmental Committee, and Canadian Petroleum Products Institute projects, the coordinator wrote:

In aside [sic] to [the Ecosystem Sciences director general] and myself, [the Environmental Protection director general] indicated that he is not wedded to what [the Regulatory Affairs chief and economist] proposed in their briefing for [the Conservation & Protection assistant deputy minister's] meeting with [the Industry assistant deputy minister].

I suggest that you meet with [the Regulatory Affairs director] and establish that the

- ...Steering Committee will coordinate response to [the Advisory Committee on Environmental Protection] or [Canadian Petroleum Products Institute]
- any future briefings for [assistant deputy minister] will be jointly prepared and reviewed by all members of the... Working Group.

Regarding the Corporate Policy Project, the coordinator wrote:

The spin [the Corporate Policy director general] put on the project gives me major cause for concern. It appears that he wants to set up a similar exercise by which departmental activities could be compared across similar sectors. Hickling is supposed to be undertaking a state-of-the-art review of different methods and approaches. And so is CanTox for [the Advisory Committee]. We are attempting to get the terms of reference.

An independent review of what's out there is necessary to validate the approach we adopt. But you are going to have to get one group to defer to the other group or work out a division of labour. I am not sure how this requirement will affect the critical path for the project.

Regarding the Science Forum project, the coordinator wrote:

...They attempted a priority setting exercise which caused a lot of unease. They spent... 1 to 1-1/2 days on risk analysis which received only grudging endorsement. [The Corporate Policy director general] felt that the approach would have to be shopped around before it would gain wide acceptance. I... will try to find out what ground they covered. Again, this will make our work all the more difficult.

And regarding the Conservation & Protection assistant deputy minister's expectations, the coordinator wrote:

I am not sure how or in what forum they were conveyed to [the Policy director]:

- an inventory of approaches from which we have picked and chosen
- a model risk assessment framework and approach to the ways we do business
- demonstrate, market and use it by applying it to one or more industrial sectors eg. chemical, pulp & paper, mining
- establish linkages to other initiatives eg. economic instruments; regulatory review; science forum
- a rough-cut at our priorities

You should discuss... the timing of an [assistant deputy minister] briefing with [the director] re: project purpose, process, linkages and consultations asap after your return.

(The petroleum products sector was not included.)

As shown above, the coordinator questioned whether Hickling *and* CanTox experts could help decide Environment's priorities. Also shown, the Corporate Policy director general and coordinator questioned whether Environment - including their experts - would agree that risk assessors should.<sup>15</sup>

*The Environment Canada Project.* Conservation & Protection/Ecosystem Sciences/Conservation revised the draft Environment Canada Project plan. Regarding background, they now wrote:

Environment... proposes to develop a comprehensive framework for setting risk based priorities. This framework is required because the number of items on the regulatory agenda is growing, due to public concern or the detection of early warning signals, at a time when the ability of both government and industry to respond is constrained. Moreover a number of stakeholder groups are proposing different approaches to priority setting for the department that must be reconciled.

And regarding project description, Conservation wrote, "Three multidisciplinary project teams will be built and led by different directorates.... A multidisciplinary workshop will be convened."

The Ecosystem Sciences director general, Environment Canada Project manager, and Environment Canada Project coordinator revised the draft plan, i.e., drafted the Conservation & Protection assistant deputy minister briefing. The manager sent it to the Conservation & Protection/Policy, Conservation & Protection/Environmental Protection/Industrial Programs, and Environmental Protection/Regulatory Affairs directors with copies to the Corporate Policy director general and a director, and invited them to a meeting to review it. He wrote them:

I am fully aware that you have a high level of interest in the... Briefing and I wish to consult with you on what is being prepared...

We have spent a considerable amount of time... discussing things with a number of your staff, and with others... and believe that we have a reasonably accurate view of your interests and perspectives. However, this discussion period is absorbing so much of our time, that it is difficult to actually produce the [briefing]....

...I therefore invite you... to a meeting... to ensure that we have a good balance and a reasonable representation of your perspectives and interests.

The Regulatory Affairs director wrote the manager, "[The Regulatory Affairs chief] will represent me at the meeting, because given this short notice, I have another commitment which I cannot change." The manager wrote the director after the assistant deputy minister briefing:

...I believe the ultimate [briefing] was satisfactory (more or less) to all at the [assistant deputy minister] briefing....

I know that you are very much preoccupied by the Regulatory Review, and perhaps by giving [Ecosystem Sciences] the primary coordination responsibility for

the Priority Setting exercise, the [assistant deputy minister] has given you and your staff more (although probably still insufficient) time to deal with the other.<sup>16</sup>

*The Interdepartmental Committee Project.* In early December, before the Conservation & Protection assistant deputy minister briefing, Environment and other federal departments continued reviewing the Imperial Oil senior manager's proposal. After a conference call between the Interdepartmental Committee and Advisory Committee on Environmental Protection/Focus Group on Priority Setting (the Canadian Labour Congress executive vice-president did not attend), the final CanTox report was sent to the Advisory Committee, with a covering note from the Group.

**In mid-December, the Industry assistant deputy minister sent the Conservation & Protection assistant deputy minister a chronology of "priority setting activities" (including the Imperial Oil, Interdepartmental Committee, Canadian Petroleum Products Institute, Environment Canada, and Corporate Policy projects) and, as shown below, advised him to establish the Interdepartmental Committee Project as a priority.**

The Industry assistant deputy minister wrote the Conservation & Protection assistant deputy minister:

Further to our discussion yesterday, I am very aware that we committed to... reply to the Advisory Committee... by [mid-December]... I recently agreed to a status report to [the Committee]... to be co-signed by us.

...It is essential that, in all this activity, we do not lose sight of the critical need to work together within the [the Advisory Committee] committee and within a fairly tight time frame, to develop the principles, a basic framework and an open process for setting priorities within the federal government.

I suggest we meet early in [January] in order to get a joint sense that the handling of this issue will be timely and well-coordinated, and remain open from the outset to all concerned parties, including industry and other government departments. It is also essential that the role of [the Advisory Committee]... be clarified.

(The memo was received by the Conservation & Protection assistant deputy minister and Conservation & Protection/Environmental Protection director general at the end of December, and forwarded to the Conservation & Protection/Ecosystem Sciences director general and Environment Canada Project manager in early January.)<sup>17</sup>

*The Environment Canada Project.* **Conservation & Protection/Ecosystem Sciences, Conservation & Protection/Environmental Protection, and Conservation**

**& Protection/Policy finished the draft Environment Canada Project plan.** The Environment Canada Project manager, Environmental Protection/Regulatory Affairs director, Environmental Protection/Industrial Programs chief, and Policy director met to review it. It was revised.

Regarding the Corporate Policy Project, the manager, directors, and chief, wrote that the "present approach of the Policy Advisory Committee... has two weaknesses": "it deals with issues sequentially in the absence of an overall framework for establishing priorities" and "it does not have a means of early identification of 'over the horizon' issues which may become critical in the near future." And regarding the relationship between the Canadian Petroleum Products Institute, Imperial Oil, and Corporate Policy projects, they wrote:

Analysis of [Canadian Petroleum Products Institute] & [Advisory Committee on Environmental Protection] Initiatives

Linkages

- risk analysis
- priority setting
- concern about solution's affordability

Overlap

- stakeholders
- ranking criteria used
- scope of exercise
- timeframe

Results

- competing approaches
- different results
- no way to choose between them

Hickling Contract

- [Corporate Policy] initiative taken to Top-Of-House

The purpose of the Environment Canada Project was to "develop a process with outputs to guide Minister and [Environment] in setting response priorities for environmental problems resulting from socio-economic activity." The recommended approach included confirmation from the Top of the House Committee on the terms of reference, and convening the multistakeholder (and multidisciplinary) workshop to try out the approach on a candidate group of problems.

The outputs included:

Long Term [Phase 3] - list of priorities

- minister makes decisions
- department initiates plans of action
- industry bases investment plans

Medium Term [Phase 2] - methodology

- full public consultation
- majority of stakeholders buy-in
- initial sectoral applications

Shortrun [Phase 1] - framework

- criteria
- ranking & weighting procedures
- government departments
- tested on representative problems

The timeframe for Phase 1, "getting our own house in order," included the multidisciplinary workshop now by April 1993, and public consultation by May 1993.

Decisions, "commitment in principle," included: purpose and process, approach, timeframe, resource levels (\$100,000 for two to three contracts and the workshop, and 10 to 15 days of about 15 key persons' time), participation of other federal department directorates, involvement of only two to three stakeholder groups at this time, and take the resulting action plan to the Top of the House Committee in January 1993.

As shown above, the manager, directors, and chief questioned whether Hickling experts should help decide Environment's priorities.

In late December, the morning before the Conservation & Protection assistant deputy minister briefing, the draft Environment Canada Project plan was sent to the directors and chief, and the Ecosystem Sciences, Environmental Protection, and Policy director generals. **In the draft plan, the manager, directors, and chief advised the director generals to argue to the assistant deputy minister to re-establish the Environment Canada Project, end the Canadian Petroleum Products Institute Project, and not establish the Imperial Oil Project as priorities because one (the Environment Canada) process (vs three processes) should determine Environment's priorities. The manager, directors, and chief questioned whether the Corporate Policy Project should be re-established.**

**At the briefing, in the draft plan, the director generals argued the same to the assistant deputy minister (via the Ecosystem Sciences director general), and questioned the same.**

The Ecosystem Sciences director general, manager, Environment Canada Project coordinator, Ecosystem Sciences/Strategic Planning director, Ecosystem Sciences/Eco-Health director, Environmental Protection director general, a second Policy director, a Policy advisor, Management Accountability director, Finance & Administration Branch director, and Regulatory Review director attended the one-hour

briefing. The Ecosystem Sciences director general briefed the assistant deputy minister on the Environment Canada Project and its relationship to the Canadian Petroleum Products Institute, Imperial Oil, and Corporate Policy projects. He was also briefed on the Environment Canada Regulatory Review and Conservation & Protection Fiscal Restraint projects.

As shown above by excerpts from the draft plan, the director generals questioned whether Hickling experts should help decide Environment's priorities.

**The assistant deputy minister re-established the Environment Canada Project as a priority for Environment (develop the Environment Canada process), as shown below by an excerpt from an Environment Canada Project manager's memo.**

"[The assistant deputy minister] gave us the go ahead to proceed with this initiative." (The coordinator later told me that they were "quite successful.")

In other words, the assistant deputy minister approved Phase 1 of the Environment Canada Project plan (to develop the process).<sup>18</sup>

### Discussion

#### The Environment Canada Project

*Re-establishing it for Environment.* During the first process of re-establishing the Environment Canada Project as a priority for Environment, the Environment deputy minister - the final decision-maker for Environment - decided to reallocate time and staff to this Project. Government experts did not offer advice, so they seemed to have no influence on the decision.

In this process, government experts were not asked for advice, and did not offer it. So perhaps they had no influence on the decision because *either they were not asked or did not offer*. But why were they not asked, and why did they not offer? In the process that was to be developed and used in this Project - the Environment Canada process - Environment experts were to be asked by Environment.

Like government experts, the deputy minister was a public servant, but unlike them, he was a manager (Environment senior), not an expert, although he had expertise in economics. So perhaps the lack of influence by government experts on the decision did not make a significant difference to determining "good" environmental priorities

because the deputy minister knew as much as (or more than) they did about the science of deciding priorities. Also, the other participants - including Environment managers with expertise in engineering and natural science - did not question if this Project should be re-established. In particular, after the Conservation & Protection assistant deputy minister established it, he updated the deputy minister on his decision; the Environment Canada Project coordinator advised that the Interdepartmental Committee Project should be established (equal to re-establishing this Project), and the Imperial Oil and Canadian Petroleum Products Institute projects should not be established; the Conservation & Protection/Ecosystem Sciences director general advised the assistant deputy minister to re-establish this Project, and argued against the Canadian Petroleum Products Institute and Imperial Oil projects. But what did government experts know?

### The Canadian Petroleum Products Institute Project

*Establishing it for Environment and other federal departments.* During the process of establishing the Canadian Petroleum Products Institute Project for Environment and other federal departments (and the Canadian Petroleum Products Institute and two environmental groups), the Risk Assessment & Work Prioritization Working Group - including the Energy economist and Industry engineer - advised the Petroleum Products Industry Task Force to allocate time and staff to this Project. Then the Task Force - the interim decision-maker for this Project - decided to allocate time and staff, so the Energy economist seemed to have a major influence on the decision. The Priority Setting-Risk Assessment Committee - including the Conservation & Protection/Environmental Protection/Regulatory Affairs economist - did not offer advice, so the Regulatory Affairs economist seemed to have no influence.

In this process, the Energy economist, and engineer seemed to be asked for advice by the Group, and to offer it to them; the Group were asked by the Task Force, and offered it to them; the Regulatory Affairs economist was asked by the Regulatory Affairs director, but did not seem to offer; and the Committee were asked by Conservation & Protection, including the Conservation & Protection assistant deputy minister (a Task Force member), but did not offer. So perhaps the Energy economist, and engineer had a major influence on the decision because *they were asked and offered*. And the Regulatory Affairs economist had no influence because *although she was asked, she did not offer*. But why were the Energy economist, and engineer asked,



and why did they offer? And why was the Regulatory Affairs economist asked, and why did she not offer? In the process that was to be developed and used in this Project - the Canadian Petroleum Products Institute process - government and non-government experts were to be asked by the Institute.

Like the economists, some Task Force members were public servants, but unlike them, they were managers (Environment and other federal department), not experts, although they had expertise, e.g., the Conservation & Protection and Corporate Policy assistant deputy ministers in engineering and economics, respectively. So perhaps the lack of influence by the Regulatory Affairs economist on the decision did not make a significant difference because the Task Force knew as much as (or more than) she did about the science of deciding priorities. And the major influence by the Energy economist, and engineer did not make a significant difference because the Task Force knew as much as they did about the science. In addition, the other Group members included Environment and other federal department managers with expertise in engineering and economics.

However, the other participants - including Environment managers who had expertise in natural science and engineering - questioned if this Project should be established, with the major exception of the Institute who advised the Task Force to establish it. In particular, the Environment Canada Project coordinator advised that it and the Imperial Oil project should not be, but the Interdepartmental Committee Project should be; the Conservation & Protection/Ecosystem Sciences director general argued to the Conservation & Protection assistant deputy minister not to establish this Project or the Imperial Oil Project, and advised him to re-establish the Environment Canada Project; the Conservation & Protection assistant deputy minister (also a Task Force member) asked the Ecosystem Sciences and Environmental Protection director generals to advise if this Project and the Imperial Oil and Hickling projects should not be established, the Environment Canada Project re-established, and the Priority Substances List 2 Project ended. But what did the Regulatory Affairs economist and other government experts know?

#### The Environment Canada Project, Continued

*Re-establishing it for Environment.* During the second process of re-establishing the Environment Canada Project for Environment, the Conservation & Protection

assistant deputy minister - the final decision-maker for this Project - decided to allocate money and more time and staff to it. Government experts did not offer advice, so they seemed to have no influence.

In this process, similar to the first process of re-establishing the Project for Environment (discussed above), government experts were not asked for advice, and did not offer it. So perhaps they had no influence on the decision because *either they were not asked or did not offer*. But why were they not asked, and why did they not offer? In the process that was to be developed and used in this Project - the Environment Canada process - Environment experts were to be asked by Environment.

Like government experts, the assistant deputy minister was a public servant, but unlike them, he was a manager (Environment senior), not an expert, although he had expertise in engineering. So perhaps the lack of influence by government experts on the decision did not make a significant difference because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities. Also, the other participants - including Environment managers with expertise in economics and natural science - did not question if this Project should be re-established, with the minor exception of the assistant deputy minister who asked the Conservation & Protection/Ecosystem Sciences and Conservation & Protection/Environmental Protection director generals to advise if it should be re-established, the Canadian Petroleum Products Institute, Imperial Oil, and Hickling projects not established, and the Priority Substances List 2 Project ended. In particular, after the Environment deputy minister (the final decision-maker for Environment) re-established this Project, the Ecosystem Sciences/Conservation advised the Ecosystem Sciences management board to re-establish it; the Ecosystem Sciences director general advised other Environment director generals to re-establish it, and other federal department director generals to establish it; Ecosystem Sciences advised the Environmental Protection director general, Corporate Policy director general, and first Conservation & Protection/Policy director to re-establish it; the Ecosystem Sciences, Environmental Protection, and Policy director generals argued to the assistant deputy minister to re-establish it, and the Canadian Petroleum Products Institute Project, *and* not establish the Imperial Oil Project. But what did government experts know?

It is important to note that some participants in the Environment Canada and other projects continued to question whether experts from certain organizations or in

certain disciplines should or could be involved in determining environmental priorities, and how they should be involved. First, the Interdepartmental Committee - including the Industry economist - argued to the Memorandum of Understanding Steering Committee that benefit-cost analysts should not decide Canadian environmental priorities (vs other economists, who should). Second, the Conservation & Protection/Environmental Protection director general, Corporate Policy director general, and first Conservation & Protection/Policy director argued to Conservation & Protection/Ecosystem Sciences that other federal departments - including their experts - should not help decide Environment's priorities. Then Ecosystem Sciences argued to the Environmental Protection director general, Corporate Policy director general, and Policy director that the departments should help. Third, the Environment Canada Project coordinator questioned the Environment Canada Project manager whether Hickling *and* CanTox experts could help. Fourth, the Corporate Policy director general questioned the Ecosystem Sciences director general, Environmental Protection director general, and Policy director whether Environment - including their experts - would agree that risk assessors should help. Then the coordinator questioned the manager the same. Finally, the manager, Environmental Protection/Regulatory Affairs director, Environmental Protection/Industrial Programs chief, and Policy director questioned the Ecosystem Sciences, Environmental Protection, and Policy director generals whether Hickling experts should help decide Environment's priorities. Then the Ecosystem Sciences, Environmental Protection, and Policy director generals questioned the Conservation & Protection assistant deputy minister the same.

Generally, however, the participants all still seemed to agree that at least some experts (Environment experts, not benefit-cost analysts) knew best about the science of determining priorities.

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#### NOTES

<sup>1</sup> Conservation & Protection/Ecosystem Sciences/Conservation/Environmental Economics Section head to Environment Canada Project manager, memo of November 6, 1992, "Comments on Priority Setting Meeting of 6 November, 1992," copied to Environment Canada Project coordinator; Health & Welfare Canada, Health Protection Branch, Environmental Health Directorate, Bureau of Radiation & Medical Devices, "Proposed Activity Evaluation and Priorization Framework for Non-Ionizing Radiation Emitting Devices: For Financial Planning Period Commencing in Fiscal Year 1991-92," November 5, 1991, 1.

<sup>2</sup> Conservation & Protection/Policy director general to Conservation & Protection/Ecosystem Sciences director general and Conservation & Protection/Environmental Protection director general, memo of November 10, 1992, "Tel que convenu..."; Conservation & Protection assistant deputy minister to Environment deputy minister, draft memo, "Approach to Priority-Setting."

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<sup>3</sup> Environment Canada Project manager to Risk Assessment & Work Prioritization Working Group, memo of November 16, 1992, "Please find attached..."; Conservation & Protection/Ecosystem Sciences director general to Conservation & Protection assistant deputy minister, memo of November 25, 1993, "Priority Setting and Risk Assessment"; Environment Canada Project manager, "Risk Assessment/Risk Management and Work Prioritization," November 16, 1992, 1-3; Conservation & Protection/Environmental Protection/Regulatory Affairs economist, briefing note of November 27, 1992, "Federal response to ACEP re: [Imperial Oil senior manager's] 'Setting Priorities for Environmental Protection: An Action Plan'"; Environmental Priorities Working Group, "Environmental Priority Setting Methodology," August 1993, 3; Environmental Priorities Working Group, "Status of Action Items," April 16, 1993; Environmental Priorities Working Group, "Report," Draft #1, May 12, 1993, 2.

See also H.A. Zogg, "Zurich" Hazard Analysis: A Brief Introduction to the "Zurich" Method of Hazard Analysis, Zurich Insurance Group - Risk Engineering, 1987.

<sup>4</sup> Conservation & Protection/Ecosystem Sciences director general to Environment Canada Project manager, memo of November 18, 1992, "Risk Assessment Project"; Environmental Protection/Response Assessment senior advisor, interview, June 25, 1995; Conservation & Protection/Environmental Protection/Regulatory Affairs economist; Conservation & Protection/Environmental Protection/Regulatory Affairs director to Environment Canada Project manager, memo of November 18, 1992, "Delegates for the Priority Setting-Risk Assessment Committee"; Conservation & Protection/Ecosystem Sciences director general to Environment director generals at November 6, 1992 meeting, draft memo of December 4, 1992, "Environment Canada Framework for Priority Setting."

<sup>5</sup> Conservation & Protection assistant deputy minister to Environment deputy minister, draft memo, "Approach to Priority-Setting"; Conservation & Protection assistant deputy minister to Environment deputy minister, memo of November 20, 1992, "Approach to Priority-Setting," copied to Corporate Policy assistant deputy minister; second Conservation & Protection/Ecosystem Sciences/Strategic Planning chief to Environment Canada Project manager, memo of November 24, 1992, "Approach to Priority-setting."

<sup>6</sup> Industry assistant deputy minister to Conservation & Protection assistant deputy minister, letter of December 18, 1992, "ACEP Proposal on Priority Setting"; Conservation & Protection/Environmental Protection/Regulatory Affairs economist; Environment Canada Project coordinator, information note of November 24, 1992, "Advisory Committee on Environmental Protection: An Action Plan for Setting Priorities for Environmental Protection"; Conservation & Protection/Environmental Protection/Regulatory Affairs chief to Industry/Environmental Affairs/Regulatory Affairs director, first Health/Health Protection director, and Environment Canada Project manager, memo of November 27, 1992, "Priority setting - Briefing note"; Environment Canada Project coordinator, notes of Conservation & Protection Priority Setting meeting of December 7, 1992.

<sup>7</sup> Environment Canada Project coordinator, information note of November 24, 1992; Conservation & Protection/Ecosystem Sciences director general to Conservation & Protection assistant deputy minister.

<sup>8</sup> Conservation & Protection/Policy director general to Environment Canada Project manager, memo of November 30, 1992, "Priority Setting"; Environment deputy minister to Conservation & Protection assistant deputy minister, memo of November 30, 1992, "good initiative. Thanks."

<sup>9</sup> Conservation & Protection/Ecosystem Sciences director general to Environment director generals at November 6, 1992 meeting; Conservation & Protection/Ecosystem Sciences/Conservation, "Priority Setting: Screening and Assessment of Ecosystem Risks," Draft, November 30, 1992, 1, 3-4, 5, 6.

<sup>10</sup> Industry assistant deputy minister to Conservation & Protection assistant deputy minister; Conservation & Protection/Ecosystem Sciences director general to Conservation & Protection assistant deputy minister; Environmental Priorities Working Group, "Report," Appendix 3, "Working Group on Environmental Priorities: Work Plan."

<sup>11</sup> Conservation & Protection assistant deputy minister to Conservation & Protection/Environmental Protection director general and Conservation & Protection/Ecosystem Sciences director general, memo of December 2, 1992, "I would like..."; Environment Canada, Corporate Policy Group, *Environmental Consultations Calendar*, October 1992, 11, 25; first Conservation & Protection/Policy director to Distribution List, fax of December 4, 1992; first Conservation & Protection/Policy director to Distribution List, memo of December 4, 1992; draft agenda of Priority Setting meeting of December 7, 1992; Environment Canada, Communications & Consultations Directorate, Consultations Division, *Environmental Consultations*

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*Calendar*, November 1993, 39; Environment Canada Project coordinator, notes of Conservation & Protection Priority Setting meeting of December 7, 1992.

<sup>12</sup> Conservation & Protection/Ecosystem Sciences director general to Environment director generals at November 6, 1992 meeting; Environment Canada Project manager to Conservation & Protection/Ecosystem Sciences director general, memo of December 4, 1992, "Review of Request for Participation of other Federal Directorates"; Conservation & Protection/Ecosystem Sciences director general to other federal department director generals, draft memo of December 4, 1992, "Environment Canada Framework for Priority Setting"; and Conservation & Protection/Ecosystem Sciences director general to Environment director generals not at November 6, 1992 meeting, draft memo of December 4, 1992, "Environment Canada Framework for Priority Setting."

<sup>13</sup> Conservation & Protection/Ecosystem Sciences director general to Conservation & Protection assistant deputy minister; second Petro-Canada senior manager to Environmental Priorities Working Group, memo of March 29, 1993, "For discussion at..."; Environment Canada Project coordinator, notes of Conservation & Protection Priority Setting meeting of December 7, 1992; second Energy director and Sunoco senior manager, Competitiveness Issues Working Group, Draft Report, June 4, 1993, 1.

<sup>14</sup> Environment Canada Project coordinator, notes of Conservation & Protection Priority Setting meeting of December 7, 1992, 2; Conservation & Protection/Ecosystem Sciences, Conservation & Protection/Environmental Protection, and Conservation & Protection/Policy overheads for Conservation & Protection assistant deputy minister briefing of December 21, 1992, "Priority Setting"; first Conservation & Protection/Policy director to Distribution List, memo of December 4, 1992; Industry assistant deputy minister to Conservation & Protection assistant deputy minister.

<sup>15</sup> Draft agenda of Priority Setting meeting of December 7, 1992; Environment Canada Project coordinator to CETESB, fax of December 7, 1992; Environment Canada Project coordinator, notes of Conservation & Protection Priority Setting meeting of December 7, 1992; "Briefing of ADM on Several Issues"; Environmental Protection/Response Assessment senior advisor, interview; Conservation & Protection/Ecosystem Sciences/Conservation, "Priority Setting: Ecosystem Risk Assessment," December 9, 1992.

<sup>16</sup> Conservation & Protection/Ecosystem Sciences/Conservation, "Priority Setting: Ecosystem Risk Assessment," 1; Environment Canada Project manager to first Conservation & Protection/Policy director, first Conservation & Protection/Environmental Protection/Industrial Programs director, and Environmental Protection/Regulatory Affairs director, memo of December 16, 1992, "Priority Setting Exercise - Briefing for Conservation & Protection ADM, December 23, 1992, at 14:00 hours," copied to Corporate Policy director general, second Policy director, Industrial Programs chief, Regulatory Affairs chief, and Corporate Policy director; Conservation & Protection/Environmental Protection/Regulatory Affairs director to Environment Canada Project manager, memo of December 17, 1992, "Priority Setting Exercise DECK - Briefing"; Environment Canada Project manager to Conservation & Protection/Environmental Protection/Regulatory Affairs director, memo of December 23, 1992, "Priority Setting Exercise - Development of the DECK."

<sup>17</sup> Industry assistant deputy minister to Conservation & Protection assistant deputy minister, letter of December 18, 1992, "ACEP Proposal on Priority Setting."

<sup>18</sup> Environment Canada Project manager to first Conservation & Protection/Policy director, first Conservation & Protection/Environmental Protection/Industrial Programs director, and Environmental Protection/Regulatory Affairs director; Environment Canada Project manager to Conservation & Protection/Environmental Protection/Regulatory Affairs director; Conservation & Protection/Ecosystem Sciences, Conservation & Protection/Environmental Protection, and Conservation & Protection/Policy; "Briefing of ADM on Several Issues"; Conservation & Protection/Ecosystem Sciences director general to Environment Canada Project manager; Environment Canada Project manager to Conservation & Protection/Policy director general, first Conservation & Protection/Environmental Protection/Industrial Programs director, and Environmental Protection/Regulatory Affairs director, memos of December 23, 1992, "Core Working Group for Environmental Priority Setting Initiative"; Environmental Protection/Response Assessment senior advisor, interview.

**PART II**  
**THE SCIENCE OF SCIENCE-BASED POLICY MAKING**

**CHAPTER 4**  
**IMPLEMENTATION OF THE ENVIRONMENT CANADA PROJECT PLAN**

In this chapter, I discuss the influence that government experts had in the *third* process of re-establishing the Environment Canada Project as a priority for Environment, and the *first* process of re-establishing it for Environment and other federal departments. The third process began in December 1992 and ended in May 1993 when the Policy Advisory Committee approved the Project plan. And the first process began in April 1993 and ended in June 1993 when the Director General Steering Committee approved Phase 1 of the plan (to develop the Environment Canada process).

During this six month period, several other processes of determining environmental priorities occurred. The process of not establishing the Imperial Oil Project for Environment and Industry ended, the process of not establishing the Interdepartmental Committee Project for Environment and Industry ended, and the process of re-establishing the Canadian Petroleum Products Institute Project for Environment and other federal departments (and others) continued. I also discuss in this chapter the influence that government experts had in these processes.

I show that the Industry economist and Conservation & Protection/Environmental Protection/Regulatory Affairs economist seemed to have a major (deciding) influence on the decision by the Memorandum of Understanding Steering Committee not to establish the Imperial Oil Project for Environment and Industry. I suggest that the economists had a major influence because they were asked for advice and offered it. I also suggest that their major influence did not make a significant difference to determining "good" environmental priorities because the Committee knew as much as they did about the science of deciding priorities (and the administration and policy of it).

Secondly, I show that the Industry economist and Regulatory Affairs economist seemed to have no influence on the decision by the Memorandum of Understanding Steering Committee not to establish the Interdepartmental Committee Project for Environment and Industry. I suggest that the economists had no influence because although they offered advice to the Committee, they were not asked for it by them. I also

suggest that their lack of influence did not make a significant difference because the Committee knew more than they did about the science of deciding priorities.

Thirdly, I show that government experts seemed to have no influence on the decision made by the Policy Advisory Committee to re-establish the Environment Canada Project for Environment. I suggest that experts had no influence because either they were not asked for advice or did not offer it. I also suggest that their lack of influence did not make a significant difference because the Committee knew as much as (or more than) they did about the science of deciding priorities.

Finally, I show that one Conservation & Protection/Ecosystem Sciences/Wildlife Research natural scientist, Ecosystem Sciences/Strategic Planning economist, Ecosystem Sciences/Conservation/Ecosystem Risk Analysis economist, the Regulatory Affairs economist, one Conservation & Protection/Wildlife economist, the Corporate Policy economist, and one Environmental Protection/Industrial Programs engineer seemed to have a minor influence on the decision made by the Director General Steering Committee to re-establish the Environment Canada Project for Environment and other federal departments. One Agriculture economist seemed to have a major influence. And other government experts seemed to have no influence. I suggest that the natural scientist; Strategic Planning, Ecosystem Risk Analysis, Regulatory Affairs, Wildlife, and Corporate Policy economists; and engineer had only a minor influence (not a major one) because either they were not asked for advice by the Committee or did not offer it to them. The Agriculture economist had a major influence because either basically he was asked by the Committee or offered it to them. And other government experts had no influence because either they were not asked (by anyone) or did not offer (to anyone). I also suggest that the minor influence by the natural scientist; Strategic Planning, Ecosystem Risk Analysis, Regulatory Affairs, Wildlife, and Corporate Policy economists; and engineer on the decision did not make a significant difference because the Committee - including the Agriculture economist - knew more than they did about the science of deciding priorities. The major influence by the Agriculture economist did not make a significant difference because the Committee knew as much as he did about the science. And the lack of influence by other government experts did not make a significant difference because the Committee knew as much as (or more than) they did about the science.

### Policy Advisory Committee Approval of the Plan

In this section, the third process of re-establishing the Environment Canada Project as a priority for Environment began and ended. Several other processes of determining environmental priorities intersected with this one, including those establishing, re-establishing, and ending the Environment Canada, Imperial Oil, Interdepartmental Committee, Canadian Petroleum Products Institute, Corporate Policy, and Environment Canada-Canadian Petroleum Products Institute projects for Health, Industry, Environment, other federal departments, the Canadian Petroleum Products Institute, two environmental groups, and Advisory Committee on Environmental Protection. Indeed, re-establishing the Corporate Policy Project collided with this process.

Specifically, the Environment Canada Project manager advised the Conservation & Protection/Policy director general, Conservation & Protection/Environmental Protection/Industrial Programs director, Environmental Protection/Regulatory Affairs director, and a Corporate Policy director general to re-establish the Environment Canada Project; and a Health/Health Protection director general to establish it. And the Core Director Working Group advised the Conservation & Protection assistant deputy minister (via the manager) to re-establish it, and to advise the Industry assistant deputy minister to establish it. The Conservation & Protection assistant deputy minister then advised the Industry and Health Protection assistant deputy ministers. Then the Memorandum of Understanding Steering Committee did not establish the Imperial Oil or Interdepartmental Committee projects for Environment and Industry.

Conservation & Protection advised the Environmental Priorities Working Group - including the Energy senior economist and Health Protection biostatistician - (via the manager) that the Environment Canada Project should be established (and the Canadian Petroleum Products Institute Project ended). The Environmental Priorities Working Group did not advise the Petroleum Products Industry Task Force to end the Canadian Petroleum Products Institute Project. And the Core Director Working Group advised the Conservation & Protection assistant deputy minister to advise other Environment (Atmospheric Environment, Parks, and Corporate Policy) assistant deputy ministers to re-establish the Environment Canada Project, and other federal department (Transport, Health Protection, Industry, Energy, and Finance) assistant deputy ministers to establish it. The Conservation & Protection assistant deputy minister then advised



them, and set up the Director General Steering Committee to advise whether Environment should re-establish it (use the Environment Canada process).

Conservation & Protection advised the Advisory Committee on Environmental Protection (via the Conservation & Protection/Ecosystem Sciences director general) to establish the Environment Canada Project. And the Environment Canada Project coordinator advised the Core Director Working Group to advise more federal department (Agriculture, Fisheries, and Forestry) assistant deputy ministers to establish it. Then the other Environment assistant deputy ministers re-established it for Environment, and other federal department assistant deputy ministers established it for other federal departments.

The manager and coordinator (via the manager) advised the Conservation & Protection assistant deputy minister to re-establish the Environment Canada Project. The coordinator questioned whether the Canadian Petroleum Products Institute Project should be re-established, and advised that government should establish the Environment Canada-Canadian Petroleum Products Institute Project (to develop and use the Environment Canada and Canadian Petroleum Products Institute processes to determine petroleum products industry environmental priorities - the Environment Canada-Canadian Petroleum Products Institute process). The manager argued to a Corporate Policy director that the Corporate Policy Project should be ended, and the Environment Canada Project should be re-established. Ecosystem Sciences/Conservation advised the Core Director Working Group to advise Fisheries and Agriculture to establish the Environment Canada Project. A Hickling project manager advised the Corporate Policy director general to re-establish the Corporate Policy Project (use the Hickling process). The Core Director Working Group advised the Conservation & Protection assistant deputy minister (via the manager) to advise the Fisheries and Agriculture assistant deputy ministers to establish the Environment Canada Project. The Conservation & Protection assistant deputy minister then advised the Fisheries assistant deputy minister. The Core Director Working Group (via the manager) advised other Environment (Conservation & Protection, Corporate Policy, Atmospheric Environment, and Parks), other federal department (Industry and Energy), and International Joint Commission directors to make the Environment Canada Project a priority. The manager advised the Ecosystem Sciences director general to advise the Director General Steering Committee to re-establish it. The coordinator questioned whether Environment should re-establish the Canadian Petroleum Products Institute

Project. And Conservation & Protection advised the Policy Advisory Committee (via the manager) to re-establish the Environment Canada Project. Then the Policy Advisory Committee did so for Environment.

During these processes of determining environmental priorities, several arguments emerged and continued about whether a project itself should be a priority, who should be involved in deciding priorities more generally, how they should be involved, and the scope of a process for determining priorities. First, the Core Director Working Group argued to the manager that the Environment Canada process should determine more than pollution priorities. Second, the second Policy and Corporate Policy directors argued to the Core Director Working Group that the Policy Advisory Committee should determine now whether other federal departments should help decide Environment's priorities. Third, the manager argued to the Corporate Policy director that the Corporate Policy Project should be ended (vs the Environment Canada Project, which should be re-established) because neither quantitative risk assessors nor benefit-cost analysts (vs qualitative risk assessors and other economists) should help decide Environment's priorities. Finally, the manager argued to the senior economist that the public should help decide petroleum products industry environmental priorities (vs experts alone).

At this point, the manager resolved the argument about the Environment Canada process determining more than pollution problems. He recommended it not determine more. The Policy and Corporate Policy directors resolved the argument about the Policy Advisory Committee determining now whether other federal departments should help decide Environment's priorities. They decided that the Committee should determine this later. The Memorandum of Understanding Steering Committee resolved the arguments about not establishing the Imperial Oil Project; and industry, an advisory group, and benefit-cost analysts not deciding Canadian environmental priorities. They did not establish the Imperial Oil *or* Interdepartmental Committee projects for Environment and Industry; and decided that neither industry, an advisory group, nor benefit-cost analysts were to decide the priorities in the Interdepartmental Committee process. And the Environmental Priorities Working Group resolved the argument about ending the Canadian Petroleum Products Institute Project, and one (the Environment Canada) process determining Environment's priorities. They did not advise the Task Force to end it, and decided to develop the Canadian Petroleum Products Institute process. The other arguments were not resolved during this period, December 1992 to May 1992.

## Evidence

In late December 1992, the Environment Canada Project continued as Conservation & Protection started to implement Phase 1 of the Project plan, led by Conservation & Protection/Ecosystem Sciences.

*The Environment Canada Regulatory Review Project.* The Conservation & Protection/Environmental Protection/Regulatory Affairs chief and Environment Canada Project manager (the Conservation & Protection/Ecosystem Sciences/Conservation director) spoke several times about socioeconomic support. The chief asked the manager to identify resources that might be made available. The manager wrote the chief:

[Two Conservation staff] have been identified to [the Regulatory Review director], as being deployed to the Review as Project Leaders.

I have spoken with the [Ecosystem Sciences] Director General and we have identified certain projects that have unassailable priority within the Directorate - the personnel attached to these projects cannot be released at the moment, although if there were short term needs of a very specific nature that only they could perform, we might be able to meet the Review needs within our time frame...

The Director General has accepted that the release of other members... will affect the delivery of other projects and is prepared to accept that consequence.

The following, other "socio-economic" members... can be make available for full time deployment, effective immediately.<sup>1</sup>

*The Environment Canada Project.* The Environment Canada Project manager hoped to have the first Core Director Working Group meeting in early January, to "start the process of teambuilding, developing a workplan, and consultations with contributing [other federal department] directorates." The Conservation & Protection assistant deputy minister wanted to go to the Top of the House Committee with an action plan through the Policy Advisory Committee by the end of January. Conservation & Protection/Policy staff were asked to make the necessary arrangements.

**In late December, the manager advised the new Policy director general, Conservation & Protection/Environmental Protection/Industrial Programs director, Environmental Protection/Regulatory Affairs director, and Corporate Policy**

**director general to re-establish the Environment Canada Project as a priority, and the Health/Health Protection director general to establish it, as shown below.**

The manager invited the director generals and directors to join the Core Director Working Group or nominate a representative, and to attend the first Group meeting. (He copied his memos to the directors to the Environmental Protection director general.)

The manager sent the Environment Canada Project plan (the Conservation & Protection assistant deputy minister briefing) to the Corporate Policy director general and wrote him, "[Corporate Policy's] participation is vital to ensure that a comprehensive action plan is presented and that we build on your experience with the Hickling Contract."

The manager wrote the Health Protection director general, "We recognize the key role of [Health] in determining environmental priorities.... The most suitable candidate may be [the first Health Protection director]... due to his involvement with [the Advisory Committee on Environmental Protection]." (The rest of the memo was similar to the early December Conservation & Protection/Ecosystem Sciences director general's memo to other federal department director generals.)

At the end of December, the manager and Environment Canada Project coordinator drafted memos from the Conservation & Protection assistant deputy minister to other Environment and other federal department (Industry and Health) assistant deputy ministers inviting them to join the Environment Canada Project. The first Director General Steering Committee meeting was now to be held in early January.

By early January, Ecosystem Sciences/Conservation drafted a detailed plan for the Environment Canada Project, i.e., a seven-page work plan. They wrote:

The purpose was now to "develop a process with outputs to guide Minister and Department in setting response priorities for pollution problems resulting from socioeconomic activity," not environmental problems.

Advantages of the "priority setting framework" included:

- analysis will be based on best professional judgement and available data
- requires cross mandate and interdisciplinary cooperation....
- identifies current research and data collection needs - knowledge gaps

Regarding Project organization, the Director General Steering Committee was to obtain "buy-in of partners and stakeholders," and the Project Team were to "complete tasks based on skills and knowledge."

Regarding terms of reference, the Team were to include about 16 Environment (Conservation & Protection and Corporate Policy) and six other federal department (Health, Fisheries, Agriculture, Energy, Industry, and Transport) staff. Resource needs included: for scanning and scoping, a consulting contract to develop a matrix, and public opinion polls and analysis; for screening, a consulting contract to review protocols; and the "multidisciplinary stakeholder" workshop. Tasks and deliverables included:

- develop inventory of pollutants....
- emerging industry, scientific or public concern....
- convene multidisciplinary stakeholder workshop

**By the first Core Director Working Group meeting, Policy, Industrial Programs, Regulatory Affairs, Health Protection, and Industry joined the Group.**

They met to review the draft detailed Environment Canada Project plan. The manager, Policy director general, Industrial Programs chief (for the Industrial Programs director), Regulatory Affairs director, the first Health Protection director (for the Health Protection director general), Industry director, and other branch staff attended.

The Group discussed and decided:

- A draft memorandum... for [the Conservation & Protection assistant deputy minister's] signature to key [assistant deputy ministers] in [Environment] and [other federal departments] should be modified slightly before being presented to [the assistant deputy minister]....
- The... time frame for... Phase 1, i.e., having a conceptual framework scoped and partially calibrated by... early April is too ambitious given other workloads and the need to coordinate events such as the [Canadian Petroleum Products Institute] and [Advisory Committee on Environmental Protection] meetings. Probable completion is... early May....
- Draft [sic] of the Terms of Reference and memberships of the four... Project Teams was quickly reviewed....
- Discussions were held on the nature of the presentations [Environment] would make at [the Environmental Priorities Working Group] and [Advisory Committee on Environmental Protection] meetings scheduled for [late January] and [early February] respectively....
- Discussions were held regarding [an Environment] position to take with respect to two other Environmental Risk Assessment initiatives: [the Canadian Standards Association]... and the [International Joint Commission/Great Lakes] group [in early February].

It was decided that the same [overheads]... would be used.

- The [overheads]... along with the critical path and... Terms of Reference would form... the presentation to [the Policy Advisory Committee] and Top of the House.
- Timing of a presentation... is most likely to be end of February.

An Association Technical Committee was preparing a guideline on environmental risk assessment by now. (I joined the Technical Committee in July 1993.) The Commission was sponsoring a workshop on risk assessment.

**The Working Group argued that the Environment Canada process should determine more than pollution priorities, as shown below by an excerpt from the manager's meeting notes. Also shown, the manager resolved the argument. He recommended the process not determine more.**

"We are constrained to pollution, has potential for narrowed to a pollution [Conservation & Protection] type of thing with possibility for use more broadly... pollution does affect you."<sup>2</sup>

*The Canadian Petroleum Products Institute Project.* **The Petroleum Products Industry Task Force sent their interim report on the Canadian Petroleum Products Institute and Competitiveness projects, called Towards the Economic and Environmental Sustainability of the Canadian Petroleum Products Industry, to Environment and other federal department (Health, Industry, Energy, Transport, and Finance) deputy ministers.** The Task Force wrote the deputy ministers, "The Task Force strongly believes that actions to meet environmental goals must be prioritized, and that such prioritization is a key element in a broader decision-making framework."<sup>3</sup>

*The Environment Canada Project.* In mid-January, the Environment Canada Project manager updated the Conservation & Protection assistant deputy minister (and copied the Conservation & Protection/Ecosystem Sciences and Conservation & Protection/Environmental Protection director generals) on the Environment Canada Project.

**By now, Corporate Policy (a director) joined the Core Director Working Group.**

The manager and Environment Canada Project coordinator revised the Conservation & Protection assistant deputy minister's draft memos to other Environment and other federal department (Health/Health Protection, Industry, and Energy) assistant deputy ministers. The coordinator added the Energy assistant deputy minister, and wrote the manager, "Other Environment... [assistant deputy ministers]... don't need to know our woes with [the Advisory Committee on Environmental Protection]." The first

Director General Steering Committee meeting was now to be held in early February. The coordinator sent the draft memos to the Working Group for review (and copied a Corporate Policy economist).

The coordinator revised the draft detailed Environment Canada Project plan, i.e., drafted a critical path. Tasks included:

- Develop methods for scanning & scoping... 50-60 pollutants....
- Inventory current commitments (policy & regulatory agenda)... Green Plan, [Canadian Environmental Protection Act - Priority Substances], [Accelerated Reduction/Elimination of Toxics], AAQ's, WQS' etc.....
- Develop common approach to scoping pollution problems... [Conservation & Protection/Ecosystem Sciences/Eco-Health] Ecoscan Project (Rawson Academy)....
- Characterize pollution problems... Profiles will be developed for 5-6 pollutants....
  - settings, pathways and fate processes... State of art review - Cantox....
  - significance of effects... State of art reviews - Cantox, Hickling etc.....
- Host multidisciplinary stakeholder workshop

Phase 1 was now to be completed by mid-June, not May.

**Health, Industry, and Environment established the Accelerated Reduction/Elimination of Toxics Project, "a multi-stakeholder consultation process to speed up the reduction or elimination of toxics through a new consensus approach to develop voluntary industry actions," as a priority for themselves by February 1992.** A subcommittee called Short Term Accelerated Realistic Targets proposed a few substances and reduction actions as a "pilot" for the process. Environmental Protection/Pollution Prevention was the lead for Environment.

Conservation & Protection established the EcoScan Project as a priority for Environment by now. Eco-Health contracted the Rawson Academy, a consulting company (and Advisory Committee on Environmental Protection member), to develop "a method for identifying emerging threats to the aquatic ecosystem."

The coordinator then sent the draft detailed plan to the Working Group, Corporate Policy economist, and a Conservation & Protection/Policy analyst.

**At the second Core Director Working Group meeting, the second Policy and Corporate Policy directors argued that the Policy Advisory Committee should determine now whether other federal departments should help decide Environment's priorities, as shown below by excerpts from a Policy director's memo. Also shown, the directors resolved the argument. They decided that the Committee should determine this later.**

The Group met to review the draft detailed plan, i.e., the critical path and terms of reference.

After the meeting, the Policy director wrote the manager (and copied the Policy director general and Group) to confirm Policy's role in the "Priority Setting Methodology Exercise" and to clarify the concerns that she raised.

Regarding Policy's role, the director general was to represent them on the Director General Steering Committee (instead of the Group), the Policy director was to join the Group, and a second Policy analyst (an economist) was to join the Project Team.

Regarding her concerns, the Policy director wrote:

The exercise should be identified as "Development and Validation of a Priority Setting Methodology". This is more accurate than "Priority Setting Framework" and should make the scope... clearer to all. This should also help to alleviate any concerns of those not directly involved at this stage that it will culminate in June with a new set of federal priorities with respect to pollution intervention.

I see three benefits of identifying the more comprehensive critical path I described (i.e. plotting other priority setting exercises including... Hickling, and... [Priority Substances List 2]):

- it identifies to all concerned that there is an awareness of these other exercise; therefore avoiding immediate assumption of chaos and duplication;
- it allows the group to readily identify opportunities to merge or dovetail initiatives (e.g. [Advisory Committee on Environmental Protection] and/or [Canadian Petroleum Products Institute] into this exercise);
- it allows us to take advantage of opportunities to merge outputs from one initiative into another (e.g., Hickling into this; or how this may in the long term affect other exercises, e.g., assessment of [Priority Substances List 2]).

...The work of the Project Teams... may be substantially scoped down by building on existing priority setting methodologies. In particular, the... Team... dealing with characterization should... be building from the characterization/assessment work underway in [the Priority Substances 1 Project]. Several... reports are completed or very near completion and it should be noted that these are externally peer reviewed reports....

The... Team on scanning and scoping could... evaluate... [Accelerated Reduction/Elimination of Toxics-Short Term Accelerated Realistic Targets] and... [Priority Substances 1 and 2] to develop more rigorous and widely applicable problem identification techniques. The task of scanning 50-60 pollutants in this exercise is... unnecessarily demanding in the time frame available, particularly if one is to... identify such factors as current total expenditures.

With respect to the... Team on applying the criteria and weighting, this is where the integration of values, perceptions and attitudes with scientific (un)certainly comes into the methodology. ...The current membership... does not adequately reflect the necessary skills from the social science side. I would like to see Policy... efforts here rather than organization of the workshop... ...Someone from [Conservation & Protection] Communications... should be involved here as well as on the scoping and scanning... Team.



At this point, I do not feel that the [Working Group] needs to spend further time discussing the technical scope of the... Teams... However, the [Group] should be clearly indicating the extent to which we expect the... Teams to be evaluating/adopting existing methodologies used by the department versus developing new methodologies.

...[The Corporate Policy director] advised me that it is not possible to advance the [Policy Advisory Committee] meeting from the [late January] date. As neither you nor [the Ecosystem Sciences director general] are available..., [the director] and I agreed to back off of our concern that this go to [the Committee] before further external discussions. ...As long as in all communication... this exercise is very clearly described as development and validation of a methodology at this stage, I feel presentation to [the Committee] can wait to early February. However, I suggest you have bilateral information sessions with [an Atmospheric Environment representative] and [Science Advisor representative] in advance...

It may be particularly important to talk to [Atmospheric Environment] as [a Policy strategic planner] has just brought to my attention that the [assistant deputy ministers] of [Atmospheric Environment] and [Conservation & Protection] recently met to discuss better integration of business planning for air issues which will no doubt result in re-assessment of priorities.

**Conservation & Protection and Health Protection contracted CanTox to help develop the Environment Canada process by conducting "a state of the art review and evaluation of scientific approaches used to characterize and screen pollution problems and to set environmental priorities."** (Health Protection offered and contributed the money.) CanTox was to prepare a reference document and recommend relevant concepts and approaches for developing a comprehensive "priority setting process."

Ecosystem Sciences/Conservation drafted overheads for the Canadian Petroleum Products Institute, Advisory Committee on Environmental Protection, Canadian Standards Association, and International Joint Commission meetings.

At the third Core Director Working Group meeting, the Group revised the draft detailed Environment Canada Project plan, i.e., the overheads. The Group wrote:

Regarding Project organization, the Director General Steering Committee was now to include Agriculture and "stakeholders."

The time frame for Phase 1 included the multidisciplinary workshop by May 1993; and write-up, and extended consultation and review by June 1993.

The Project Team were now to include Forestry.

And participation strategies included:

Stakeholders (eg. [Advisory Committee on Environmental Protection], [Canadian Petroleum Products Institute])

- present [Environment] approach

- invite member participation...
  - regular progress reports
- Expert groups (eg. [Canadian Standards Association], [International Joint Commission])
- inform of approach
    - encourage [Association] to focus on industry self-assessment guideline
    - use [Commission] as source of expertise and data

(The manager wrote a note on the overhead that it was not to be used at the meetings.)<sup>4</sup>

In late January, a Memorandum of Understanding Steering Committee meeting was held. **Before the meeting, the Core Director Working Group advised the Conservation & Protection assistant deputy minister (via the Environment Canada Project manager) to re-establish the Project as a priority for Environment, and to advise the Industry assistant deputy minister to establish it, as shown below by excerpts from a manager's briefing note.** The Environment Canada Project coordinator's late November information note was attached.

Regarding background, the manager wrote the assistant deputy minister:

Suggestions have been made... by various stakeholders... that [Environment] should prioritize [sic] its program to manage pollution related environmental issues to facilitate industry response and planning.

It became apparent, following investigation and exchanges of information, that a number of priority setting activities are underway, both internal and external to [Environment].

External activities... which could influence [Environment] management decisions are [Canadian Petroleum Products Institute], [Advisory Committee on Environmental Protection], [International Joint Commission/Great Lakes] and [Canadian Standards Association]. A significant number of internal priority setting activities are also taking place between [Headquarters] and the Regions - some based on regional concerns, some on sector (industry) concerns, and others on pollutant or substance concerns.

It is unlikely that these activities will result in common approaches or compatible results, and the Department will continue to be criticized for not prioritizing [sic] its issue management activities.

The [Environment] Deputy Minister has tasked [Conservation & Protection] with responding to this situation.

Regarding current status, the manager wrote:

A policy decision within [Conservation & Protection] has been taken to attempt to bring all these initiatives together and to coordinate departmental responses and activities....

The Working Group has developed a proposed strategy for coordinating [Environment's] activities (internally and externally) and has planned a process for developing a framework for priority setting.

The time frame for completion of this strategy is consistent with the planned time-frames of the external activities.

The path forward included: Phase 1, "develop a framework and methodology with key stakeholder groups," by May 1993; Phase 2, "expose it to extended consultation with other stakeholders and the provinces," by October 1993; and Phase 3, "operate the framework and methodology to provide the Minister and the Department with a list of priorities for management," by December 1993.

For Phase 1, the strategy included formally inviting other federal department assistant deputy ministers to participate; Industry, Health/Health Protection, Finance, Energy, and Transport assistant deputy ministers immediately, and Agriculture and Fisheries shortly.

For Phase 2:

The Strategy has been confirmed, but the process to do so has not been developed.

A number of options exist which will be developed and assessed during the phase one process. These include, but are not limited to:

- asking [the Canadian Council of Ministers of the Environment] to act as a forum, possibly... with the Institute for Risk Research;
- asking [the Major Industrial Accidents Council of Canada], a multi-stakeholder [non-government organization] already in risk management activities, to lead a wider consultation; and
- publishing a Departmental Discussion Paper and seeking comments.

(The Institute for Risk Research submitted a proposal to develop a science-based process for determining environmental protection priorities to the Advisory Committee on Environmental Protection in early November 1992.) The Major Industrial Accidents Council was a "voluntary alliance" of federal, provincial and municipal governments, industry, labour, emergency response groups, public interest groups, and academia.

And for Phase 3, the strategy was:

Should the process result in the development of a priority setting framework and methodology with wide acceptance by stakeholders, environmental issues and pollution problems would be subjected to methodology and framework in order to present to the Minister a proposed priority set of issues and problems to be managed.

The departmental position was, "[Industry] (and [Health]) staff have participated in the development of this proposal and support it... Confirmation at the [assistant deputy minister] level should be obtained. It is not expected that [Industry] will have any significant difficulties with the proposal."

The manager drafted overheads for the Memorandum of Understanding Steering Committee meeting. Regarding participation strategies, he also wrote:

- [Advisory Committee on Environmental Protection]
- accepted [the Imperial Oil senior manager's] report in principle
  - [Environment/Health/Industry] response
    - commissioned CanTox report
  - CanTox recommended
    - a similar approach to proposed [Environment] Priority-Setting initiative
    - a state-of-art review of scientific screening and rating protocols....
  - expectation
    - [the Committee] buys-in and participates
    - Priority-Setting report goes back to [the Committee]... in May [Canadian Petroleum Products Institute]....
  - possible responses
    - ignore [Environment] proposal and proceed
    - recommend suspending own work
    - accept invitation to participate in [Environment] initiative (scan & characterize [Institute] related issues, provide these as inputs, and participate in ranking and weighting)

**At the Memorandum of Understanding Steering Committee meeting, the Conservation & Protection assistant deputy minister advised the Industry assistant deputy minister (and Health Protection assistant deputy minister) to establish the Environment Canada Project as a priority, as shown below. Also shown, the Committee resolved the arguments about not establishing the Imperial Oil Project for Environment and Industry; and industry, an advisory group, and benefit-cost analysts not deciding Canadian environmental priorities. They did not establish the Imperial Oil or Interdepartmental Committee projects; and decided that neither industry, an advisory group, nor benefit-cost analysts were to decide the priorities in the Interdepartmental Committee process.**

The Steering Committee met to finalize the agenda for the early February Advisory Committee on Environmental Protection meeting. The Health Protection assistant deputy minister, and manager also attended. The manager presented the Environment Canada Project. The Conservation & Protection assistant deputy minister discussed it with the Industry and Health Protection assistant deputy ministers.<sup>5</sup>

*The Canadian Petroleum Products Institute and Environment Canada projects.*  
**At the first Environmental Priorities Working Group meeting, Conservation & Protection advised the Group (via the Environment Canada Project manager) that**

**the Environment Canada Project should be established (and the Canadian Petroleum Products Institute Project ended) as a priority, as shown below. Also shown, the Group resolved the arguments about ending the Canadian Petroleum Products Institute Project, and one (the Environment Canada) process determining Environment's priorities. They did not advise the Petroleum Products Industry Task Force to end the Project, and decided to develop the Canadian Petroleum Products Institute process.**

The manager presented the Environment Canada Project. It was "favourably received." The agreement was they were to help each other develop their respective processes.

The Conference Board presented their Project "to assess feasible approaches for setting environmental priorities and standards within the context of Canadian public policy formation." They established it as a priority for themselves in October 1992.

**After the meeting, the Canadian Petroleum Products Institute did not join the Director General Steering Committee as the Environment Canada Project hoped. The manager (as directed by the Conservation & Protection/Ecosystem Sciences director general) and Environment Canada Project coordinator (as directed by the manager) joined the Working Group.<sup>6</sup>**

*The Environment Canada Project.* By the end of January, Phase 1 was to be completed by April 1993, Phase 2 by September 1993, and Phase 3 by November 1993.

As shown on pages 119 through 131, February and March were fully taken up by a series of presentations and briefings in different forums, meetings with managers of other initiatives, consultations with partners, and contributions to the Canadian Petroleum Products Institute Project.

In early February, the Environment Canada Project coordinator presented the Environment Canada Project at the International Joint Commission and Canadian Standards Association meetings. It was "favourably received."

A briefing note was prepared for the Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting in early March which recommended that the Canadian Standards Association "be offered encouragement and support to proceed" with the Environmental Risk Assessment guideline as an initiative that complemented Environment's "Priority Setting Project."

**By now, the Core Director Working Group advised the Conservation & Protection assistant deputy minister to advise other Environment (a new Atmospheric Environment, Parks, and Corporate Policy) assistant deputy ministers to re-establish the Environment Canada Project as a priority, and other federal department (Transport, Health/Health Protection, Industry, Energy, and Finance) assistant deputy ministers to establish it. The assistant deputy minister sent the draft detailed Project plan, i.e., the terms of reference, to the other assistant deputy ministers and advised them, as shown below. Also shown, the assistant deputy minister set up the Director General Steering Committee to advise whether Environment should re-establish the Project (use the Environment Canada process).**

The Conservation & Protection assistant deputy minister basically wrote the other assistant deputy ministers:

Concerns have been expressed by a variety of stakeholders about the number of pollution control initiatives crowding [Environment's] agenda and our collective ability to respond to emerging problems. [Conservation & Protection] has been asked by the [Environment] Deputy Minister to develop a comprehensive priority setting framework for the monitoring, assessment and management of environmental issues and concerns, identified through various departmental scanning activities. The development of this framework must of necessity recognize the severe constraints facing both industry and government which now limit our ability to achieve the goals set out in the Green Plan and to respond to emerging environmental problems. Although we intend to focus initially on "pollution" related concerns and issues, we would appreciate your views on the scope of the framework and any suggestions about other approaches to priority setting that you feel merit our consideration.

....I... request your cooperation and support by asking you to nominate someone to this [Steering] Committee, and if you think it appropriate at this time, to the... Working Group, and project teams.

The Conservation & Protection assistant deputy minister also wrote the Environment assistant deputy ministers:

We are anxious to start the process of team building, developing a workplan and consultations with contributing federal departments. A formal business plan, incorporating the views of team members and their respective directorates will be prepared for the consideration and review of the... Steering Committee at an early date. Once this plan has been reviewed and revised, I intend to have it presented to the Policy Advisory Committee and Top of the House Committee.

**At the fourth meeting of the Advisory Committee on Environmental Protection, Conservation & Protection advised the Committee (via the Ecosystem**

**Sciences director general) to establish the Environment Canada Project as a priority, as shown below by excerpts from an Environment Canada Project coordinator's information note.**

On the first day, a two-hour panel on "the role of science in priority setting" was held. Panellists included a Rhone-Poulenc Canada vice-president, University of Toronto associate professor, and Conservation & Protection/Ecosystem Sciences/Water Research director. A Pulp & Paper Research Institute of Canada senior director was moderator.

The second day, a half-hour session on "setting priorities for environmental protection" was held. The Conference Board senior director reported on the work of the Advisory Committee's Focus Group on Priority Setting. A CanTox principal presented an 11-page paper based on Setting Environmental Priorities for Canada: Issues and Strategies - A Preliminary Discussion, the report that he, a senior scientist, senior toxicologist, and other CanTox staff wrote for the Interdepartmental Committee. The principal told the Advisory Committee in his introduction:

There is no question that in Canada, as elsewhere, environmental issues are a matter of increasing public and scientific concern. Historical and current priorities for addressing concerns have been influenced by a number of factors, including available scientific knowledge, public perception, economics, political realities, and international initiatives. Further, addressing the vast number and complexity of environmental concerns is taxing available financial and societal resources, particularly under current economic conditions. These realities underscore the need to optimize the effectiveness of environmental initiatives in Canada through objective analysis and priority setting.

The large number of initiatives that have been undertaken to address this need underscores the recognition of its importance. Canadian and international efforts aimed at addressing environmental issues are exemplified by... international initiatives, including

- the Brundtland Report on Sustainable Development
  - the Montreal Protocol
  - the Rio Earth Summit
- and a number of specific Canadian initiatives, including
- the 1991 State of the Environment Report
  - the Green Plan
  - the State of Our Oceans Report
  - negotiations with the U.S. regarding cross-border air pollution

Significant progress has been made in Canada over the last few years with respect to addressing some environmental issues. However, it is recognized that further steps remain to be taken to provide a scientifically and socially acceptable degree of protection of the environment. It is my view that these steps should begin with the development of a system for identifying environmental issues critical to Canada, and for the priority ranking of our attack of these issues. Such a system

would optimize the balance between acceptable protection of the environment, sustainable socio-economic development, and the realities of finite financial and human resources....

....The information presented in the Green Plan and the 1991 State of the Environment Report provides a basis for starting this process.

The principal also told the Advisory Committee:

In developing an appropriate Canadian approach for issue identification and characterization, it is important to consider:

- the best available science....

In the United States, traditional risk assessment methodologies are being applied to prioritize environmental issues in a process known as comparative risk assessment. The numerous issues to be considered in conducting a comparative risk assessment have been discussed in the [Environmental Protection Agency] document entitled, "Road Map to Comparative Risk." Based on personal experience, it is my view that a quantitative approach based on traditional risk assessment paradigms will not work in Canada. There are several reasons for this....:

- Certain environmental problems... such as loss of wildlife habitat and resource depletion cannot be assessed using the traditional environmental risk assessment approaches used for chemical contaminants.
- Large volumes of data, much of it irrelevant to the prioritization process, will be available for some issues, while for others..., little data will exist....
- Traditional risk assessment methodology tends to produce overly conservative risk estimates, particularly when data gaps result in the adoption of default assumptions....
- The costs, data needed and time requirements for conducting quantitative risk assessments limits their application...

....Once an issue has been identified as high priority, quantitative risk characterization and assessment may be needed to assist in decision-making on specific remediation/mitigation procedures....

....I would like to list the features that need to be incorporated into the priority ranking system....

- The sources and degrees of uncertainty in the data should be understood...;
- The system must enable decision-making to proceed when limited data are available, while retaining information on the uncertainties involved;....
- The system must incorporate cost-benefit analysis in the comparison of potential impacts, and for various remediation alternatives;....
- The system must control the escalation of minor issues into major ones, unless there are supportable scientific, social and economic reasons....

An environmental priority ranking scheme must be functional, practical, adaptable and based on sound scientific principles. The framework I... propose... would encompass three phases:

- Phase I would apply an initial subjective screening process to categorize Canadian environmental issues;
- Phase II would use a qualitative risk evaluation process to rank the larger environmental issues;
- Phase III would be based on quantitative risk characterization and assessment processes, applied as necessary for the refinement of Phase II ranking and, for the evaluation or risk reduction strategies....



Although there is considerable work yet to be done, I am confident that the basic philosophy outlined will keep the process on the right track.

A half-hour session on "government priority setting" was held. The Ecosystem Sciences director general gave a short presentation on the Environment Canada Project. He said Environment was developing a "priority setting methodology" based on comparative risk assessment to respond to the Advisory Committee. They were advised that other initiatives underway were to require input and coordination from Environment, including the International Joint Commission Workshop on Risk Assessment, Canadian Standards Association/Environmental Risk Assessment Technical Committee, and Canadian Petroleum Products Institute Project. The director general invited the Advisory Committee to participate in the Project. His presentation was "favourably received."

A one-hour discussion on "priority setting" followed.

There was a consensus that work-in-progress should continue to be presented to [the Advisory Committee]. In particular, there was an undertaking to identify... the outstanding issues and use [the Committee] as a sounding board for progress in this area, perhaps including [Committee] members in a workshop.

- [the Committee] would continue to be directly linked to the process
- [the Committee] will be informed of milestones in this process
- products will be brought back to [the Committee] for comment
- all [Committee] members are welcome to participate in any special workshops to be held on this topic.

Environment... to determine progress in this area and establish the most effective ways of keeping [the Focus] Group informed of developments and opportunities for direct participation in the project teams, multi-stakeholder workshop.

...The [Conservation & Protection assistant deputy minister]... undertook to report regularly to [the Advisory Committee] on progress.

At the end of the meeting, the Industry assistant deputy minister led a discussion on Advisory Committee priorities. The priorities identified were Priority Setting, Regulatory Review, Economic Instruments, and the Legislative Framework on Pollution Prevention. The Committee were to be kept informed of the Organization for Economic Cooperation & Development/Pollution Prevention Control Group, National Pollution Prevention Strategy, and Canadian Environmental Protection Act Review. (All were items on the agenda for that meeting.)

The Conservation & Protection assistant deputy minister established the Legislative Framework on Pollution Prevention project as a priority for Environment in February 1993. He set up the Pollution Prevention Legislative Task Force to provide

recommendations on "the need for, the desirability of and the form of" a pollution prevention legislative framework. Their advice was to be considered during the Canadian Environmental Protection Act Review.

The Mulroney Conservatives established the Canadian Environmental Protection Act Review project as a priority for the federal government in 1988 when the Act was passed by Parliament. The Act itself required review by a Parliamentary committee of the administration of the Act within five years.

**After the meeting, the Advisory Committee did not join the Director General Steering Committee as the Environment Canada Project hoped.**

Ecosystem Sciences/Conservation revised the draft detailed Environment Canada Project plan (the terms of reference). They wrote:

Screen and Characterize....

Considerations....

- uncertainty and natural variability....

Ranking

- unbiased scientifically sound comparison of present and future risks

Considerations

- limited data required
- handle varying types and quality of data - judgemental, qualitative, quantitative

In late February, the Memorandum of Understanding Steering Committee held a conference call to discuss actions from the early February Advisory Committee meeting and plan for the early May meeting. After the call, the Conservation & Protection/Environmental Protection director general sent a list of action items to the Environment Canada Project manager (and others) and wrote them:

We have asked [the Advisory Committee]... to become involved in a number of important initiatives. ...To ensure that members have adequate time to analyze and consider the issues on the... agenda, it is important that members receive documentation well in advance of the meetings.

He also wrote on his memo, "We were criticized for not providing material enough in advance."

In early March, the Environment Canada Project coordinator concluded and recommended in an information note, "We will have to notify [the Advisory Committee] of the critical path for the project and circulate the terms of reference for the project teams as soon as possible."<sup>7</sup>

*The Canadian Petroleum Products Institute Project.* The second Environmental Priorities Working Group meeting was held. Before the meeting, the Environment Canada Project coordinator prepared a 10-page paper of questions which could be used to score and rank the health, ecological, and socioeconomic aspects of environmental issues. He submitted the paper as input for use by the Group. At the meeting, the Group decided to "use [the coordinator's] model (with some variations)" for Step 1 of the Canadian Petroleum Products Institute process.<sup>8</sup>

*The Environment Canada Project.* By this time, meetings had been held with managers of the Accelerated Reduction/Elimination of Toxics, Priority Substances List 2, and EcoScan projects to identify "common areas of interest and beneficial ways to collaborate."

The Conservation & Protection assistant deputy minister had accepted an invitation to co-chair a plenary session on Risk Assessment: Where to Go from Here? with a Nova Chemicals senior manager at a Risk Characterization Workshop in late June. The Environment Canada Project had also been invited to speak on establishing priorities for environmental action, "linking the science based paradigm of risk characterization to the world of risk management, to the reality of socioeconomic and political factors in decision-making." The Workshop was sponsored by the Canadian Chemical Producers Association (an Advisory Committee on Environmental Protection member).

The Association represents over 73 chemical manufacturing industries with over 200 plants across Canada. These plants produce more than 90 per cent of all chemicals in Canada. The Association also sponsors the Responsible Care® initiative, "a global effort aimed at addressing public concerns about the manufacture, distribution, use and disposal of chemicals."

In early March, the terms of reference and proposed composition of the Project Team were being finalized. A Health/Northern Health physician was seconded to Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis as a senior advisor to work on the health components of the Project. Meetings were to be set up the following week to discuss the proposed terms of reference and coordination of the Health project teams.<sup>9</sup>

*The Corporate Policy Project.* By now, Hickling drafted a report on the Hickling process.

Corporate Policy was attempting to develop a framework to establish priorities amongst a broad range of environmental issues (e.g., global warming, 12 percent protected space, toxics). They had done some in-house work in consultation with the Core Director Working Group and other areas of Environment.

Corporate Policy had provided a copy of the Hickling Report to the Environment Canada Project manager on the understanding that for now it was for internal discussion only. They expected the report to be finalized later in March, and intended to discuss it together with their in-house work at a Policy Advisory Committee meeting soon after.<sup>10</sup>

*The Environment Canada Project.* Corporate Policy and Conservation & Protection/Environmental Protection were to be contacted to discuss the draft Hickling Report and "the role of economic analysis in priority setting." Consideration was to be given to preparing a reference paper for use by the Socioeconomic project teams.

**The Environment Canada Project coordinator updated the Core Director Working Group on the Environment Canada and Canadian Petroleum Products Institute projects, and advised them to advise more federal department (Agriculture, Fisheries, and Forestry) assistant deputy ministers to establish the Environment Canada Project as a priority, as shown below by excerpts from the coordinator's briefing note.** The documents, "[Canadian Petroleum Products Institute] Principles" and "[Canadian Petroleum Products Institute] Process," were attached.

The coordinator recommended:

- Consideration be given to sending letters to Agriculture..., Fisheries..., and Forestry... requesting their support and participation.
- Considerations be given to the nature and extent of the involvement of provincial representatives, industrial stakeholders and environmental interest groups in the initial phases of the project.
- The timing of a presentation to the Policy [Advisory] and Top of the House committees be determined.

In mid-March, the Canadian Chemical Producers Association senior director wrote the Conservation & Protection assistant deputy minister (and copied the Conservation & Protection/Ecosystem Sciences director general):

...I understand that following the report on the government's prioritization activities, you indicated that [Advisory Committee on Environmental Protection] representatives

who wanted to be kept more directly informed... would be added to a mailing list... Please include [a second Association senior director] on that... list as [the Association] is very interested in the prioritization process and the work you are doing in this area, and in particular, how the risk characterization seminar... can be a useful tool in the government's prioritization work. I understand... that you will be participating... and this should assist in making the links between these projects. We have also had discussions with [the Environment Canada Project manager] to keep him informed about what we are doing in our... seminar which should provide another useful link between it and your broader prioritization initiatives.

Meanwhile, from the beginning to the end of March, the other Environment and other federal department assistant deputy ministers replied to the Conservation & Protection assistant deputy minister's invitation to join the Environment Canada Project. **The other Environment assistant deputy ministers re-established the Project as a priority for Environment, and other federal department assistant deputy ministers established it for the other federal departments, as shown below on pages 127 to 129. Other Environment and other federal department director generals joined the Director General Steering Committee.**

By early March, two replies out of eight were received and follow-up enquiries were made for the remainder. Six replies were received by mid-March.

At the beginning of March, the Energy assistant deputy minister wrote the Conservation & Protection assistant deputy minister, "[Energy] will be pleased to participate and will be represented by [a second director] whom you know from the [Canadian Petroleum Products Institute] priority setting exercise." He nominated two representatives to the Project Team.

The Finance assistant deputy minister wrote the Conservation & Protection assistant deputy minister, "We will be happy to participate... ..This department has had a keen interest in establishing priorities for the environment," and confirmed that a director was to represent them on the Steering Committee.

The Health/Health Protection assistant deputy minister wrote the Conservation & Protection assistant deputy minister, "We are pleased to participate," and nominated the Health Protection director general to the Steering Committee.

The Industry assistant deputy minister wrote the Conservation & Protection assistant deputy minister, "I am in general agreement with the proposed approach," and named representatives to the Steering Committee, Core Director Working Group, and Project Team (the executive, and former Conservation & Protection/Ecosystem

Sciences/Conservation/Environmental Economics head). The Industry assistant deputy minister also wrote:

Further working level support may be required..., and I expect [the Steering Committee and Working Group representatives] to provide... support as necessary.

This is a complex undertaking with many other interested sectors involved in priority setting and it will be a challenge to incorporate the number of viewpoints which exist or will be developed on the subject of priority setting of environmental issues.

I look forward to the development of a formal business plan.

In early March, the Atmospheric Environment assistant deputy minister wrote the Conservation & Protection assistant deputy minister:

Constructing a framework to help establish priorities in our complex and changing world is certainly a daunting task.

...We have been struggling with this from a somewhat different perspective than the one you outlined. We have been looking at what we need to do to "operationalize" the principles of sustainable development contained in the Green Plan and what this means for our priorities and the way we do business.

I have one over-arching comment on the proposed approach. ...The pollutant-by-pollutant approach... may not be entirely consistent with the comprehensive, integrated approach to atmospheric issues management that some provinces and Environment... have been pressing for in the Comprehensive Air Quality Management Agreement... I would hope that the basis for the Framework... might itself be up for discussion.

...We have been making good progress lately in developing an integrated, national, coordinated approach to managing atmospheric issues. I hope we can set our priorities together and continue in this constructive way. I would appreciate... a more detailed briefing as soon as possible. In the meantime, please have your official contact [a director general] in terms of the Steering Committee and [a director] in terms of the... Working Group.

The federal and provincial governments established the Comprehensive Air Quality Management Agreement project as a priority for themselves by now.

(The Conservation & Protection assistant deputy minister office sent the Atmospheric Environment assistant deputy minister's reply to the Ecosystem Sciences director general for action, the director general sent it to the Environment Canada Project manager to draft a response, the manager wrote comments on the memo and sent it to the coordinator to review, draft a response, and return to him.)

A Transport assistant deputy minister wrote the Conservation & Protection assistant deputy minister:

Your letter... was brought to my attention....

You may be aware of the dimensions of the challenge faced by major federal real property owners... in finding the resources to meet our environmental responsibilities. You may be assured therefore of our understanding of the importance of the work... and of our commitment to support it. I... look forward with great interest to the results.

He had asked a director general to represent Transport on the Steering Committee.

In mid-March, the Corporate Policy assistant deputy minister sent the draft Hickling Report to the Conservation & Protection assistant deputy minister "for your information," updated him on the Corporate Policy Project, and wrote:

Clearly, there is a lot of methodological work which needs to be done in this area. Your initiative will help to develop our capacity to assess costs, risks and benefits of departmental initiatives. At the same time, it represents a good opportunity for scientists, economists and others to work together on the task....

...A major challenge is to develop and implement a practical methodology for integrating economic considerations more fully into the priority setting process....  
...We have engaged Hickling... to prepare a paper outlining a practical methodological basis for using economic analysis as a means of establishing environmental policy priorities....

...The priority setting work which the department has embarked upon is extremely important in terms of ensuring that resources are allocated efficiently; and in responding to outside concerns that the Government's environmental initiatives appropriately take economic factors into consideration. My sense is that we should work together to develop a practical approach to departmental priority setting before engaging other departments and stakeholders. Therefore, I will be encouraging my staff to continue to participate in your priority setting exercise.

He nominated a new director general to the Steering Committee. (The former director general was now the Conservation & Protection/State of Environment Reporting senior economic advisor.)

Finally, in late March, a Parks director general wrote the Conservation & Protection assistant deputy minister, "We look forward to participating in this exercise." The Parks representative was to be a director.

Meanwhile, in mid-March, the Environment Canada Project was coordinating with the Canadian Petroleum Products Institute and other projects to "ensure the maximum of commonality or at least exchange of information."

The manager updated the Conservation & Protection assistant deputy minister on the Environment Canada Project. **The manager (and coordinator) advised the assistant deputy minister to re-establish the Project as a priority, as shown below by excerpts from a coordinator's information note.** The note was attached to a manager's memo.

The manager wrote the assistant deputy minister, "In spite of the fact February and March have been busy months for everyone in peripheral actions much has been achieved."

The coordinator concluded and recommended:

We will have to notify [the Advisory Committee on Environmental Protection] of the critical path for the project and circulate the terms of reference for the project teams as soon as the presentation has been made to [Environment's] senior management committees... Tentatively the first meeting of the [Director General] Steering Committee should be held by mid-April and the Multistakeholder Workshop by the... beginning of June.

(In a similar information note, not attached, the coordinator also concluded and recommended, "The requirement to proceed in a coordinated manner with due consideration for the interests of all, is making it very unlikely that the Workshop could be held in April.")<sup>11</sup>

*The Canadian Petroleum Products Institute Project.* At the end of March, the third Environmental Priorities Working Group meeting was held to review the draft Canadian Petroleum Products Institute process. By now, Group included the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis socioeconomic risk analyst and Health/Health Protection manager.

Before the meeting, the Step 1 Group, including the Energy senior economist, Pembina Institute executive manager, second Environmental Health director, Environment Canada Project manager, and the second Ultramar senior manager, drafted Step 1 of the process.

At the meeting, the Working Group discussed Step 1 and suggested revisions. The draft Canadian Petroleum Products Institute Project report was due by mid-May.<sup>12</sup>

*The Environment Canada Project.* The next meeting of the Core Director Working Group was to be held in late March to discuss the terms of reference for the Project Team; and hopefully to set dates for a presentation to the Policy Advisory and Top of the House committees, the first Director General Steering Committee meeting, and the multistakeholder workshop. But the Group was not to meet until mid-April.

By late March, CanTox was drafting a report on their state of the art review of "priority setting systems." The review was based on a bibliography and material provided by Conservation & Protection/Ecosystem Sciences/Conservation and material



CanTox had or obtained from the Northeast Center for Comparative Risk (the United States Environmental Protection Agency's "clearing house" in Vermont) in the time allocated.

(I took the Northeast Center's nine-day course on Comparative Risk and Public Policy in mid-July 1994, and attended the Western Center for Comparative Risk's three and a half day 1995 National Comparative Risk Conference for Practitioners in January 1995.)

CanTox reviewed 32 assessment systems and examined several factors, including degree of expert judgement required and uncertainty. CanTox was to recommend suitable approaches for the development of an "environmental priority setting system." The approach was likely to be a composite of the Environmental Protection Agency, Kennedy School of Government, NASA, and Zurich approaches.

A CanTox senior scientist sent the Environment Canada Project coordinator a draft of the appendix to their report. It included summaries of the 32 assessment systems. The senior scientist sent the draft to meet the deadline, although she realized the coordinator had some comments on the format. They had not arrived, and she had been unable to contact him over the last few days.

The coordinator met with the senior scientist to discuss state of the art "methods in priority setting." After, he sent his notes from their meeting and previous discussions to her, and wrote:

The priority setting process should provide... a qualitative basis for ranking pollution problems in terms of their risk reduction potential. It should be suitable for setting work priorities and budgetary planning purposes. Existing epidemiological and toxicological screening and assessment methods... are more suitable for use of regulators and in the design of control options...

...You should explicitly address... sources of uncertainty in your review. I will have the appendices of your report copied and circulated for review.

I agree that within the timeframe and resources we provided, it will not be possible for you to elaborate a scoring and weighting process.

The coordinator then recommended in an information note, "The reference document prepared by CanTox and their recommendations will be circulated [sic] for review... CanTox's recommendations should also be provided to [the Advisory Committee on Environmental Protection] for information."

By early April, Conservation revised the nine-page draft detailed Environment Canada Project plan, i.e., drafted a business plan. They wrote, regarding need:

Since the Green Plan, so many initiatives have been undertaken that concerns have been raised about these initiatives' affordability, our ability to make real progress during a period of fiscal and economic restraint, and that important new concerns may not get the attention they deserve.

Government and industry are already setting environmental priorities on so many different bases....

By adopting a comprehensive approach to priority setting, government and industry's expenditure of time and effort are more likely to be proportional to the potential reduction of environmental risk.

Objectives included integrating the Canadian Petroleum Products Institute, Priority Substances List 2, and Accelerated Reduction/Elimination of Toxics processes. The timeframe was for the Discussion Document to be completed by mid-May.

The management context of the planning assumptions included:

A common process is needed by Environment... and its partners to guide the initial and periodic management review of strategic planning and budgetary priorities.

A priority setting process would be used to guide the implementation of existing initiatives and to provide the basis for the selection of the initial response strategy to emerging issues. For example the justification for... research,... monitoring and assessment, or... prevention, control or mitigation.

This... process is not intended to replace mandated decision-making processes nor supplant scientifically valid screening and assessment protocols.

The... process will provide... a qualitative ranking of pollution problems in terms of their risk reduction potential. It should eventually supplant existing piecemeal and pollutant-by-pollutant approaches to priority setting.

The... process will not replace the quantitative risk characterization and assessment needed for the design of control programs or promulgation of regulations, guidelines or standards. It should provide assistance in determining the relative priorities and resources allocations for the work required.

Resource needs for the planning assumptions included:

In order to meet a ten week timeframe....:

- Two senior and one junior professional staff and clerical support from [Conservation] will be required on a full time basis...
- Two task groups of approximately nine persons each drawn from participating directorates.
- A third task group will be needed to organize the workshop
- The designated team members would have to be assigned by their respective [director generals] on a priority basis to these tasks. At least one meeting and two days of their time would be required each week...
- Approximately 30-40 persons will be asked to spend 2-3 days to critically review the work of the task groups and to apply the... process to selected problems....
- If practicable an external consultant should be retained to provide technical support for each task group.
- A conference organization and reporting service would have to be retained to organize the workshop.

- Additional funding (\$40-\$60K) would be required if these two recommendations are adopted.
- Participation of other partners, stakeholders and [environmental groups] during this phase... would have to be limited to the workshop

Regarding organization, the Director General Steering Committee was no longer to include stakeholders. Outstanding issues included commitment of resources to the Project. Regarding the Project Team, "comparative risk assessment will be performed on the residual risks... to set priorities for further risk reduction efforts."

Regarding terms of reference, Conservation wrote:

Because there are so many intake points in the federal government, there is a need to develop a common approach to identifying and scoping pollution problems...

....There are so many different approaches to screening and assessment currently in use, and so few common denominators.... No guidance is provided to decision-makers when difficult choices have to be made about how to allocate dwindling resources.... The search for strict scientific proof needed by regulators neglects the immediate needs of decision-makers for timely advice, ignores the consequences of delay, and overlooks the mounting transaction costs of piecemeal approaches....

....It is strongly suggested that a Stress-Exposure-Response Framework may be the most suitable approach....

....A state of the art review of screening and assessment approaches has been completed and an overview of public polling, attitudinal and perception studies is being prepared.... From five to seven representative pollution problems will be selected and documented using the draft profile for a Multidisciplinary Workshop. Sample problems such as contaminated sites, persistent toxics, atmospheric deposition, habitat loss or biological depletion may be selected....

....A formula based method for comparing relative risks appears to be the most appropriate approach....

The workshop should be open to the participation of stakeholders, other levels of government, university, professional and environmental interest groups. As well, the department should invite keynote speakers and windup commentators for opening and closing plenary sessions, which reflect complementary and opposing points of view.

There is widespread concern that incorporation of management factors, such as risk acceptability, ownership and ability to manage pollution problems in the priority setting process should be kept separate from the risk ranking process itself. This is because... there may be a tendency among decision-makers to tailor the definition of pollution problems to available solutions. For this reason incorporation of these factors in the priority setting will only be considered at the workshop which will be an open forum.

The Team was no longer to include Fisheries, Agriculture, Transport, and stakeholders. It was to include about 30 Environment (Conservation & Protection, Corporate Policy, Atmospheric Environment, and Parks), six other federal departments (Health/Health Protection, Energy, and Industry), and one International Joint Commission staff.

Current resource levels included extramural participation, conference service, printing and office support, and travel and other operations and management.

Regarding communications, Conservation wrote:

Strategy will have to be developed to explain how this initiative will affect current undertakings of Environment... (such as [Priority Substances List 2 and Accelerated Reduction/Elimination of Toxics]).... The need for [sic] regular briefing note or newsletter should be considered.

The Environment Canada Project coordinator then recommended in an information note, regarding the Core Director Working Group, "confirmation of mandate and purpose." He also recommended, regarding confirmation of support, "Fisheries... and Agriculture... should be invited to support the project." Confirmation was still outstanding from Corporate Policy.<sup>13</sup>

*The Canadian Petroleum Products Institute and Environment Canada projects.* Environment and their partners continued to participate actively in the work of the Environmental Priorities Working Group. **The Environment Canada Project coordinator questioned whether the Canadian Petroleum Products Institute Project should be re-established as a priority, and advised that government should establish the Environment Canada-Canadian Petroleum Products Institute Project (to develop and use the Environment Canada and Canadian Petroleum Products Institute processes to determine petroleum products industry environmental priorities), as shown below by excerpts from a coordinator's information note.**

Regarding the current situation, the coordinator wrote:

Participation... has imposed a very heavy workload.

The [Canadian Petroleum Products Institute] process involves aspects of both risk assessment and management. This process lacks an approach to problem definition or issue identification. It will therefore be difficult to integrate its recommendation with those of any other systems. Moreover, the focus still seems to be developing a response to the current government agenda rather than the industry developing a proactive approach to identifying the environmental risks associated with its own activities and opportunities with the greatest potential for reducing these risks. Very little consideration has yet been given to exposure setting (populations and ecosystems and sites that have actually been impacted.) Therefore the suitability of the process for risk management purposes has yet to be discussed.

Further, the coordinator recommended, "Active consideration should now be given to how to integrate this process within the scope of an overall approach to Priority Setting... If necessary, the government side should intervene in a timely manner to request modifications to the approach before it is finalized."<sup>14</sup>

*The Environment Canada Project.* The Environment Canada Project coordinator recommended in an information note:

- We will keep [the Advisory Committee on Environmental Protection] up-to-date of the critical path for the project and... circulate the draft business plan to [the Committee] for comment before it is approved by [Environment's] senior management committees. [Committee] members will be invited to participate in the... workshop.
- CanTox's recommendations will be circulated to [the Committee].
- The requirement to proceed in a coordinated manner with due consideration for the interests of all, has made it necessary to modify the original project timeframe....
- Tentatively the Multi-stakeholder Workshop will be held by the... beginning of June.
- A progress report will provided [sic] for the next meeting of [the Committee] [in early May] and someone will attend to answer questions.

An article about Canadian comparative risk projects, including the Environment Canada Project, an Environment Council of Alberta project, and a potential Ontario Ministry of Environment project, was printed in the newsletter of the Northeast Center for Comparative Risk. The coordinator was interviewed for the article.

The Council, a provincial crown corporation, established the Future Environmental Directions Project, "to recommend long-term priorities to all parties with an impact on the Alberta environment," as a priority for Alberta by now.<sup>15</sup>

*The Canadian Petroleum Products Institute Project.* The Energy senior economist revised Step 1 of the Canadian Petroleum Products Institute process and sent it to the Step 1 Group (and copied the Energy senior director). She wrote them:

There is clearly a need for us to meet face-to-face to advance this work. [The Conservation & Protection/Environmental Protection/Industrial Programs chief] has asked for revised material to be sent to him by [mid-April]... I have doubts about whether this deadline is realistic for us.

The economist suggested the Group meet in late April.<sup>16</sup>

*The Corporate Policy and Environment Canada projects.* In early April, the Environment Canada Project manager reviewed the draft Hickling Report, and sent his comments to the Corporate Policy director. **The manager argued to the director that the Corporate Policy Project should be ended as a priority because neither quantitative risk assessors nor benefit-cost analysts (vs qualitative risk assessors and other economists) should help decide Environment's priorities, as shown below. Also shown, the manager advised that the Environment Canada Project should be re-established.**

The manager wrote the director (and later copied the Core Director Working Group):

I wanted to give you my initial reactions to the Hickling Report before the next meeting of the... Group. What Hickling proposes is a structured quantitative approach to decision-making that does not reflect the management realities of this department. A qualitative approach would be far more suitable for risk assessment phase of decision-making and more easily understood by senior managers. Benefit cost analysis... has already been employed by this department for many years to evaluate risk management options. What Hickling proposes is simply a different approach, that is fraught with difficulties, to meeting this need, which arises much later in the decision-making process. ...We need to have a presentation of this project in an open forum where its relevance to priority setting could be clarified. There is an obvious overlap and need for coordination. I would prefer direct collaboration and think that [Conservation & Protection] and [Corporate Policy] should come to an agreement on a common work plan.

Although Hickling acknowledges that "both knowledge of complex ecological systems and ability to place dollar values on improvement in environmental quality are limited" it recommends use of [benefit cost analysis] to select environmental policies and priorities provided the uncertainties associated... are... considered. It then proceeds to apply [benefit cost analysis] to program design (the analysis of implementation options.) I consider it... highly unlikely that all action plans and goals can suitably quantified [sic], analyzed and brought together once a year for the consideration of decision-makers. Moreover, program mission may not be the most suitable basis for the analysis.

Hickling has provided a resume rather than a review of the literature on the use of economic analysis to estimate environmental benefits. The pros and cons and feasibility of application... have not been critically evaluated. Its discussion of qualitative methods is simply not fair. Comparative risk assessment does not exclude socioeconomic factors.

Relatively little progress has been made in the use of [benefit cost analysis] because of our ignorance.... We are just embarked on the process of developing a framework for environmental valuation...

The use of net present values and discounting is likewise fraught with difficulty....

Both scientists and economists need to address the issues of risk and uncertainty in presenting their recommendations. Current practice in many jurisdictions now requires epidemiologists and toxicologists to also use Monte Carlo methods.

Neither benefit cost analysis nor cost effectiveness analysis give unambiguous answers....

Decision-makers are always forced to rely in the end on ranking systems or decision rules about trade-offs that minimize the maximum possible loss given our state of knowledge.<sup>17</sup>

*The Environment Canada Project.* Conservation & Protection/Ecosystem Sciences/Conservation drafted a table comparing the Priority Substances List 2, Accelerated Reduction/Elimination of Toxics, and Saint Lawrence Action Plan projects.

Environment established the Saint Lawrence Action Plan project, "to support pollution cleanup efforts, the conservation of habitat, flora and species as well as the rehabilitation of damaged environments in the Saint Lawrence Corridor," as a priority for themselves in 1988.

In mid-April, the fourth Core Director Working Group meeting was held. Before the meeting, the Group were sent the draft detailed Environment Canada Project plan and various updates on the Environment Canada, Canadian Petroleum Products Institute, and Corporate Policy projects. **In one information note, the Environment Canada Project coordinator advised the Group to advise Fisheries and Agriculture to establish the Environment Canada Project as a priority.**

**At the meeting, the Group finished the draft detailed plan.** They met to confirm their purpose and mandate, discuss the draft plan and finalize it, receive updates on the Environment Canada, Canadian Petroleum Products Institute, and Corporate Policy projects, and discuss the Policy Advisory Committee presentation. The coordinator also attended.

The Group thought Fisheries and Agriculture should be invited to join the "Priority Setting Project." They recommended the first Director General Steering Committee meeting be held soon after the Environment Canada Project manager was scheduled to brief the Policy Advisory Committee, and the project teams be staffed "as expeditiously as possible."

By now, Environment resources had contributed significantly to the Canadian Petroleum Products Institute process within the Canadian Petroleum Products Institute timeframe, and to the Canadian Standards Association initiative. The activities had "clarified somewhat the developmental analysis" of the Environment Canada process.

Conservation drafted an information note on the status of Environment's "Priority Setting Exercise" for the Advisory Committee on Environmental Protection. A further

report was to be distributed just before the early May Advisory Committee meeting and a Steering Committee member was to be present to answer questions. The Environment Canada Project manager and Conservation & Protection/Environmental Protection director general met to discuss the meeting.<sup>18</sup>

*The Canadian Petroleum Products Institute Project.* The Energy senior economist wrote the Step 1 Group, "Given our hectic schedules, it has proved nearly impossible to find a meeting time when we are all available." (The second Ultramar senior manager was unable to attend.)

The "public perception check" group, including the third Canadian Petroleum Products Institute senior director, third Imperial Oil senior manager, and Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis senior advisor, wrote:

Off-line vs on-line process:

- The main process should be driven by facts and scientific data. Perception should not drive action in main process as could lead to misuse of scarce resources.
  - If gap exists between fact and perception then work on gaps to close, rather than have gap drive priorities and result in ineffective use of scarce resources.
- How does one measure public perception?....
- How to get credible data, measure results, develop actions and then see impact.

And one Environmental Priorities Working Group member wrote, "consult with issue specialists to obtain relative importance of individual pollutants."

A Petroleum Products Industry Task Force meeting was held. The Conservation & Protection assistant deputy minister did not attend. The Conservation & Protection/Environmental Protection director general left early. At the meeting, the Task Force agreed that their report was to be a summary of the reports of the Canadian Petroleum Products Institute and Competitiveness projects. They also agreed to advise the first Institute senior director on their perceived communications needs by early June.

By now, the Institute was restructured to "enhance its capability to manage public policy issues and involve the Board of Directors more closely." The Board was to discuss the Task Force report and follow-up activities at their meeting in late June.

In late April, the fourth Working Group meeting was held. The Environmental Protection/Industrial Programs chief wrote on the meeting agenda, "Maintain [the Institute] time line and not slow to other exercises." At the meeting, the Group began drafting the Canadian Petroleum Products Institute Project report. Writing assignments



were agreed to. They included the co-chairs, chief, third Canadian Petroleum Products Institute senior director, Pembina Institute executive manager, Energy senior economist, third Imperial Oil senior manager, and senior advisor. The sections were due at the end of April. The Canadian Petroleum Products Institute senior manager, the chief, Industry executive, and an Institute manager were to assemble the draft.

After the meeting, the senior economist sent a timeline for drafting step 1 to the Step 1 Group, and wrote them, "Tight timelines I realize but I hope we can meet them."<sup>19</sup>

*The Corporate Policy Project.* **Meanwhile, in mid-April, Hickling finished its 62-page report.** They wrote, in the executive summary:

The purpose of this working paper is to present a workable methodology to establish effective priorities and operational guidelines for environmental initiatives. This methodology will allow Environment... to evaluate complex environmental problems and entirely different mandates on a common economic basis. The prioritization method will give decision-makers the ability to bridge the transition from scientific analysis to economic evaluation.

The methodology is presented in four phases. The first phase organizes the issues of interest into policy categories....

The second phase contains the program design aspects that are supported by solid scientific research. The outcome is an evaluation of the physical effects of a problem and a proposed remediation program. Next an cost-benefit evaluation is performed that places a value on... these physical effects and quantifies the benefits of the initiative or policy. A successful transition is consequently made from environmental research to economic valuation.

The output of the second phase... will include some... risk. This risk will result from the uncertainty contained in the scientific research needed to identify the physical effects, as well as, from the uncertainties contained in the valuation of these conclusions. In order to adjust for these uncertainties a thorough risk analysis is performed in the third phase. The risk analysis process assigns a probability to the economic valuation to assist the policy maker and strives to build consensus among stakeholders.

The fourth... phase... provides a defensible basis for the decision-maker without sacrificing the flexibility to consider real life constraints.

The final chapters describe an operational plan for the methodology and some recommendations. Issues, such as, testing, institutionalization and automation are addressed.

The process is shown in Appendix 2.

Hickling recommended, "The sequence of the recommendations reflect a plan for integrating economic evaluations into the prioritization process. The overall cost of implementing... should be approximately... The three tasks outlined... could be

completed within 4 months." The tasks included test cases, develop a practitioner's manual, and provide training to key personnel.

**A Hickling project manager sent the report to the Corporate Policy director general, and advised him to re-establish the Corporate Policy Project as a priority (use the Hickling process), as shown below.**

The project manager wrote the director general,

This paper discusses alternative methods for establishing priorities in environmental policy. It also describes a framework, founded on the methods of risk analysis and benefit-cost analysis, that will allow economic concepts and techniques to be consistently applied in the selection of priorities.

The framework recognizes the risks involved in the benefit-cost process due to uncertainty concerning scientific and economic data. Hickling believes such uncertainty should be dealt with in an explicit fashion. Accordingly, we propose that risk analysis be applied wherever possible in the evaluation of [Environment's] programs and initiatives. Risk analysis will produce estimates of net benefit in the form of probability distributions, from which point estimates (e.g., mean values) may be obtained if required. Hickling believes that this approach will enhance the usefulness of benefit-cost analysis by putting concerns about the riskiness of certain proposals on a quantitative footing.

The present paper reflects comments provided by Environment... on our previous Working Paper.<sup>20</sup>

*The Environment Canada Project.* Conservation & Protection/Ecosystem Sciences/Conservation revised the draft detailed Environment Canada Project plan. The timeframe for review of the business plan was now completion by early May. Resource needs for the planning assumptions now included:

The designated team members would have to be assigned on a priority basis to this project. At least one meeting and two days of their time would be required over a six to ten week period, a potential commitment of up to twenty days per person. However, work already completed may considerably reduce the time demanded.

By now, the CanTox reference document and recommendations were to be circulated shortly for review. The Environment Canada Project manager was writing to other Environment and other federal department directors whose staff were wanted to participate on the Project Team. Memos to the Director General Steering Committee had been drafted for the Ecosystem Sciences director general's signature to advise them of the request and to propose a meeting in early May to review the draft detailed plan. A group of four to five people was required to organize the workshop.

**In late April, the Core Director Working Group updated the Conservation & Protection assistant deputy minister (via the manager) on the Environment Canada and Canadian Petroleum Products Institute projects, and advised him to advise the Fisheries and Agriculture assistant deputy ministers to establish the Environment Canada Project as a priority.** The memos to the assistant deputy ministers were attached for his signature.

The manager wrote the Conservation & Protection assistant deputy minister:

Conflicting demands have been made on the limited professional resources at our disposal. In particular, the [Canadian Petroleum Products Institute] [Environmental Priorities] Working Group has made heavy demands on key personnel's time. The consequence has been some slippage in the timeframe originally proposed for our project which we hope to partially recoup. Moreover, I feel the experience has been mutually beneficial, that we will have the opportunity to work out some of the problems the [Group] have been unable to resolve and still provide timely advice to decision-makers.

....A plan... has been prepared that reflects the input we have received so far..... I am anxious to get an early start in May in order to hold the workshop in June.

**The Conservation & Protection assistant deputy minister sent the draft detailed Environment Canada Project plan to the Fisheries assistant deputy minister and advised her to establish the Project as a priority, as shown below.**

The Conservation & Protection assistant deputy minister wrote the Fisheries assistant deputy minister:

Environment..., in partnership with several other departments [Health, Industry, Energy, Transport, and Finance] has undertaken to develop a comprehensive priority setting framework for environmental issues and concerns. This framework would guide the setting of priorities for this Department. The development of this framework recognizes the severe constraints now facing both industry and government which now limit our ability to achieve the goals set out in the Green Plan and to respond to emerging environmental problems. It addresses the needs identified by the Advisory Committee on Environmental Protection (a joint government, industry, labour and public interest group forum) and also responds to the recommendations made by the Canadian Petroleum Products Institute to these five ministers. We would appreciate your Department's support for this work, your views about the scope of the framework and any suggestions about other approaches to priority setting that you feel merit our consideration.

....I... request your cooperation and support by asking you to nominate someone to the [Director General Steering] Committee, and if you think it appropriate at this time, to the Core [Director Working] Group, and the Project Teams. Subsequent phases of the project, not yet agreed upon, may call for broader review and public participation in the development of the framework over the summer and fall.

At the end of April, the Conservation & Protection assistant deputy minister replied to the Atmospheric Environment assistant deputy minister's early March reply to his invitation and offered to arrange a briefing for him and his staff when they were in Ottawa next. The Conservation & Protection assistant deputy minister wrote the Atmospheric Environment assistant deputy minister, "I think that you will find that comparative risk assessment offers a comprehensive approach to priority setting that will assist Environment... and its partners to set priorities for cooperative action required to implement clean air plans and strategies."<sup>21</sup>

**Meanwhile, from late April to early May, the Core Director Working Group (via the Environment Canada Project manager) sent the draft detailed Environment Canada Project plan to other Environment (Conservation & Protection, Corporate Policy, Atmospheric Environment, and Parks), other federal department (Industry and Energy), and International Joint Commission "directors." The Group advised the directors to make the Project a priority, as shown below.**

The directors included 21 Environment directors and director generals (including regional), two other federal department directors, and an International Joint Commission secretary.

The manager wrote the directors:

...Environment..., in partnership with several departments and stakeholder groups has undertaken to develop a prototype comprehensive priority setting framework for environmental issues and concerns. This commitment was made by the [assistant deputy minister] of [Conservation & Protection]... In order to meet the required timeframe.... The... Group... has asked me to proceed with setting up these multidisciplinary teams of health, scientific and economic professionals.

He asked them to make their staff or a suitable replacement available.

The manager further wrote:

Based on experience with similar projects.... However, preliminary work already completed may considerably shorten the commitment required. In order to meet the [assistant deputy ministers'] expectations and complete this project within a short timeframe, we are anxious to start work early in May... and need to know soon whether the... staff can be made available.

Deliverables included "host a Multidisciplinary Workshop to validate the priority setting process... This workshop will be a small but an open forum including

participation of stakeholders, other levels of government, university, professional and environmental interest groups."

The first Project Team meeting was not held until early June.

**In late April, the manager sent a suggested memo from the Ecosystem Sciences director general to the Director General Steering Committee to the director general, and advised him to advise them to re-establish the Environment Canada Project as a priority, as shown below.**

The manager wrote the director general, "In order for us to meet, even approximately the timeframe set to complete the first stage of the priority setting exercise, we have to mobilize very rapidly a team of knowledgeable persons.... I have written to the relevant directors and need you to follow-up."

The Committee included eight Environment (Conservation & Protection, Corporate Policy, Atmospheric Environment, and Science Advisor) director generals (including a science advisor) and six other federal department (Energy, Industry, Transport, Health/Health Protection, Finance, Agriculture, and Fisheries) director generals and directors.

In the memo, the director general wrote the Committee:

Your [assistant deputy minister]... has nominated you to serve on the [Committee].... In order to respond to this timeframe which is short, [the manager] has already written to [the relevant director]... I hope you will support his request for assistance and ensure that the requested staff... can be made available to help us.

He invited them to the first Committee meeting in mid-May to review the Project's progress and approve any revisions to the draft detailed Environment Canada Project plan. (Copies of the draft plan and the manager's memo to the director were attached to the memo.)

The memo was not sent until mid-May and the Committee meeting was not held until mid-June.<sup>22</sup>

***The Canadian Petroleum Products Institute Project. By the end of April, the Environment Canada Project coordinator questioned whether Environment should re-establish the Canadian Petroleum Products Institute Project as a priority, as shown below by excerpts from his notes. Also shown by excerpts from an Environment Canada Project manager's memo, the manager argued to the Energy***

**senior economist that the public should help decide petroleum products industry environmental priorities (vs experts alone).**

The coordinator wrote the manager:

[Canadian Petroleum Products Institute] needs

- statement of purpose - caveats need... to be placed on our participation & advice
- def of issues - consistent approach is need so there is a common thread & comparable things are being ranked
- significance - need means of screening things into & out of system - [Health, Environmental Protection] & us need to get together on this
- exposure context - needs to be specific - ie what is being impacted...
- scoring system - is introducing a systematic bias

Philosophical thrust - Qualitative rather than pseudo-quantitative

- industry needs to manage own risks rather than simply react to govt agenda
- has a my room is cleaner than yours...

The manager sent his comments and caveats on at least step 1 of the Canadian Petroleum Products Institute process to the economist and wrote her:

Method of Dealing with Spatial Issues

....Spatial factors are not being treated logically in different components of the model.

It seems to me (as you have heard before) that we have not addressed this issue on a consistent or logical basis.

I have always proposed that spatial characteristics, like some other characteristics, should be treated as modifiers to the priority setting process....

Effects Table

It must be remembered that aspects of this table are measured in qualitative terms, not quantitative.

All gradations from negligible to catastrophic (Consequences Column) are to be done on a subjective basis...

Although there are different interpretations as to what exceeding thresholds are between health and ecological guidelines....

...It is worth pointing out that column three is not a dollar figure with quantitative limits....

We also think that consequence box IV should not include "Unknown" with "Negligible." If the effect is unknown, this should automatically drop the issue into an external loop that says "conduct research..."... The Unknown consequence might turn out to be very serious

Definition of Issue

As you will recall, we may have apples and oranges in the issues, and there is no consistent thread.

The report should indicate that work is needed in this area to decide whether the issue is a substance (i.e. when does a pollutant become an issue) or is the issue to be an ecosystemic effect only (climate warming).

Public Perception

Similarly, a note should be made that although the argument has been made that the priority setting should be one purely on factual/scientific grounds and perception issues should be run in a parallel stream, that an equally valid argument could be made for characterizing public perception on line to the point of determining what issues are important and why.

The manager also wrote on an outline of the Canadian Petroleum Products Institute Project report, "Is the purpose of the model to... set priorities for industry action in the [environmental protection] area (and cross link to [Environment]/National Priorities) or... maximize the environmental risk reduction from a given investment envelope."<sup>23</sup>

*The Environment Canada Project.* **In early May, at the Policy Advisory Committee meeting, Conservation & Protection advised the Committee (via the Environment Canada Project manager) to re-establish the Environment Canada Project as a priority, as shown below by excerpts from the manager's meeting overheads and notes. Also shown by excerpts from a Corporate Policy director general's memo, the Committee re-established the Project for Environment.**

The manager briefed the Committee on the Project. He told them, "everyone wants to jump to contents & output of model - can't say until process is finished but we have some ideas," "parallel activities in Alta/Ont," and "[Canadian Council of Ministers of the Environment] has an interest."

The outputs of the Project were: Phase 1, "test and validate process," by June 1993; Phase 2, "consultation and buy-in," by September 1993; and Phase 3, "priority list," by November 1993.

Partnerships in risk assessment included: Health (Canadian Environmental Protection Act - Priority Substances List - toxics, and environmental health), Transport (fuels - toxics and emissions, and transport of dangerous goods - spills), Energy (climate change - greenhouse gas emissions), Industry (Canadian Environmental Protection Act, regulatory impact assessments, and Prosperity Initiative - competitiveness), Fisheries (persistent toxic substances, and environmental effects monitoring), and Agriculture (pesticides and fertilizers).

Industry established the Prosperity Initiative project as a priority for themselves by now.

The manager also told the Committee (his notes, written on the overheads, are in italics):

Screen and Characterize.... [science knowledge]  
Workshop....

- multidisciplinary
- open forum

"[The manager's] presentation... generated considerable interest. Significantly, there was a general recognition that we needed to get a broader discussion of the proposed methodology within the department before we do much more with other departments or stakeholders."<sup>24</sup> In other words, the Committee approved the draft Environment Canada Project plan.

(The draft plan was not circulated to the Advisory Committee on Environmental Protection for comment before Environment's senior management committees approved it, as originally planned.)

#### Director General Steering Committee Approval of the Plan (Phase 1)

In this section, the first process of re-establishing the Environment Canada Project as a priority for Environment and other federal departments ended. Several other processes of determining environmental priorities intersected with this one, including establishing and re-establishing the Environment Canada, Conservation & Protection Fiscal Restraint, Environment Canada-Canadian Petroleum Products Institute, Corporate Policy, June Budget, Canadian Petroleum Products Institute, and Environment Canada-Corporate Policy projects for other federal departments, Environment, the Canadian Petroleum Products Institute, and two environmental groups.

Specifically, the Environment Canada Project manager advised a third Health/Health Protection director to make the Environment Canada Project a priority. The Environment Canada Project coordinator advised that the Conservation & Protection Fiscal Restraint project should be ended, and the Environment Canada Project should be re-established as long term priorities. The Conservation & Protection/Ecosystem Sciences director general advised the Director General Steering Committee to re-establish the Environment Canada Project. And the Conservation & Protection assistant deputy minister advised the Agriculture assistant deputy minister to establish it. Then the Fisheries assistant deputy minister did so for Fisheries.

The manager advised Environment (Conservation & Protection, Corporate Policy, Atmospheric Environment, and Parks), other federal department (Industry, Energy, and Health Protection), and International Joint Commission staff to make the



Environment Canada Project a priority. The Conservation & Protection/Environmental Protection director general advised the Ecosystem Sciences director general to establish the Environment Canada-Canadian Petroleum Products Institute Project. And the Corporate Policy director general advised Environment to re-establish the Corporate Policy Project (use the Hickling process). Then the Conservation & Protection assistant deputy minister established the June Budget Project (to use the Conservation & Protection Fiscal Restraint process) for Environment.

The Environmental Protection director general advised the Conservation & Protection/Policy director general to end the June Budget Project as a long term priority. Ecosystem Sciences/Conservation asked the Project Team to advise whether Environment and other federal departments should re-establish the Environment Canada Project. The Team - including an Ecosystem Sciences/Wildlife Research science liaison officer, Ecosystem Sciences/Strategic Planning science programs officer, the Conservation/Ecosystem Risk Analysis socioeconomic risk analyst, Environmental Protection/Regulatory Affairs economist, Conservation & Protection/Wildlife resource economist, Corporate Policy economist, and Environmental Protection/Industrial Programs senior engineer - advised that Environment and other federal department assistant deputy ministers should re-establish it. And the Environmental Priorities Working Group - including the Energy senior economist and Health Protection biostatistician - advised the Petroleum Products Industry Task Force to re-establish the Canadian Petroleum Products Institute Project. Then the Agriculture assistant deputy minister established the Environment Canada Project for Agriculture. And the Health Protection director general re-established it for Health.

Conservation advised the Committee (via the manager) to re-establish the Environment Canada Project. The Committee advised Environment to advise Forestry to establish it, and Environment to re-establish the Corporate Policy Project. Some Committee members questioned whether it should be, and whether the Environment Canada-Corporate Policy Project (to develop and use the Environment Canada and Hickling processes to determine Environment's priorities) should be established. And the Committee questioned if the Corporate Policy and Canadian Petroleum Products Institute projects should be re-established now. Then they - including an Agriculture senior environmental analyst - re-established the Environment Canada Project for Environment and other federal departments (develop the Environment Canada process). And the Ecosystem Sciences director general advised some Environment (Science

Advisor) and other federal department (Transport, Finance, and Fisheries) director generals to do the same.

During these processes of determining environmental priorities, one argument continued about the scope of a process for determining priorities. A Wildlife director argued to the Environment Canada Project manager that the Environment Canada process should determine more than pollution priorities.

At this point, the Group resolved the argument about the public helping decide petroleum products industry pollution priorities. They recommended the public help decide them in the Canadian Petroleum Products Institute process. And the Committee resolved the arguments about the Environment Canada process determining more than pollution priorities, and ending the Corporate Policy Project because neither quantitative risk assessors nor benefit-cost analysts should help decide Environment's priorities. They decided that the Environment Canada process should determine more than pollution priorities, advised Environment to re-establish the Project, and recommended the assessors and analysts help decide Environment's priorities in the Hickling process. The other arguments were not resolved during this period, May 1992 to June 1992.

#### Evidence

In early May, the Environment Canada Project continued as Conservation & Protection proceeded to implement Phase 1 of the Project plan, led by Conservation & Protection/Ecosystem Sciences.

The fifth Advisory Committee on Environmental Protection meeting was held. Attendance was limited to members and guest speakers. Members now included the National Research Council and United States Environmental Protection Agency. The Secretariat was now Resource Futures International, a consulting company related to the Rawson Academy. The Memorandum of Understanding Steering Committee wanted to extend the membership of the Advisory Committee for one year.

A brief progress report on Environment's "Priority Setting Exercise" was given.

An extensive consultation process is taking place and includes a multi-stakeholder workshop... Results of this process will be reported upon at the September meeting.

[The Industry assistant deputy minister] indicated that no further slippage of dates is expected.... [The Canadian Nature Federation (formerly the Rawson Academy) executive director] asked whether the public will be invited to participate in the

upcoming Priority Setting workshop... [The Conservation & Protection/Environmental Protection director general] confirmed that the public would be invited, and reiterated the invitation extended to [the Advisory Committee] by [the Conservation & Protection/Ecosystem Sciences director general] at the [early] February meeting that they also attend.

Other items on the Advisory Committee agenda included: Competitiveness and the Environment, Environmental Citizenship, Economic Instruments, Legislative Framework on Pollution Prevention, and Regulatory Review; and National Pollution Prevention Strategy, Canadian Environmental Protection Act Review, and Organization for Economic Cooperation & Development/Pollution Prevention Control Group progress reports.

(After the meeting, a debriefing session was held for Conservation & Protection.)

By mid-May, the Environment Canada Project manager met with the Health/Health Protection director general (a Director General Steering Committee member) and a third Health Protection director. **After the meeting, the manager advised the director to make the Environment Canada Project a priority, as shown below.**

The manager wrote the director:

...Your staff have been briefed on our proposed workplan which includes establishing these short term multidisciplinary teams [of health, scientific and economic professionals]... I had hoped that you could make [the second Health Protection director] and [statistician] available. The... methods developed by this process will be tried out on five to seven case studies which will likely include atmospheric deposition (nitrogen), a persistent toxic (an organochlorine), release of heavy metals (eg. mercury), green house gas emissions, habitat loss, a large contaminated site or remedial action plan. You agreed that your Bureau would rank such issues from a health perspective for us and... provide the criteria used for inclusion in the framework. If you wish to do this in an alternative way such as by forming a Health Subgroup to develop the methods required for Tasks One [problem definition] and Two [scoring and ranking]... please advise. In this case, we will still need someone to act as liaison with the rest of the [Project Team] and expect that your Bureau will participate constructively in the Multi-disciplinary Workshop... In order to meet the [assistant deputy ministers'] expectations and complete this project within a short timeframe we are anxious to start work... and need to know soon how you propose to provide the requested input.

The rest of the memo was similar to his late April and early May memos to Environment and other federal department directors.

**The next day, the Conservation & Protection/Wildlife director replied to the manager's request to make staff available to the Project Team. He argued that the**

**Environment Canada process should determine more than pollution priorities, as shown below.**

The director wrote the manager:

[Wildlife] believes that a priority setting exercise conducted in partnership with other departments and stakeholders would indeed be useful. However, we are puzzled by the selective focus on pollution. Surely, the environmental issues and concerns that this department and its partners face extend beyond pollution. In fact, one of the purposes of the fabric exercise... is to encourage a Paradigm Shift which would help this department move away from a 'react and cure' approach to a more proactive one. Shouldn't this be reflected somehow in the priority setting exercise...? If the exercise is to limit itself to pollution, then it would seem appropriate to build up a team by drawing heavily on expertise from the "protection" side of [Conservation & Protection] which excels in this field. Given the selective focus, it seems unclear ... just how involved [Wildlife] should be in the... exercise. In this event, perhaps [a staff member] from... Wildlife Toxicology... could be involved. On the other hand, if the exercise is to produce a truly "comprehensive priority setting framework for environmental issues and concerns"... then it would seem reasonable to extend the project to include "conservation" and "sustainable use" issues and concerns. In this event, I could envisage [Wildlife] playing an even more active role. If you... conduct such a "comprehensive" exercise, then I would ask [the Wildlife chief, as requested] (with a resource economist as an alternate) to represent [Wildlife] on these issues.

**Conservation & Protection established the Conservation & Protection Fabric Project (to develop a process to determine Conservation & Protection's priorities) as a priority for Environment in 1990.** The Fabric Team were developing a response to the challenges facing the Service, including the Environment Vision, Headquarters-Regional Integration, an Ecosystem Approach to Management, and Fiscal Restraint.

Environment established the Headquarters-Regional Integration Project as a priority for themselves by now.

In mid-May, the Environment Canada Project manager sent the draft detailed Environment Canada Project plan to the VHB-Hickling president and Hickling consulting director. The same day, the president and consulting director sent the manager five pages of suggestions on coordinating, facilitating, and documenting a workshop to synthesize the "priority setting work" of the Project Team. The manager had been discussing this with them since a meeting in mid-April. They wrote the manager that one of their consultants was to advise on compatibility with Corporate Policy's work on priorities. He had been intimately involved in it, "and can help ensure coordination between the two initiatives."<sup>25</sup>

*The Canadian Petroleum Products Institute Project.* Meanwhile, in early May, the Conservation & Protection/Environmental Protection director general wrote the Environmental Protection/Industrial Programs chief:

I had to leave [the late April Petroleum Products Industry Task Force meeting] early so... was not part of that discussion [on the communication needs for the Task Force report]...

Please call [the Canadian Petroleum Products Institute consultant] and ask him what is intended.

I want you [and the Industrial Program director's] recommendation as to who the report should go - also speak to the [Conservation & Protection/Communications director] - also give me feedback on our "communication needs."

I will want to go back to [the first Institute senior manager] on this.

**In mid-May, the Environmental Priorities Working Group finished Draft 1 of the Canadian Petroleum Products Institute Project report and resolved the argument about the public helping decide petroleum products industry pollution priorities. They recommended the public help decide the priorities in the Canadian Petroleum Products Institute process, as shown below by excerpts from the report.**

The Group wrote, regarding public perception, "Experts and industry cannot ignore the gaps in knowledge that surround issues and projects which they wish to undertake.... Once gap is identified, what options are available to close the gaps?" The options included awareness, R&D, get right data, and risk communication strategy.

The Group concluded:

The... Group is of the opinion that developing a priority establishing model, as a tool to use for setting the Canadian environmental agenda, is a realistic objective. The use of the multi-stakeholder approach to determine the requirements of such a model demonstrated the value of such a process and identified the belief that the work needs to continue.

The concept of setting priorities for human endeavours is well founded in society. Resources, whether it be time or money, are not infinite and decisions must be taken to maximize the stated objective. The group worked with the principle of cost-effectiveness in order to develop a formalized approach to deciding where the downstream petroleum industry should expend its resources. Priority setting has clearly advanced as a result of this work and the group believes that future government policy development will be influenced by it. We also believe that this approach can be applied generally as well as to other sectors, resulting in a more focused coordination of the Canadian environmental agenda.

All parties worked well together on this difficult subject, resulting in a promising methodology. The focused group discussions identified common ground as well as opinion differences within and between representatives... While consensus did not

occur on all topics, there was general agreement on the topics to the current level of development.

The work has been meaningful and has advanced the state of the art of this approach substantially. We believe that the model developed is workable and will provide useful results for decision-making. It identifies several additional needs, such as the requirement to understand the contribution of all societal sectors to environmental problems in the Canadian context, the availability of financial resources in a competitive, sustainable development context, and the need for quality input information to bring the model up to a working application level.

Next steps included:

The... Group believes that several activities need to be incorporated in the next phase of this work.

The model now needs to be applied to this sector utilizing the best available information. The simulations will allow potential users (both policy setters and impacted contributors) to understand the urgency to provide quality information.

One required input to the model is the definition of the financial resources available in this sector to advance the environmental agenda. (This input should come from the Competitiveness [Issues Working Group].) Without it the concept of cost-effectiveness and the actual role to be played by the petroleum downstream cannot be determined.

Many of the environmental problems linked to the petroleum downstream have other contributors. In order to generate a true societally cost-effective approach those contributors, their impacts and their solution cost-benefit inputs are needed. The model clearly requires an integrated, multi-sectorial, multi-jurisdictional approach to be successful. To this end, the model should be proposed for use by [the Advisory Committee on Environmental Protection]... and the [Canadian Council of Ministers of the Environment]... within their fora. The appropriate networks for information generation and model implementation need to be developed.

- other sectors - do we take it to them and how?
- public perception - test concepts with focus groups

The fifth Environmental Priorities Working Group meeting was held. They met to review Draft 1.<sup>26</sup>

*The Conservation & Protection Fabric and Conservation & Protection Fiscal Restraint projects.* By now, the Fabric Team recommended Conservation & Protection adopt "a Strategic Issues Management Approach focusing its efforts on a limited number of clearly defined strategic priorities."

**Conservation & Protection/Management Accountability drafted the Conservation & Protection Fiscal Restraint process.** Based on the Conservation & Protection Operational Planning Framework, they had developed "an approach to setting

priorities" in response to potential budgetary cuts of 10% and 25%. It was based on internal policy, legal, and administrative considerations.

Management Accountability sent their comments on the draft detailed Environment Canada Project plan to Conservation & Protection/Ecosystem Sciences/Conservation. Conservation had sent it to them in early April.<sup>27</sup>

***The Environment Canada Project. The Environment Canada Project coordinator advised that the Conservation & Protection Fiscal Restraint Project should be ended, and the Environment Canada Project should be re-established as a long term priority, as shown below by excerpts from his briefing note on "priority setting."***

Regarding background, the coordinator wrote, "By adopting, a comprehensive approach to priority setting based on comparative risk assessment, government and industry's expenditure of time and effort are more likely to be proportional to the potential reduction of environmental risks." He gave an update on the Conservation & Protection Fabric and Fiscal Restraint projects.

Regarding current situation, the coordinator wrote:

An integral consideration in planning the Priority Setting Project has been to document environmental initiatives requiring priority setting to identify critical linkages. These have included among others: [Canadian Environmental Protection Act]-Priority Substances List 2...; Accelerated Reduction & Elimination of Toxic Substances...; Great Lakes Action Plan (Remedial Action Plans and the Virtual Elimination of Toxics), St Lawrence Action Plan... and Comprehensive Air Quality Management Framework.

And the coordinator recommended:

- Concur that [Conservation & Protection/Management Accountability's] phased approach is suitable for addressing our current activities if [Conservation & Protection] has to undertake a short run cost cutting exercise.
- Concur that Priority Setting Project has to identify strategic linkages with other departmental initiatives to develop a more suitable comprehensive approach that would meet the Service and the department's longterm needs.

**The same day, the Conservation & Protection/Ecosystem Sciences director general advised the Director General Steering Committee to re-establish the Environment Canada Project, as shown below.**

The director general invited the Committee to the first Committee meeting in mid-June, originally scheduled for mid-May.

The next day, a second Conservation & Protection/Environmental Protection/Industrial Programs director invited Conservation & Protection Air Issue Managers, the Climate Change/Greenhouse Gas Team, Nitrogen Oxides/Volatile Organic Compounds Federal Implementation Team, and Acid Rain Team to an Air Issues Workshop in early June. He wrote them and copied the Conservation & Protection and Atmospheric Environment assistant deputy ministers (and the first Industrial Programs director and Environmental Protection director general):

You are invited to a series of meetings to share information on our activities on various Air Issues, and to finalize the associated Conservation & Protection Work Plans. We should also review how business plans relate to the deliverables of the new National Air Issues Coordinating Committee.

In late May, the Environment Canada Project manager replied to the second director (and copied the first director):

We are, as you know heavily involved in pursuing the [assistant deputy minister's] request to develop an overall Environmental Issues ranking scheme that could assist in Priority Setting, and our most senior people... are not available to attend. We are however sending one of our team... particularly with the view to identifying knowledge and issue assessment practices and procedures that could be relevant to the Priority Setting Framework exercise. One of our goals (and indeed our instructions) is to build into any Priority Setting Framework, any and all relevant current departmental practices.

Following the Workshop, I believe it would be essential that you and I meet with the [first director] and other of our respective staffs, to make sure that this transfer of knowledge and practices is effectively done.

Meanwhile, in mid-May, the manager presented the Environment Canada Project to the Canadian Chemical Producers Association/National Environmental Quality Committee and invited them to join the Project Team and attend the workshop. A third Association senior director wrote the manager in late May, "[The Association] fully supports the government's efforts to set priorities in the environmental agenda.... If you would contact me when you are ready to proceed... I will... identify appropriate representatives from our member companies."

**The Conservation & Protection assistant deputy minister sent the draft detailed Environment Canada Project plan to the Agriculture assistant deputy minister and advised him to establish the Project as a priority, as shown below.**

The Conservation & Protection assistant deputy minister's memo was similar to his late April invitation to the Fisheries assistant deputy minister.



**In late May, the Fisheries assistant deputy minister replied to the Conservation & Protection assistant deputy minister's invitation and established the Environment Canada Project as a priority for Fisheries, as shown below. A Fisheries director general (officially) joined the Director General Steering Committee.**

The Fisheries assistant deputy minister wrote the Conservation & Protection assistant deputy minister, "It would seem to be a worthwhile initiative, given restraints of various kinds imposed on governments." She named the director general as Fisheries' representative on the Committee.

(Ecosystem Sciences/Conservation received the memo in early June. The coordinator wrote the Conservation/Ecosystem Risk Analysis socioeconomic risk analyst, "Ensure that [the director general] is properly invited because we are late!" The socioeconomic risk analyst found that the director general was on leave and a new director general was to replace her on the Committee.)<sup>28</sup>

*The Canadian Petroleum Products Institute Project.* The Conservation & Protection/Environmental Protection/Industrial Programs chief drafted comments from Environment on communications needs for the Petroleum Products Industry Task Force report, and sent them to the Conservation & Protection/Communications director (and copied the Environment Canada Project manager and first Industrial Programs director) for comment. The chief wrote the Communications director:

The... report should be treated as a public document available on request.

Whether the report should go to Minister or [deputy minister] level is something the Task Force can discuss. The matter of communication in companies is relevant.

The conclusions... apply both to companies'... and governments' actions. The report should be forwarded equally to the heads...

Both the Environmental Priorization [sic] and the Competitive [sic] Issues reports... are technical... and do not come to specific conclusions that result in immediate expenditures. As such there is not much... of interest to the general public.

From an Environment... standpoint there is no reason to proactively promote the report.

Greater public awareness of the [Canadian Petroleum Products Institute] priority setting mechanism will come out in the "Priority Setting Workshop" Environment... has planned. (At this workshop a general [Environment] process will be examined with the [Institute] and other work being presented for discussion. A broader audience of Industry associations, gov't departments and [environmental groups] will be present there.)

The chief also attached the first rough drafts of the reports on the Canadian Petroleum Products Institute and Competitiveness projects.

(The Canadian Petroleum Products Institute Project was not presented or discussed at the workshop.)<sup>29</sup>

*The Environment Canada Project.* By late May, Conservation & Protection/Ecosystem Sciences/Conservation revised the draft detailed Environment Canada Project plan, i.e., the timetable. It now included: the first (organizational) Project Team meeting in early June; a fifth Core Director Working Group meeting and the first Director General Steering Committee meeting in mid-June; six more Team meetings from mid-June to early July; an editorial group (the Core Project Team) assembling case studies and consolidating draft framework and process in booklet form for the Priority Setting Workshop in mid-July; the Workshop from mid- to late July; Project Team leaders and rapporteurs (the Core Project Team) preparing a draft report, i.e., a summary of the Workshop proceedings and recommendations in late July; the draft report to the Group for review by mid-August, and the Committee by late August; and a revised report to the Conservation & Protection assistant deputy minister by the beginning of September.

**In late May, the Environment Canada Project manager sent the timetable and a draft agenda for the first Project Team meeting to the Environment (Conservation & Protection, Corporate Policy, Atmospheric Environment, and Parks), International Joint Commission, and other federal department (Industry, Energy, and Health/Health Protection) staff. He invited them to the meeting and advised them to make the Environment Canada Project a priority, as shown below.**

Twenty-three Environment, one International Joint Commission, and three other federal department staff were invited. The Environment staff included Conservation & Protection (Environmental Protection [Industrial Programs, Regulatory Affairs, Pollution Prevention, Commercial Chemicals, Waste Management], Ecosystem Sciences [Water Research, Eco-Health, Strategic Coordination, Environmental Assessment], Wildlife, Communications, and Policy), Atmospheric Environment, Corporate Policy, and Parks.

The manager wrote the staff:

You have been identified as a resource person and asked to participate in one of the project teams.

Commitments have been made to the [Conservation & Protection assistant deputy minister] to the preparation and submission of a preliminary report by the end of July or early in August. This would follow a technical workshop of key partners and stakeholders who would review and critique the priority setting framework developed by the project teams....

The time frame for this exercise is very short, but... there is a high probability of success given work that has already been undertaken elsewhere and... the amount of information that has been gathered and partially analyzed....

In order to meet the [assistant deputy minister's] expectations we will have to follow a path similar to the one that is set out in the... timetable.

The agenda included:

Project Overview....

Rank

- unbiased scientifically sound comparison of present and future risk

By now, Conservation drafted a table comparing the critical paths of the Environment Canada, Priority Substances List 2, Accelerated Reduction/Elimination of Toxics, Canadian Council of Ministers of the Environment Planning, Comprehensive Air Quality Management, and Canadian Petroleum Products Institute projects.

The Council established the Council Planning Project as a priority for federal and provincial governments by now. It included an Environmental Scan.

Phase 1 of the Environment Canada Project was now to be completed by August 1993 (not June), Phase 2 by October 1993, and Phase 3 by December 1993.

Contacts had been made with the Canadian Council of Ministers of the Environment, Environment Council of Alberta, and Ontario Environment & Energy. Interested industry groups and environmental groups were to be kept posted of the Environment Canada Project's progress.

Environment & Energy established the Environment & Energy Project (to develop and use a science-based process to determine Environment & Energy's environmental priorities) as a priority for themselves in May 1994.<sup>30</sup>

*The Canadian Petroleum Products Institute Project.* By early June, the Environmental Priorities Working Group was close to completing their report. Their work was on schedule and the final report was to be tabled with the Petroleum Products Industry Task Force in mid-June. A presentation had been given to the Conservation & Protection/Environmental Protection management board. The Environmental Protection director general had asked the Environmental Protection/Industrial Programs chief to

give a similar presentation to Conservation & Protection management board the following week. The chief had also been asked to present the Canadian Petroleum Products Institute "priority setting methodology" to the Policy Advisory Committee as soon as possible.<sup>31</sup>

*The Corporate Policy Project.* **By now, the Corporate Policy director general advised Environment to re-establish the Corporate Policy Project as a priority (use the Hickling process), as shown below by excerpts from a Conservation & Protection/Policy director general's memo.**

"[The Corporate Policy director general] is looking for comment on whether... the Department should move ahead with a pilot priority setting project using the methodology proposed by Hickling."<sup>32</sup>

*The June Budget Project.* **The Conservation & Protection assistant deputy minister established the June Budget Project (to use the Conservation & Protection Fiscal Restraint process) as a priority for Environment, as shown below by excerpts from the Conservation & Protection/Policy director general's memo.**

"From the last [Conservation & Protection] Management Team meeting, we have to refine our own internally developed methodology [the process] to test its applicability in the June budget exercise."

At the request of [the assistant deputy minister], I made a presentation on our proposed approach to priority setting method to the [Headquarters] adaptation meeting last week. The concept of a strategic, clear and uniform approach... was well received... and [the assistant deputy minister] has asked us to work hard at making this a success to serve as perhaps a model for Department.<sup>33</sup>

*The Environment Canada, Corporate Policy, Canadian Petroleum Products Institute, and June Budget projects.* **Meanwhile, in late May and early June, the Corporate Policy and Conservation & Protection/Environmental Protection director generals replied to the mid-May Conservation & Protection/Ecosystem Sciences director general's invitation to the Director General Steering Committee meeting and (officially) joined the Committee.**

The Corporate Policy director general wrote the Ecosystem Sciences director general (and copied the Environmental Protection and Conservation & Protection/Policy director generals):

...I welcome the opportunity to participate on the... Committee...

...This work [the Environment Canada Project] (and other priority setting initiatives such as [Canadian Petroleum Products Institute]/Hickling) is extremely important in terms of ensuring that the government's resources are allocated efficiently and in responding to outside concerns that our environmental initiatives appropriately take into account economic factors.

As you probably know, [the Environment Canada Project manager's] presentation to the Policy Advisory Committee generated considerable interest. Significantly, there was a general recognition that we needed to get a broader discussion of the proposed methodology within the department before we do much more with other departments or stakeholders. ...It would be useful to have a more fulsome discussion of this matter at [the Committee] as well as consideration by Top of the House before proceeding much further.

**The Environmental Protection director general advised the Ecosystem Sciences director general to establish the Environment Canada-Canadian Petroleum Products Institute Project as a priority, as shown below.**

The Environmental Protection director general wrote the Ecosystem Sciences director general (and copied the Corporate Policy director general, manager, and first Environmental Protection/Industrial Programs director):

...[Environmental Protection] will provide the necessary support to make this initiative a success....

....Hopefully, a timely presentation before [the Policy Advisory Committee] will ensure that all sectors of [Environment] are aware of the methodology developed and the steps to follow with respect to the [Institute] exercise.

As I mentioned to you on a number of occasions, [the manager] and his people contributed significantly to the success of the [Environmental Priorities] Working Group. While I often stated that one of the advantages of having [the manager] at our table was to ensure consistency and continuity with the [Environment] exercise, I am unsure of how the proposed business plan will provide for congruence of the two tracks. I... therefore suggest that the first task at hand is for [the manager] to explain to the... Steering Committee how the different [Environment] exercises fit together with the [Canadian Petroleum Products Institute] methodology. After we are clear with the basic architecture, we would be in a better position to develop (adjust) the business plan together with our colleagues of the other Services.

The Policy director general sent the Corporate Policy director general's memo to her to the Environmental Protection and Ecosystem Sciences director generals, updated them on the June Budget Project, and wrote them and copied the Conservation & Protection assistant deputy minister (and Corporate Policy director general):

There are now at least four significant, broadly scoped priority setting methodologies/ exercises... going on across the Department [the Corporate Policy, Environment Canada, Canadian Petroleum Products Institute, and June Budget projects], not to mention more targeted exercises like [the Priority Substances List 2 Project]. ...It is time to make these much more coincident.

....[The Corporate Policy director general] is also proposing that we have a "more fulsome discussion" on the [Ecosystem Sciences]-led proposed methodology within the department

....My staff has tentatively scheduled [the Industrial Programs chief's presentation to the Policy Advisory Committee] with [Corporate Policy] for [mid-June] but it is not clear to me why we would take this externally developed methodology as a single item...

....While the time frame may be too short for June, we [the June Budget Project] may be able to "borrow" from these other methodologies over the long run....

I suggest that we resolve the overlaps on priority setting, both the existing and potential ASAP before moving ahead with the [mid-June]... steering committee meeting.

The manager then drafted "a one-pager showing how the various tracks are connected." He wrote:

Standard... Paradigm		[Priority Setting] Process		
Risk Assessment		[Environment]... [Institute]... Hickling Steps		
Risk analysis	hazard id.	1		
	risk estimation	2		
Option eval.	dev. options	3	1	
	option analysis	4	2-5	1-3
Risk Management	decision		6	4
	implementation		x	
	monitoring			
	review			

**The Environmental Protection director general sent his memo to the Ecosystem Sciences director general to the Policy director general, and advised her to end the June Budget Project as a long term priority, as shown below.**

The Environmental Protection director general wrote the Policy director general (and copied the Ecosystem Sciences director general, Corporate Policy director general, and a second Environmental Protection/Regulatory Affairs chief):

I read with interest your [early June] memorandum... I have attached... a note I recently sent to [the Ecosystem Sciences director general]... As you can appreciate, our views are consistent.

I would like however to make a few observations on some of the points you raised. ...It is important to share with the other Services the progress we have made through the [Canadian Petroleum Products Institute] [Environmental Priorities

Working Group]. ...It is an "external exercise," but with substantial federal participation ([Health, Transport, Industry]). Our colleagues (Services) should be aware of what we have accomplished... Such a presentation can be the spark for the "fulsome" discussion on linkages. [The manager] has developed a one-pager... and I have asked [the Ecosystem Sciences director general] that he attends the [Policy Advisory Committee] meeting for follow-up discussions...

I am aware of the presentation you delivered before the [Headquarters] adaptation team last week but I am unsure why you are considering this exercise as one of the priority setting tracks in the Department. This... methodology is to enable a structured discussion on financial pressure points. I see this track with a "short life" since the overall [Environment Canada] methodology will help us generate our priorities in a comprehensive manner. [Environmental Protection] Directors have also raised concerns with respect to the capability of the questionnaire you developed to segregate priorities at level 3 (eg. the relative priority of our stratospheric ozone program versus humane trapping). While some of the questions... allow for a partial clustering of priorities, the importance (rating) of environmental implication (relevance) of a program is lacking (short of "sustainability"). This is essentially accomplished by the first steps in both the proposed [Environment Canada] and [Canadian Petroleum Products Institute] methodologies. We will still attempt (eg. toxic) to run a trial program but the end of June discussion may have to focus on priorities within program areas (i.e., vertical priority setting with scenario cuts of 5-10-25% at level 3) rather than priorities between programs. This later exercise may have to await further progress of the [Environment] initiative. I have asked [the Regulatory Affairs chief] to discuss the subject matter with you and convey the specific views of the [Environmental Protection] team.<sup>34</sup>

*The June Budget Project.* The next day, the second Conservation & Protection/Environmental Protection/Regulatory Affairs chief wrote Environmental Protection directors (and copied the Conservation & Protection/Policy director general and others) in a four-page memo:

There is no doubt that [Conservation & Protection] has embarked upon an ambitious and challenging goal by embarking on a priority setting exercise [the June Budget Project] for Management Board. In the minds of many this exercise is long overdue. In the minds of others, we have not allowed ourselves enough time. Although the current exercise will be used to determine the source of monies for the "unfunded items", it can only be seen as a first step in a much longer exercise which will put us in good stead for "integration" as well as any future budget cuts. I... therefore encourage you to take the exercise seriously, to document the flaws and provide any suggestions you have for improvement in both the substance and the process.

At present we have some criteria, some issue tables, the [Operational Planning Framework], some deadlines and a lot of uncertainty. My aim in this memorandum is to reduce the uncertainty by laying out the objectives, underlying principles and philosophies, the rules and the process that we will employ to achieve a successful result by [late June].

The Issue Tables included Air Issues, Associated Air Issues (including Stratospheric Ozone, Acid Rain/Long Range Transport of Air Pollutants, Urban Smog, and Climate Change), Toxics, Waste, Technology, and Pollution Prevention. (The first Environmental Protection/Industrial Programs director was the Air Issues Table manager; and the Environmental Protection/Pollution Prevention director was the Pollution Prevention Table manager. The Environment Canada Project manager was the contact for Economic Instruments.)

Regarding objectives, the chief wrote:

[Conservation & Protection] is faced with demands from various quarters to find funds for taxes and new priorities to the amount of \$14million. When faced with a similar situation last winter, the approach was ad hoc and very unsatisfying to both the [assistant deputy minister] and all his managers. In an attempt to rectify the situation, the [Framework] was developed in order to document the way we spent our money and a Priority Setting mechanism [the Conservation & Protection Fiscal Restraint Project] was created to give an indication of our "soft" spots. While some decisions have been reached on unfunded items, there still remains a considerable list to tackle. In addition, it is recognized that this list could grow considerably with the possibility of dramatic cuts in government spending. This eventuality was avoided in the last Budget, but was evident in both the Quebec and Ontario Budgets and can still be anticipated once the current political uncertainty is resolved. In addition, it is clear to all managers that pro-rata reductions will nickel and dime everyone to death and the time is approaching where programs must be cut.

The current objective is to fund new priorities through a more objective approach than has previously been employed. The secondary objective is to develop a more rigorous process for the future.

The "political uncertainty" was due to the election. **The Mulroney Conservatives established the Election project as a priority for the federal government by now.** Mulroney stepped down as prime minister and retired as the Conservative Party leader; Campbell was the interim prime minister.

Regarding criteria, the chief wrote:

As a result of our own March meetings..., we were faced with the same problems and came up with a process [the June Budget Project] that would place us in better position by next April. Although events may seem to have overtaken us, it was those efforts that laid the basis for our current activity. [The Environmental Protection director general] rightly offered our process for the good of all. It was, however, a process with no criteria. [The Conservation & Protection/Finance & Administration director] had tried the well accepted government criteria often used in times of cuts and freezes by Treasury Board, which involved mandate, federal provincial affairs, international commitments, health and safety, and public service to no avail. [The Policy director general] and myself modified these to a weighted scheme, and with the help of [the Conservation & Protection/Management Accountability director and a



second Environmental Protection/Commercial Chemicals director] amplified them to include the concept of flexibility in delivery, as well as the idea of linkages, which is important for fundamental activities like our scientific, technological and inventory efforts. Discussions at Management Board removed the weighting scheme. We acknowledge this... has reduced the spread and hence the utility envisioned in part 1 of the criteria. Part 2 concerning flexibility also has problems since the questions on skills are posed incorrectly. Thus a yes to the two skills questions should receive a zero and a no should receive a score of 1.

There are other priority schemes under development, ones more clearly related to documenting environmental risk. These schemes will be available later in the year and could replace or be augmented by the current considerations. There are other ways we spend money that could be curtailed such as on training, travel, cellular phones, state of the art computers etc.... This is all to say that with regard to criteria we are in a state of enquiry, understanding and application. While I am sympathetic to the simplicity of dismissing the current criteria, please try to use them, find their limitations and provide some positive feedback into their improvement.

Regarding Issue Tables and the Operational Planning Framework, the chief wrote:

The current... Framework resulted from a need to revisit the Result Definition Model, as well as the Department entering into a single [Framework] with Treasury Board. In addition, it was time to start reflecting the changes that Green Plan had brought us. An additional incentive to complete the current model was the ad hoc nature of making decisions and the need for a more precise method of accounting for our expenditures. The [Framework] represents a significant step forward but should not be considered to be cast in stone if it does not work. There are nearly 60 level 3 "chewable chunks" and in an effort to provide a rational presentation to Management Board, [the Management Accountability director] has provided a series of ISSUE TABLES. These tables do not follow the [Framework] but may provide a better grouping. In addition, the strategic directions that [Environmental Protection] has been following during the last year by emphasizing Prevention, Control and Remediation may provide a better cut regarding our Business Lines. All this to say that within the dynamic of current events we have the opportunity to shape things for the future. The [Framework] cuts the cloth one way, Issue Tables another and the directions of [Environmental Protection] a third. What is best? Again your suggestions... would be valuable.

...The current Issue Tables are a way of... ensuring that by [late June] we have talked to each other and recognized, if not resolved, our differences.

Furthermore it is clearly recognized that the current process is not designed to compare Issue Tables. By this I mean that Toxics must be considered as Toxics and Wildlife as Wildlife. We will not be in a position to compare one against the other, even though this should be our long term goal. Therefore, we can only examine our 5%, 10% and 25% flexibility in terms of the "vertical component" of the Issue Table....

...We all recognize that the time available is limited. Consequently, we must realize that any process will be very limited... Everyone must realize that this is only step one in the development of new ways we will be doing business.

The rules included:

- the criteria

Try to apply, and derive a number for each of the level 4 and 5 elements that you have submitted to the [Framework]....

Provide written comments... to me in order that I can provide a positive synopsis for [the Environmental Protection director general].

- Issue Tables

Ensure that specific concerns are brought to the Issue Managers' attention. If you wish, you can alert me as well.

- the process

...Managers have the responsibility of advising [the director general] of their conclusions before [late June] and indicating all problems encountered. No surprises please.

Everyone has the responsibility of interacting as much as they deem necessary to achieve a mutually satisfying result.

Apart from concerns about the time frame, please inform me of all positive recommendations you might have regarding the development of this process required for the future. This is not meant to be a trap into which people unwittingly fall.<sup>35</sup>

*The Environment Canada Project.* Meanwhile, by early June, the 35-page CanTox report, called *Setting Environmental Priorities for Canada: A Review of the State-of-the-Art in Priority Setting Methods and Recommendations for a Canadian Approach*, had been received (in mid-May) and was being duplicated.

Responses to the Environment Canada Project manager's request for staff to join the Project Team had been received.

The manager updated the Core Director Working Group on the Environment Canada Project, and invited them to the Group meeting in mid-June. He wrote:

Now that the... [Canadian Petroleum Products Institute] Environmental [Priorities] Working Group's Report on Priority Setting is largely finished, we have had more staff time to devote to the [Environment] Priority Setting Exercise.... Things at long last are gelling and I think we are firmly on the path forward.

The manager attached copies of the material he sent to the Team to his memo for the Core Director Working Group's information. Copies of all material were to be sent to them.

The manager invited the Advisory Committee on Environmental Protection and Canadian Chemical Producers Association (and their National Environmental Quality Committee) to the Team meetings and workshop. The Advisory Committee invitation was drafted in late May. The manager wrote the third Association senior director:

I refer to your letter... regarding the willingness of [the Association]... to have some representatives participate actively in the Environment... Priority Setting Exercise...  
...We will hold an Organizational Meeting of the volunteer(ed) members of the several project teams.

The Environment Canada Project coordinator contacted the Canadian Environmental Network about the meetings and workshop. The Network executive director asked the coordinator for more information and wrote him, "We'll be in touch."

The coordinator also contacted a Mohawk Nation natural scientist. He later advised the Director General Steering Committee not to invite him because he would be invited as an expert not as government and therefore would be insulted. The Committee agreed.

The coordinator drafted a 10-page discussion paper on Project Team tasks.

Conservation & Protection/Ecosystem Sciences/Conservation drafted overheads for the early June Team meeting and wrote: The goal of the Environment Canada Project was to "develop a transparent approach to priority-setting with outputs that will guide both the Minister and the Department in determining the response to pollution problems resulting from social and economic activity." The scope was pollution problems, including "potentially harmful chemical substances, biological organisms or physical changes in the environment."

The first Team meeting was held. **By then, the Environment, other federal department (Industry), and International Joint Commission staff had joined the Team. At the meeting, Conservation asked the Team to advise whether the Environment Canada Project should be re-established as a priority, as shown below by excerpts from the meeting minutes. Also shown, the Team reviewed the draft detailed Project plan and advised that Environment and other federal department assistant deputy ministers should re-establish the Project.**

The Team met to review the background and purpose of the project, develop a common understanding of project tasks and deliverables, review and distribute reference and source material, and determine resource needs and propose a schedule for future meetings. About 24 members attended, including the Conservation/Ecosystem Risk Analysis socioeconomic risk analyst, Ecosystem Sciences/Water Research science liaison officer, Ecosystem Sciences/Strategic Planning science programs officer, Conservation & Protection/Environmental Protection/Regulatory Affairs economist, Conservation & Protection/Wildlife resource economist, Corporate Policy economist, and Environmental Protection/Industrial Programs senior engineer. Ecosystem

Sciences/Eco-Health, Environmental Protection/Waste Management, and Conservation & Protection/Communications, and Energy did not attend. The second Health/Health Protection director and Pulp & Paper Research Institute senior director (an Advisory Committee on Environmental Protection member) also attended.

"There were extensive discussions of how we should approach the project, our mandate, the proposed timeframe, and resource commitments required. Based on these discussions, we have the following conclusions and recommendations to offer."

Regarding organization, "The team opted for a general meeting of all participants, after which multi-disciplinary breakout groups meeting concurrently would be assigned to address specific tasks and report back to plenary sessions where team decisions would be taken."

Regarding Team meetings:

For this project to be a success, we need a consensus based approach with buy-in of all the players. This means that the team which is an advisory body must be representative (x-disciplines, x-services and x-partners).

The [assistant deputy ministers] must be asked to commit the necessary personnel (15-20 persons to attend three meetings.) If extraordinary costs are incurred (travel and accommodation of out-of-town participants), these costs should be defrayed from the project budget and they are currently unfunded.

We are open to the involvement of interested stakeholder groups and [environmental groups] (primarily [Advisory Committee] members) in the team as participants. [The senior director's] contribution at this meeting, for example, was very much appreciated.

However, we suggest that attendance be limited to participants and the practice of sending observers be discouraged: that is..., those in attendance can be expected to contribute to the work that has to be done.

Regarding the workshop:

The Workshop... will have to be rescheduled because of a conflict with a meeting of [the Priority Substances List 2 Project] and we suggest the following week....

....If we issue a general invitation, then... we may attract more than the forty participants and we are not currently funded to cover these additional costs. We should also consider paying an honorarium and defraying the costs incurred by [the environmental groups] we invite.

We propose that the workshop be a milestone-in-the-process. The focus will not be the review of finished deliverables but development of a draft proposal, a comprehensive description of the requirements for the finished product, that will permit a smaller task group (a multidisciplinary group of about six professionals assigned) to draft a working document which they will circulate for comment.

We recommend that this task group, selected from team members, be asked to submit a progress report for the [early] September meeting of [the Advisory

Committee] and the final report for review of the [Director General] Steering Committee by the end of September.

Regarding the next Team meeting:

The goal... will be to develop commitment to an action plan with outputs so that we can deliver a priority setting method to which everyone can comfortably subscribe within an agreed upon timeframe.

Presentation and discussion of the following action items will provide the basis...:

- Alternatives to a focus on Pollution Problems, such as Sustainability, that might serve as an organizing premise for our work - Concerns were expressed that we need:
  - to adopt a more holistic viewpoint
  - to make the linkages between the components more readily apparent and to be capable of addressing time lags, feedback loops and synergism
  - to strike a better balance between the conservation and presentation aspects of our mandate as well as to address wellbeing in a more comprehensive way (health from a human ecosystem and economic perspective)

[The first Atmospheric Environment director]... has agreed to receive your input and to review it with [the International Joint Commission senior environmental advisor] and [Parks ecosystem manager].... [The director] will provide us with a copy of a report based on Tony Hodge's PhD Dissertation... "Reporting on Sustainability - Human Wellbeing within the Context of Ecosystem Wellbeing" that we will distribute.... We suggest that you also look at the CanTox Report, the [Kennedy School of Government] and [United States Environmental Protection Agency] [Road Map to Comparative Risk] approaches.

If we can get timely feedback, we propose to ask the Conference Board to make a presentation on this alternative...

- Basic Principles that should govern the use of Priority Setting... for action by [the coordinator] plus others....
- The Steps and Components of the Method....  
We will ask different people to lead the discussion and review of different steps.... Please review the CanTox report and discussion papers we circulated...
- The Ordering of Project Tasks and Description of Deliverables (Everyone).

Other handouts included the Environment Canada Project coordinator's discussion paper, articles on the "'Zurich' Hazard Analysis" and "Priorizing [sic] Ecological and Human Welfare Risks from Environmental Stresses," background information for the Canadian Council of Ministers of the Environment's 1993 Environmental Scan stakeholder consultations, and a synopsis of a conference on "Setting National Environmental Priorities: The [Environmental Protection Agency] Risk-Based Paradigm and its Alternatives."

After the meeting, the science liaison officer reviewed the draft minutes and, in mid-June, wrote the coordinator:

[The Water Research director] takes this project very seriously and I have been instructed to commit whatever time is necessary or appropriate... I am certainly able to attend all three proposed dates. I am rather surprised that we can only find time to meet for three days when over three quarters of the participants are in the same city if not the same building... Are we still to assume that these one day meetings will probably go to 1.5 days?

"Priority setting framework development process" and similar phrases are offensively bureaucratic. ...I would be happy to never hear the word "framework" again.

In deciding... to work as a single team rather than as two task groups;... to see the process as rather less linear/ more heuristic than originally outlined...; and... to pursue a more integrated approach (environmental sustainability) to the development of criteria rather than the more established and tested split into health, ecological and socioeconomic risk, there is no doubt we have multiplied the work 3-4 fold. Given that the original tasks would have been extremely difficult to accomplish in six days even with... a secretariat, I can understand why you have redesigned the project so that we now serve to provide focussed input to preparation of a discussion document for the July Workshop. A laudably fluid response and... the final product will be better for it.

....If you are setting up a sub-group to examine Environmental Sustainability as a unifying criteria, I... welcome the opportunity to be a part of it.

(The director was a panel member at the February 1993 Advisory Committee meeting.)<sup>36</sup>

*The Canadian Petroleum Products Institute Project.* Meanwhile, in early June, the Competitiveness Issues Working Group revised their 19-page draft report on the Competitiveness Project.

**The Environmental Priorities Working Group finished the Final Draft of the Canadian Petroleum Products Institute Project report.** In the letter of transmittal, the second Petro-Canada senior manager and Conservation & Protection/Environmental Protection director general (the co-chairs) wrote,

The... Group is satisfied that the proposed methodology can now undergo testing to gauge its applicability and be further refined as applicable. The Co-Chairs... wish to acknowledge the professionalism and dedication of all its members in completing the assigned task.

Regarding conclusions/next steps, the Environmental Priorities Working Group wrote, similar to Draft 1:

Integration of environment and economy is the cornerstone of sustainable development which emphasizes the need for better decision-making functions. Better decisions require a clear sense of direction which presumes the need for priorities for action based on societal, environmental and economic considerations. The concept of setting priorities for human endeavours is well founded in society;

resources, whether time or money, are not infinite. The... Group's principle of cost-effectiveness underlies the development a formalized approach to decide where the downstream petroleum industry should expend its resources.

The [Environmental Priorities] Working Group feels that the proposed methodology will contribute to setting environmental priorities for action by the downstream petroleum industry. The priority setting process will contribute as one tool among the various tools which the industry and government use to aid in decision-making. While the overall model is somewhat tailed to the downstream petroleum sector, the... Group believes that it could be applied to other sectors, resulting in a more focused coordination of the Canadian environmental agenda.

The use of a multi-stakeholder approach to develop the model proved successful. The focused group discussions identified common ground as well as variances of opinions amongst members. While consensus did not occur at the same level in all areas explored, there was general agreement on the basic constructs of the methodology.

The [Environmental Priorities] Working Group recommends to the [Petroleum Products Industry] Task Force that the following next steps be considered:

- undertake trial runs of the model using all available information; identify information gaps and improvements and report to the Task Force;
- assemble the required multi-disciplinary specialist teams to support simulations of the model (health, environmental, economic assessments);
- modify and refine the model as appropriate in view of the elements above and report back to the Task Force;
- establish linkages with the [Canadian Council of Ministers of the Environment] through the Environmental Protection Committee... to ensure provincial jurisdictions are informed about progress made in environmental priority setting and [National] Air Issues Coordinating Committee;
- maintain links with the Advisory Committee on Environmental Protection... broader exercise on environmental priority; setting;
- inform other sectors of the model and its application.

The Working Group also wrote in the executive summary:

The following report contains a detailed description of the qualitative/quantitative methodology....

...A parallel process is proposed which considers public perception and how to deal with gaps between scientific fact and public perception.

A number of assumptions and limitations are presented which underline the subjective nature of the proposed methodology and its application.... The [Environmental Priorities] Working Group stresses the importance of reliable data and strong multi-disciplinary teams when using the model.

The Canadian Petroleum Products Institute manager sent the Final Draft to the Environmental Priorities Working Group for comments by mid-June. He wrote them, "Unless there are significant changes or comments, we will proceed with presenting the report to the... Task Force."

By mid-June, the Environmental Protection/Industrial Programs chief sent the late May Environment comments on communication needs for the Task Force report to

the director general. The director general wrote the first Institute senior director (and copied the Task Force co-chairs), similar to the comments:

I do not believe an elaborate communication program is necessary on completion of the Task Force report since the conclusions are technical in nature and do not result in immediate government or industry actions. Greater public awareness of the [Canadian Petroleum Products Institute] priority setting process will come out in the "Priority Setting Workshop" that Environment... is planning....

...I... leave it to a Task Force discussion to decide whether the appropriate level of distribution is at the Minister or Deputy Minister level. ...However,... since the recommendations... apply both to the companies and... government the reports should be sent equally to the heads.

The chief sent the director general's letter and the next to final draft reports on the Canadian Petroleum Products Institute and Competitiveness projects to the Conservation & Protection assistant deputy minister and director general (and copied the first Industrial Programs director and Environment Canada Project manager) as background for the late June Task Force meeting. He wrote them that they should be receiving final drafts directly from the Institute but they should not be significantly different, that a brief Task Force report should also be forthcoming, and that the meeting should be the last of the Task Force, at least for that phase of the work.

**By now, the Environmental Priorities Working Group, in the Canadian Petroleum Products Institute Project report, advised the Task Force to re-establish the Project as a priority (test the Canadian Petroleum Products Institute process), as shown below.**

**The Task Force finished Draft 1 of their five-page report.** They wrote in the introduction:

This report summarizes the deliberations of the [Environmental Priorities and Competitiveness Issues] Working Groups (whose reports are appended...)... They will be followed by further studies and reports by a successor to the Task Force whose membership will be somewhat enlarged but whose basic mandate will remain unchanged.

The Task Force acknowledges the contribution of all its members who have ably represented the perspectives and interests of their 'constituencies' in a remarkable spirit of goodwill. The Task Force has been a dynamic and effective forum for government, [the Institute] and the environmental community to enhance their understanding of the industry. It is hoped that this common effort will prevail into the future. It is imperative that initiatives by industry and government to strengthen the sector's competitiveness and environmental management be accompanied by efforts to improve the public policy framework.



Regarding task force consensus, the Task Force wrote:

Based on the progress of the two Working Groups, the Task Force... concluded that the industry requires a dual strategy.....

- The industry must allocate capital to the most cost effective and environmentally important problems where their capability to effect change is significant and urgent.

The Task Force... identified several challenges which will affect the level of success in implementing this strategy...:

- Industry, government, the environmental community and other stakeholders should work together to develop a rational, planned environmental agenda which will achieve Canada's environmental and health goals in a manner and timetable compatible with the industry's capability to effect change.
- Industry, government, the environmental community and other stakeholders should strive to prioritize [sic] environmental and health initiatives to ensure that the industry's, and the country's, scarce resources are allocated to the most important issues. The Environmental Priorities Working Group should continue to develop and test the prioritization [sic] model.

Next steps included:

- reconstituting the Task Force  
The... membership and mandate should be immediately reviewed to fulfill the need for an organization to continue beyond the original deadline.
- continue the development and testing of the Environmental Prioritization [sic] Model  
The... Model will require additional testing and consultations with other stakeholders and provincial governments in order to eliminate problems and to expand its applicability to other sectors.
- continue to examine and consult on the industry's competitiveness challenges for the future  
The Working Group on Competitiveness Issues should continue to examine the industry's non-environmental issues to reach consensus on joint government-industry action plans.

The first Institute senior director sent the Task Force report to the Task Force for comments. The director general sent it to the chief (in an urgent memo) and asked him for comments. He wrote him, "I would like to see and then get them signed off by [the Conservation & Protection assistant deputy minister]."<sup>37</sup>

***The Environment Canada Project.* Meanwhile, in early June, the Agriculture assistant deputy minister replied to the Conservation & Protection assistant deputy minister's invitation to join the Environment Canada Project and, as shown below, established the Project as a priority for Agriculture. The Agriculture director general (officially) joined the Director General Steering Committee.**

The Agriculture assistant deputy minister wrote the Conservation & Protection assistant deputy minister, "The initiative addresses an important need within the federal system and we wish to become involved." The Agriculture representative on the Committee was to be the director general.

**In mid-June, the Health/Health Protection director general replied to the Environment Canada Project manager's early May request to make staff available to the Project Team and, as shown below, re-established the Environment Canada Project as a priority for Health. The Health Protection biostatistician (also an Environmental Priorities Working Group member) joined the Team.**

The director general wrote the manager:

I... understand... that you have had the first meeting of the Priority Setting Project Team. ...It is important at this time to delineate how... [Health Protection] will be involved in this exercise.

...[Health Protection] is already participating through [the Advisory Committee on Environmental Protection]. [The assistant deputy minister] represents the Department at [the Advisory Committee] meetings. I will continue to participate (time permitting) on the... Steering Committee. [The second Health Protection director] will be the... member of the Core Directors Working Group. [The Health Protection biostatistician] will be the representative on the... Team. Unfortunately, the time available for other Directorate staff to participate... is very limited. ...We will not be convening a group of... [Health Protection] experts specifically to help develop a process to rank health-related environmental priorities. [The biostatistician] may call upon expertise within... and perhaps other Branches to assist him in the scoping, screening and scoring of environmental priorities.

I would like to emphasize that the priority setting process, developed by [Environment], will not necessarily result in environmental health priorities for [the Branch]. ...Priorities are established on the basis of numerous factors, not the least of which is ministerial prerogative. However, we are prepared to participate as fully as possible and to consider the possibility of using the [Environment] priority setting process in [the Branch]. I wish you and your colleagues every success in this challenging exercise.

The first Director General Steering Committee meeting was held. Before the meeting, Conservation & Protection/Ecosystem Sciences/Conservation revised the draft detailed Environment Canada Project plan, i.e., drafted overheads for the meeting. The timetable now included: the fifth Core Director Working Group meeting in early July, and a sixth in mid-July; three more Project Team meetings from late June to mid-July; a seventh Group meeting to review the Workshop plans in mid-July; the Workshop in late July; the draft report by the end of August; a briefing at an eighth Group meeting in early August; a progress report at a second Committee meeting in late August; a progress report at the Advisory Committee on Environmental Protection meeting in early

September; circulating the report for review and revision from early to late September; and the final report to the Conservation & Protection assistant deputy minister at the end of September.

**At the meeting, Conservation advised the Steering Committee (via the Environment Canada Project manager) to re-establish the Environment Canada Project as a priority, as shown below by excerpts from the overheads. Also shown by excerpts from the meeting minutes, manager's notes and meeting notes, and an Environment Canada Project coordinator's information note, the Committee reviewed the draft detailed Project plan and advised Environment to advise Forestry to establish the Project. Some Committee members questioned whether the Corporate Policy Project should be re-established, and whether the Environment Canada-Corporate Policy Project (to develop and use the Environment Canada and Hickling processes to determine Environment's priorities) should be established. The Committee questioned if the Corporate Policy and Canadian Petroleum Products Institute projects should be re-established now; and resolved the arguments about the Environment Canada process determining more than pollution priorities, and ending the Corporate Policy Project because neither quantitative risk assessors nor benefit-cost analysts should help decide Environment's priorities. They decided that the process should determine more than pollution priorities, advised Environment to re-establish the Corporate Policy Project, and recommended the assessors and analysts help decide Environment's priorities in the Hickling process. The Committee re-established the Environment Canada Project for Environment and other federal departments (develop the Environment Canada process). The Ecosystem Sciences director general advised some Environment (Science Advisor) and other federal department (Transport, Finance, and Fisheries) director generals to re-establish it. The manager's notes, written on the overheads, are in italics.**

The Committee met to review and approve the purpose, objectives, outputs, and audience for the Environment Canada Project; consider its relationship to other initiatives; review and approve the process and timetable, and determine the next steps; and promote the cooperation, involvement, and collaboration of the partners. All director generals but one attended or were represented. The Agriculture director general was represented by an Agriculture senior environmental analyst (a Project Team member).

The coordinator, Conservation/Ecosystem Risk Analysis socioeconomic risk analyst, and Corporate Policy economist also attended. The manager presented the Environment Canada and Canadian Petroleum Products Institute projects. The Corporate Policy director general presented the Corporate Policy Project.

Regarding the purpose, objectives, outputs, and audience of the Environment Canada Project, the manager told the Committee:

**Purpose:**

- to respond to the growing awareness that we can not collectively meet all the demands placed on us in a timely manner without first providing a focus for action by communicating what is fundamentally of concern *[and how we arrived at decision]*
- to facilitate the integration of existing priority setting activities

**Objective:**

"Develop a transparent and consistent approach to priority-setting with outputs that will guide both the Minister *[Ministers]* and the Department in determining the response to pollution problems resulting from social and economic activity."

**Scope:** *[could be very broad and may ultimately be so, but in the initial instance trying to focus it narrowly on [Conservation & Protection's] major trad. activities and interests]*

pollution problems -  
potentially harmful chemical substances *[primarily]* , biological organisms *[secondarily]* or physical changes in the environment *[not a specific focus... (climate change as well as development projects for [Environmental Assessment & Review Process])]*

**Example Issues:**

- ozone depletion....
- habitat loss/biodiversity
- waste combustion
- water diversions *[non-pollutant]*
- climate change
- remediation

**Audience:** *[Three levels:]*

*[• [Environment]]*

- minister [ministers]
- senior management

*[• other "regulators" or "regulatees"]*

- other levels of government.... *[Alta particularly]*
- partners...
- stakeholders (eg. Industries) *[labour, standards associations]*

*[• others - our watch dogs]*

- [environmental groups]
- general public *[somewhere there might even be a parliamentary interest]*

The Committee concluded or decided:

The project's purpose was confirmed, it being noted that the text of the... overhead should be... entirely... positive...;

The objective... was confirmed.

Discussion... raised three points of significance, that:

- the project is exploratory to investigate and test the possibility of developing and using a standardized methodology for prioritizing [sic] environmental issues and providing guidance to decision-makers, in particular it is not intended that the outputs would alone, set priorities for policy or programs,
- the scope of the project should not be limited... to chemical pollution problems but broadened to explore issues of conservation and environmental sustainability from all sources of stress, although... it was agreed that chemical pollution problems should be dealt with specifically in order to meet the expectation of the original stakeholders and the commitments made to them by the Department to attempt to enhance the methodology developed by [the Canadian Petroleum Products Institute], and that
- the broadening... did not include the issues of resource management per se (e.g. management of fish stocks).

The stated audience was accepted, with the note that since the project would deal with issues in a broader manner, the primary audience... should read MINISTERS, that LABOUR should be shown as a STAKEHOLDER, and that emphasis should be given to indicate positively the opportunity and desire for the audiences to participate in the development of the... methodology.

In view of the decision to broaden the scope..., it was concluded that:

- Forestry... should be invited to participate (the Chairman indicated that they would be...);
  - the priorities... would be expected... to structure the discussions in the development of the environmentally related policies and programs of all Departments..., and that
  - accordingly Environment... was the "Managing Partner" of "Equal Partners."
- 
- The public expects leadership from the federal government and a priority setting approach in keeping with [Environment's] broader mandate should be considered.
  - It should be emphasized that although Environment... is the "Managing Partner" or "First among Equals," all the partners are equal and that use of priority setting methods would not be binding but would only be used to structure discussions among our partners.

Regarding the relationship of the Environment Canada Project to other initiatives, the Committee concluded or discussed:

The relationship between the [Environment] Priority Setting Exercise and [Canadian Petroleum Products Institute] Exercise was clear, and it was understood that Environment... had committed to attempt to enhance (through its Exercise) the criteria and methodology used in the [Institute] approach.

While there was an understanding for and encouragement to [Environment] to undertake a prioritization [sic] study of the nature and purpose of the Hickling Exercise, many expressed the desire to find out more about the Hickling approach and some expressed concern as to its feasibility and value - particularly about the

use of cost-benefit analysis and how this would influence the treatment of scientific research and emerging issues.

It was accepted that the Priority Setting and Hickling projects are compatible initiatives and that the outputs of the Priority Setting exercise could be valuable inputs for the Hickling project, there remained some concern about how and when they would be brought together.

Concern was expressed that overall two or three tracks should not be pursued simultaneously due to the potential for confusion and the availability of resources to meet the demands involved.

The advantages of environment-economy linkages could be seen and there was agreement that these should be forged sooner rather than later.

While the Hickling project was presented as being a purely internal [Environment] project and very much of an investigative nature, ...[Corporate Policy] undertook to report on the Hickling project to the [Committee].

Regarding the process, timetable, and next steps, the manager also told the Committee:

#### Path Ahead

- short run [Phase 1] (Sept)...
- medium term [Phase 2] (Oct) *[much more time]*
- long range [Phase 3] (Nov) *[impossible for final or even a buy in]*

The Committee concluded or discussed:

The proposed process was accepted with the note that... all members of the expected audience for the outputs should be invited and encouraged to participate in it.

The timetable was extensively discussed and it was noted that it was ambitious, however the need to make a progress report to [the Advisory Committee on Environmental Protection] in early September was seen to bind the Departments to attempt to meet the timetable.

The members accepted that there were conflicting demands on the resources identified and committed to participate in the project teams, and that therefore expectations must be scaled accordingly, the immediate objective being develop what could be developed in the time available and to make whatever progress could be made in this very complex project.

The proposed path ahead... was subject to considerable discussion, and in particular, it was agreed that the complexity of the project would require a very considerable amount of consultation, review and revision before any... Departments could be expected to buy-in to the process... - therefore it was not possible to establish the next steps beyond making a commitment to review the Report of the Workshop and the proposed progress report to [the Advisory Committee] at the next meeting...

The medium... and long term steps... were therefore considered on hold until the short run stage had been completed in September.

The Ecosystem Sciences director general (the chair) in his concluding remarks, asked Steering Committee members whose organizations had not joined the Core Director Working Group or Project Team to consider nominating staff. "He noted that to keep the project manageable, expectations should be kept realistic and modest."

Regarding introductions, the manager wrote in his notes:

- [Ecosystem Sciences director general]: sceptical how to do this in a semi scientific way to such a complex fate.
- [Finance director]: important, must try to do
- [Finance director general]: on [Petroleum Products Industry Task Force] - thinks it can be done - good progress - see if can be applied.
- [Agriculture economist]: wait to see thinking, have done some work on key Env'l Issues for Agriculture...
- [Science Advisor director]: interested professional
- [Industry director general]: very interested, [Advisory Committee], high importance to do it, somewhat sceptic. - have to do but how will political level deal with/dispose of it? (Cabinet?)
- [Conservation & Protection/State of Environment Reporting senior economic advisor]: interest in [risk assessment] methodology, how this could link to [State of Environment] 5 year reports.
- [Atmospheric Environment director general]: supportive, how to organize issues... how to put in "the untouchables," political pressures, and inevitables - how do we deal with science and research (must not get pushed to the bottom). how the Hickling cost/benefit and others may interact....
- [Fisheries director general]: curious about exercise, what may be in it for us, what [Environment] may 'steal', what we can share, make sure fisheries interests are reflected
- [Corporate Policy director general]: macro interest rather than micro, what about Green Plan, how to set priorities for macro policies. because of this - watching [Canadian Petroleum Products Institute] with interest. Hickling to see if traditional [cost/benefit] & uncertainty analysis & consultation can set objectives at macro level. want to see if we can be more systematic in setting macro agenda
- [Health/Health Protection]: wants to see how these priorities might compare. very ambitious, has been tried before, complex... [Canadian Petroleum Products Institute] process is basically numeric and may be problematic. Still worth the effort and want to be in. Health concern is this may drive the health agenda when perhaps it should not. how do this relate to [risk assessment] and [risk management] which are two separate stages.
- [Transport]: interested, want to learn, involved in stewardship, and looking at own problems. need to establish own priorities (this may help). [Transport] with [Transportation Association] of Canada has an agreed code of ethics – [Association] may use this.
- [Conservation & Protection/Wildlife]: needs to be involved - conservation angle (sustainable development) biodiversity and value thereof. protection side for wildlife... to see how they fit.

As shown above, some Steering Committee members questioned if benefit-cost analysts (vs other economists) should help decide Environment's priorities.

In other words, the Steering Committee approved Phase 1 of the Environment Canada Project plan (to develop the Environment Canada process).<sup>38</sup>

### Discussion

#### The Imperial Oil Project

*Establishing it for Environment and Industry.* During the process of not establishing the Imperial Oil Project as a priority for Environment and Industry, the Interdepartmental Committee - including the Industry economist - and the Priority Setting-Risk Assessment Committee - including the Conservation & Protection/Environmental Protection/Regulatory Affairs economist - argued to the Memorandum of Understanding Steering Committee not to allocate resources to this Project (and advised to allocate resources to the Interdepartmental Committee Project). Then the Steering Committee - the final decision-maker for the Imperial Oil Project - decided not to allocate resources to this Project (or to the Interdepartmental Committee Project), so the Industry and Regulatory Affairs economists seemed to have a major influence on the decision.

In this process, the Industry economist seemed to be asked for advice by the Interdepartmental Committee (including the Regulatory Affairs director), and to offer it to them; the Interdepartmental Committee were asked by the Steering Committee, and offered it to them; the Regulatory Affairs economist was asked by the director, and seemed to offer it to the Priority Setting-Risk Assessment Committee; and the Priority Setting-Risk Assessment Committee were asked by Conservation & Protection, including their assistant deputy minister (a Steering Committee member), and offered it to the Steering Committee (via the Interdepartmental Committee). So perhaps the Industry and Regulatory Affairs economists had a major influence on the decision because *they were asked and offered*. But why were they asked, and why did they offer? In the process that was to be developed and used in this Project - the Imperial Oil process - it seemed that government and non-government experts were to be asked by the Advisory Committee on Environmental Protection, including the Steering Committee.

Like the economists, the Steering Committee members were public servants, but unlike them, they were managers (Environment and Industry senior), not experts, although they had expertise, e.g., the Conservation & Protection assistant deputy



minister in engineering. So perhaps the major influence by the economists on the decision did not make a significant difference to determining "good" environmental priorities because the Steering Committee knew as much as they did about the science of deciding priorities. In addition, the other Interdepartmental and Priority Setting-Risk Assessment committee members included Environment and other federal department managers with expertise in engineering, economics, and natural science. Further, the other participants - including Environment managers who had expertise in economics and natural science - did not seem to question if this Project should not be established, with the major exception of the Imperial Oil senior manager who advised the Advisory Committee to establish it, and the minor exception of the Conservation & Protection assistant deputy minister who asked the Conservation & Protection/Ecosystem Sciences and Environmental Protection director generals to advise if it and the Canadian Petroleum Products Institute and Hickling projects should not be established, the Environment Canada Project re-established, and the Priority Substances List 2 Project ended. In particular, the Corporate Policy assistant deputy minister argued to the Environment deputy minister (the final decision-maker for Environment) and Conservation & Protection assistant deputy minister not to establish this Project and advised them to establish the Environment Canada Project; the Ecosystem Sciences/Conservation/Strategic Planning chief advised the Ecosystem Sciences director general that this Project should not be; the Ecosystem Sciences director general argued to the Conservation & Protection assistant deputy minister not to establish it or the Canadian Petroleum Products Institute Project, and advised him to re-establish the Environment Canada Project; the Ecosystem Sciences, Environmental Protection, and Conservation & Protection/Policy director generals argued to the Conservation & Protection assistant deputy minister not to establish this Project, re-establish the Environment Canada Project, and end the Canadian Petroleum Products Institute Project. But what did other government experts know?

#### The Interdepartmental Committee Project

*Establishing it for Environment.* During the process of not establishing the Interdepartmental Committee Project for Environment and Industry, the Interdepartmental Committee - including the Industry economist - and the Priority Setting-Risk Assessment Committee - including the Conservation &

Protection/Environmental Protection/Regulatory Affairs economist - advised the Memorandum of Understanding Steering Committee to allocate resources to this Project (and argued not to allocate resources to the Imperial Oil Project). Then the Steering Committee - the final decision-maker for the Interdepartmental Committee Project - decided not to allocate resources to this Project (or to the Imperial Oil Project), so the Industry and Regulatory Affairs economists seemed to have no influence on the decision.

In this process, the Industry economist seemed to be asked for advice by the Interdepartmental Committee (including the Regulatory Affairs director), and to offer it to them; the Interdepartmental Committee did not seem to be asked, but offered it to the Steering Committee; the Regulatory Affairs economist seemed to be asked by the Priority Setting-Risk Assessment Committee, and to offer it to them; and the Priority Setting-Risk Assessment Committee did not seem to be asked, but offered it to the Steering Committee (via the Interdepartmental Committee). So perhaps the Industry and Regulatory Affairs economists had no influence on the decision because *although they offered advice to the Steering Committee, they were not asked for it by them*. But why were they asked (by anyone), and why did they offer? In the process that was to be developed and used in this Project - the Interdepartmental Committee process - it seemed that government and non-government experts were to be asked by the Advisory Committee on Environmental Protection, including the Steering Committee, and selected others.

Like the economists, the Steering Committee members were public servants, but unlike them, they were managers (Environment and Industry senior), not experts, although they had expertise, e.g., the Conservation & Protection assistant deputy minister in engineering. So perhaps the lack of influence by the economists on the decision did not make a significant difference because the Steering Committee knew more than they did about the science of deciding priorities. Yet, the other Interdepartmental and Priority Setting-Risk Assessment committee members included Environment and other federal department managers with expertise in engineering, economics, and natural science. Further, the other participants - including an Environment manager who had expertise in natural science - questioned if this Project should not be established, with the minor exception of the Conservation & Protection assistant deputy minister who asked the Conservation & Protection/Ecosystem Sciences and Environmental Protection director generals to advise if it should be established, the

Imperial Oil, Canadian Petroleum Products Institute, and Hickling projects not established, and the Priority Substances List 2 Project ended. In particular, CanTox advised the Interdepartmental and Priority Setting-Risk Assessment committees that this Project should be established; the Environment Canada Project coordinator advised that it should be, but the Imperial Oil and Canadian Petroleum Products Institute projects should not be; the Ecosystem Sciences director general advised the Conservation & Protection assistant deputy minister to establish this Project and argued against the Canadian Petroleum Products Institute and Imperial Oil projects; the Industry assistant deputy minister (a Steering Committee member) advised the Conservation & Protection assistant deputy minister to establish this Project. But what did other government experts know?

### The Environment Canada Project

*Re-establishing it for Environment.* During the third process of re-establishing the Environment Canada Project for Environment, the Policy Advisory Committee - the interim decision-maker for the Project - decided to allocate more time to this Project. Government experts did not offer advice, so they seemed to have no influence on the decision.

In this process, similar to the first and second processes of re-establishing the Project for Environment (discussed in Chapter 3), government experts were not asked for advice, and did not offer it. So perhaps they had no influence on the decision because *either they were not asked or did not offer*. But why were they not asked, and why did they not offer? In the process that was to be developed and used in this Project - the Environment Canada process - Environment and now other federal department experts were to be asked by Environment.

Like government experts, the Committee members were public servants, but unlike them, they were managers (Environment), not experts, although they had expertise, e.g., the Corporate Policy assistant deputy minister in economics. So perhaps the lack of influence by government experts on the decision did not make a significant difference because the Committee knew as much as (or more than) they did about the science of deciding priorities. Also, the other participants - including Environment and other federal department senior managers with expertise in engineering, economics, and natural science - did not question if this Project should be re-established (develop the

process). In particular, after the Conservation & Protection assistant deputy minister (the final decision-maker for it) re-established it, the Conservation & Protection assistant deputy minister asked the Director General Steering Committee to advise whether it should be (use the process); the Atmospheric Environment, Parks, and Corporate Policy assistant deputy ministers re-established it; the Transport, Health/Health Protection, Industry, Energy, and Finance assistant deputy ministers established it; the Environment Canada Project manager advised the Corporate Policy director (and other Core Director Working Group members) that it should be re-established and argued the Corporate Policy Project should be ended. But what did government experts know?

*Re-establishing it for Environment and other federal departments.* During the first process of re-establishing the Environment Canada Project for Environment and other federal departments, the Project Team - including the Conservation & Protection/Ecosystem Sciences/Water Research natural scientist, Ecosystem Sciences/Strategic Planning economist, Ecosystem Sciences/Conservation/Ecosystem Risk Analysis economist, Conservation & Protection/Environmental Protection/Regulatory Affairs economist, Conservation & Protection/Wildlife economist, Corporate Policy economist, and Environmental Protection/Industrial Programs engineer - advised Conservation (including the Environment Canada Project manager) to allocate more time and staff to this Project. The manager advised the Director General Steering Committee - including the Agriculture economist - to allocate more time (not staff). Then the Committee - the interim decision-maker for the Project - decided not to allocate more time, so the natural scientist; Strategic Planning, Ecosystem Risk Analysis, Regulatory Affairs, Wildlife, and Corporate Policy economists; and engineer seemed to have a minor influence on the decision. And the Agriculture economist seemed to have a major influence. Other government experts did not offer advice, so they seemed to have no influence.

In this process, the natural scientist; Strategic Planning, Ecosystem Risk Analysis, Regulatory Affairs, Wildlife, and Corporate Policy economists; and engineer seemed to be asked for advice by the Team, and to offer it to them; the Team were asked by Conservation, and offered it to them; Conservation were not asked, but offered it to the Committee (via the manager); the Agriculture economist seemed to be asked by the Committee (via the Agriculture director general), and to offer it to them; and other government experts did not seem to be asked, or to offer. So perhaps the natural

scientist; Strategic Planning, Ecosystem Risk Analysis, Regulatory Affairs, Wildlife, and Corporate Policy economists; and engineer had only a minor influence on the decision because *either they were not asked by the Committee or did not offer it to them*. The Agriculture economist had a major influence on the decision because *either basically he was asked by the Committee or offered it to them*. And other government experts had no influence because *either they were not asked or did not offer*. But why was the Agriculture economist asked, and why did he offer? Why were the natural scientist, other economists, and engineer asked (by anyone), and why did they offer? And why were other government experts not asked, and why did they not offer? In the process that was to be developed and used in this Project - the Environment Canada process - Environment and other federal department experts were to be asked by Environment.

Like government experts, the other Committee members were public servants, but unlike them, they were managers (Environment and other federal department), not experts, although they had expertise, e.g., the Ecosystem Sciences, Environmental Protection, and Corporate Policy director generals in natural science, natural science, and economics, respectively. So perhaps the minor influence by the natural scientist; Strategic Planning, Ecosystem Risk Analysis, Regulatory Affairs, Wildlife, and Corporate Policy economists; and engineer on the decision did not make a significant difference because the Committee knew more than they did about the science of deciding priorities. The major influence by the Agriculture economist did not make a significant difference because the Committee knew as much as he did the science. And the lack of influence by other government experts did not make a significant difference because the Committee knew as much as (or more than) they did about the science. Yet, the other Team members (including the Environment Canada Project manager) from Environment and other federal departments had expertise in economics, sociology, engineering, and natural science. Still, they and the other participants - including Environment and Agriculture senior managers with expertise in economics and natural science - did not question if this Project should be re-established. In particular, after the Policy Advisory Committee (including the Corporate Policy assistant deputy minister) re-established it, the Environment Canada Project coordinator advised that it should be re-established and the Conservation & Protection Fiscal Restraint project ended in the long term; the Fisheries assistant deputy minister established this Project; the Agriculture assistant deputy minister did the same. But what did other government experts know?

It is important to note that some participants in the Environment Canada and other projects continued to question if experts from certain organizations or in certain disciplines should be involved in determining environmental priorities, and how they should be involved. First, the Environment Canada Project manager argued to the Corporate Policy director and other Core Director Working Group members that neither quantitative risk assessors nor benefit-cost analysts (vs qualitative risk assessors and other economists) should help decide Environment's priorities. Second, the manager argued to the Energy senior economist that the public should help decide petroleum products industry pollution priorities (vs experts alone). Finally, some Director General Steering Committee members questioned if benefit-cost analysts (vs other economists) should help decide Environment's priorities.

Generally, however, the participants all still seemed to agree that at least some experts (neither quantitative risk assessors nor benefit-cost analysts) knew best about the science of deciding priorities.

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## CHAPTER 5 IMPLEMENTATION OF THE ENVIRONMENT CANADA PROJECT PLAN

In this chapter, I discuss the influence that government experts had in the second process of re-establishing the Environment Canada Project as a priority for Environment and other federal departments, and the fourth process of re-establishing it for Environment. The second process began in June 1993 and ended in August 1993 when the Director General Steering Committee approved Draft 1 of the Project report. And the fourth process began and ended in September 1993 when the Conservation & Protection assistant deputy minister approved Phase 3 of the Project plan (to use the Environment Canada process).

During this three-month period, several other processes of determining environmental priorities occurred. The process of re-establishing the Canadian Petroleum Products Institute Project for Environment and other federal departments (and others) ended, and the process of not establishing the Expanded Environment Canada-Canadian Petroleum Products Institute Project (to develop and use the Environment Canada-Canadian Petroleum Products Institute process to determine national environmental priorities - the Expanded Environment Canada-Canadian Petroleum Products Institute process) for Environment and other federal departments began. I also discuss in this chapter the influence that government experts had in these processes.

I show that the Natural Resources/Energy (formerly Energy) economist and Health/Health Protection statistician seemed to have a major (deciding) influence on the decision by the Petroleum Products Industry Task Force to re-establish the Canadian Petroleum Products Institute Project for Environment and other federal departments. I suggest that the economist and statistician had a major influence because either they were asked for advice or offered it. I also suggest that the major influence by the economist and statistician did not make a significant difference to determining "good" environmental priorities because the Task Force knew as much as they did about the science of deciding priorities (and the administration and policy of it).

Secondly, I show that the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis natural scientist, Ecosystem Risk Analysis economist, and Industry economist seemed to have a minor influence on the decision by the Director General Steering Committee to re-establish the Environment Canada Project as a priority for Environment and other federal departments. The

Agriculture economist seemed to have a major influence. And other government experts seemed to have no influence. I suggest that the natural scientist, and Ecosystem Risk Analysis and Industry economists had only a minor influence because although they offered advice to the Committee, they were not asked for it by them. The Agriculture economist had a major influence because basically he was asked by the Committee and offered it to them. And other government experts had no influence because either they were not asked or did not offer. I also suggest that the minor influence of the natural scientist, and Ecosystem Risk Analysis and Industry economists did not make a significant difference because the Committee - including the Agriculture economist - knew more than they did about the science of deciding priorities. The major influence of the Agriculture economist did not make a significant difference because the Committee knew as much as he did about the science. And the lack of influence by other government experts did not make a significant difference because the Committee knew as much as (or more than) they did about the science.

Finally, I show that government experts seemed to have no influence on the decision by the Conservation & Protection assistant deputy minister to re-establish the Environment Canada Project as a priority for Environment. I suggest that they had no influence because either they were not asked for advice or did not offer it. I also suggest that their lack of influence did not make a significant difference because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities.

#### Director General Steering Committee Approval of the Report (Draft 1)

In this section, the second process of re-establishing the Environment Canada Project as a priority for Environment and other federal departments began and ended. Several other processes of determining environmental priorities intersected with this one, including the processes of re-establishing the Canadian Petroleum Products Institute, Environment Canada, and Corporate Policy projects for Environment, Natural Resources, other federal departments, the Canadian Petroleum Products Institute, and two environmental groups.

Specifically, the Conservation & Protection/Environmental Protection/Industrial Programs chief advised the first Industrial Programs director to advise the Conservation & Protection assistant deputy minister to re-establish the Canadian Petroleum Products

Institute Project. The manager advised the director and chief to advise the Conservation & Protection assistant deputy minister not to re-establish it now. The Petroleum Products Industry Task Force advised the Institute/Board of Directors to re-establish it (test the Canadian Petroleum Products Institute process). The Conservation & Protection assistant deputy minister advised a Natural Resources/Policy assistant deputy minister to establish the Environment Canada Project. The Corporate Policy director general advised the Policy Advisory Committee to re-establish the Corporate Policy Project (test the Hickling process). And some National Workshop participants advised the Project Team - including the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis ecological risk analyst, Ecosystem Risk Analysis socioeconomic risk analyst, Ecosystem Sciences/Water Research science liaison officer, Ecosystem Sciences/Strategic Planning science programs officer, two Ecosystem Sciences/Eco-Health environmental quality guidelines specialists, Conservation & Protection/Wildlife resource economist, Environmental Protection/Regulatory Affairs economist, Corporate Policy economist, Natural Resources/Forestry forest resource economist, Energy senior economist, Energy analyst, Industry environmental analyst, Industrial Programs senior engineer, and Health/Health Protection biostatistician - to continue making the Environment Canada Project a priority. Then the Task Force re-established the Canadian Petroleum Products Institute Project for Environment, other federal departments, the Institute, and two environmental groups (test the Canadian Petroleum Products Institute process), and the Competitiveness Project. And they updated the Industry and other federal department ministers on their decision to do so.

The manager advised the Team to continue making the Environment Canada Project a priority, and other Workshop participants to make it one. Then the Ecosystem Sciences director general seemed to re-establish it for Environment.

The director general and Core Project Team - including the socioeconomic risk analyst, ecological risk analyst, and Industry environmental analyst - advised the Director General Steering Committee to re-establish the Environment Canada Project. And the manager advised them the same. Then the Steering Committee - including the Agriculture senior environmental analyst - re-established it for Environment and other federal departments.

During these processes of determining environmental priorities, two arguments continued and emerged about who should be involved in deciding priorities more

generally, and the scope of a process for determining them. First, Corporate Policy argued to the Steering Committee and Group that benefit-cost analysts should help decide Environment's priorities. Second, many Project Team members argued to Conservation that the Environment Canada process should determine more than federal government priorities. And some Workshop participants argued the same to the Project Team.

At this point, the Project Team resolved the argument about the Environment Canada process determining more than federal government priorities the first time. They recommended the process determine more. The Core Project Team resolved the argument the second time. They recommended the process not determine more. And the Group (via the manager) resolved the argument about benefit-cost analysts helping decide Environment's priorities. They did not recommend benefit-cost analysts help in the Environment Canada process. The other arguments were not resolved during this period, June 1993 to August 1993.

#### Evidence

In mid-June 1993, the Environment Canada Project continued as Conservation & Protection proceeded to implement Phase 1 of the Project plan, led by Conservation & Protection/Ecosystem Sciences.

The Environment Canada Project manager informed the Core Director Working Group and Project Team about the mid-June Director General Steering Committee meeting. He wrote them, "Some key decisions were made that should be communicated to you immediately.... Therefore, we must accept that [late June] and the other dates are confirmed dates and that preparations for and participation in the meetings is expected."

The Committee now included the Parks director (but later the Group included him). The multidisciplinary Team now included 29 Environment and four other federal department staff. And the Environment Canada Project coordinator was the Project leader.<sup>1</sup>

*The June Budget Project.* By now, the proposed "criteria for priority setting" had been discussed with Conservation & Protection/Environmental Protection management board in order to evaluate Environmental Protection's environmental protection

programs. An Environmental Protection/Operations director wrote the Conservation & Protection/Ecosystem Sciences/Environmental Assessment director (and copied the Environmental Protection, Ecosystem Sciences, and Conservation & Protection/Policy director generals, and others):

In order to facilitate a comparable analysis, we came to a number of decisions regarding interpretation of the ten criteria. Just as it is important to have a standardized reference frame for internal [Environmental Protection] analysis, it is perhaps even more important to have a similar standardized reference frame between [Environmental Protection], [Ecosystem Sciences] and [Conservation & Protection/Wildlife]. In order to facilitate this, we would like to offer our understanding of how each of these questions should be interpreted and scored.... I hope this helps in creating a "level playing field" for future discussions.

See Appendix 2 for the questions and interpretations.<sup>2</sup>

*The Canadian Petroleum Products Institute and Environment Canada projects.*  
The Conservation & Protection/Environmental Protection/Industrial Programs chief drafted a letter from the Conservation & Protection assistant deputy minister to the first Canadian Petroleum Products Institute senior director commenting on Draft 1 of the Petroleum Products Industry Task Force report, and sent it to the Industrial Programs director (and copied the Environment Canada Project manager). **The chief advised the director to advise the assistant deputy minister to re-establish the Canadian Petroleum Products Institute Project as a priority, as shown below.**

In the letter, the assistant deputy minister wrote the senior director:

...The overall thrust... is in line with [Environment's] expectations of the consultative process.

With regard to the... "Next Steps," we are fully prepared to support items 1 [reconstituting the Task Force] and 2 [development and testing of the Environmental Priorization [sic] Model] and are also prepared to work on item 3 [examine and consult on the industry's competitiveness challenges for the future] to the extent there are environmental implications.

...The fact that the "Joint Government Industry Committee on Transportation Fuels and Motor Vehicle Control Technologies" has been set up should be taken into account in developing the mandate of [the Task Force].

Regarding [item 2] we will assist in this work. Insights gained by applying the [Institute] methodology should aid in the development of a similar process in the department.



**The manager reviewed the letter, and advised the director and chief to advise the assistant deputy minister not to re-establish the Canadian Petroleum Products Institute Project as a priority now, as shown below.**

The manager wrote the director and chief:

I believe that paragraph 4, concerning our departmental "willingness to participate in the further development and testing of the... Model" should be modified by adding something to the effect that, "the timing... should take into account the fact that the Department is now... developing its model, and that it would be difficult to support both exercises simultaneously.... ...May I suggest that the further development of the [Institute] model be held until the [Environment] effort has been made and the results assessed.

I would note that all [director generals] attending the [Environment] Priority Setting Exercise meeting [in mid-June] (including those from [Energy, Finance, Industry]) said we cannot support two or three tracks at the same time (here they were referring primarily to Hickling) on the basis of the scarcity of human resource time.

**The Task Force sent their report to the Canadian Petroleum Products Institute/Board of Directors for discussion at their late June meeting, and advised them to re-establish the Canadian Petroleum Products Institute Project as a priority (test the Canadian Petroleum Products Institute process).<sup>3</sup>**

*The Environment Canada Project.* The Conservation & Protection/Ecosystem Sciences director general sent the Director General Steering Committee the draft minutes of their mid-June meeting for review and comment, and suggested they next meet at the end of August to review and discuss the report on the National Workshop and the Advisory Committee on Environmental Protection progress report. He wrote that this date represented a compromise between the maximum amount of time to prepare and circulate the report to the Steering Committee and a reasonable amount of time to finalize the progress report.

Ecosystem Sciences/Conservation drafted a report called R&D Activities 1993-94. It included a section called Risk Assessment/Priority Setting Processes. Conservation wrote in the section:

#### Introduction

A strategy is needed to bridge the gap between industry groups and government, science and economics and to influence management priorities and intervention strategies (e.g., resource allocation for research, monitoring, and non-regulatory controls) within the federal government. A working group led by [Environment, Industry, and Health] are developing a common interdepartmental response to a

proposed environmental priority setting action plan based on the development of a comprehensive ecosystem risk assessment framework, methods and procedures....

#### R&D Results

- improve quality of resource allocation by federal departments... by means of a fully documented priority setting guideline based upon a commonly accepted ranking framework and methodology for assessing ecosystem risk
- further improvement of resource allocation decisions by incorporation of regional socio-economic indicators into the guideline.

#### Prognosis

A first draft of the guideline is expected in November 1992 [sic]. In 1994-95, it is expected that the guideline will be further refined by applying it to various industrial sectors.

**At the end of June, at the second Project Team meeting, many Team members argued that the Environment Canada process should determine more than federal government priorities, as shown below by excerpts from the meeting minutes and various overheads.**

The Team met to revise the detailed Environment Canada Project plan, i.e., develop an action plan, and to "share responsibility" for it. About 20 members attended, including the Conservation/Ecosystem Risk Analysis socioeconomic risk analyst, Ecosystem Risk Analysis ecological risk analyst, the first Ecosystem Sciences/Eco-Health environmental quality guidelines specialist, Ecosystem Sciences/Water Research science liaison officer, Conservation & Protection/Environmental Protection/Industrial Programs senior engineer, Environmental Protection/Regulatory Affairs economist, Conservation & Protection/Wildlife resource economist, Corporate Policy economist, Health/Health Protection biostatistician, and now a Conference Board senior research associate. Ecosystem Sciences/Strategic Planning, Conservation & Protection/Communications, Parks, Energy, and Transport did not attend. A second Mining Association senior director was invited but did not attend.

The Team discussed environmental sustainability, an ecosystem perspective, the issue profile, case studies, and scoring and weighting issues.

The senior research associate gave a presentation on "sustainability as an organizing concept for environmental priority setting." (The Conference Board re-established their Project, "to develop, for the consideration of Canadian public policy formation in the mid-1990s, at least two alternative decision-making frameworks for setting sustainable development priorities," as a priority for themselves in February 1993.) The first Atmospheric Environment director led the discussion.

The team agreed that sustainability as an organizing concept was suitable for use as a goal for priority setting. ...When we write it up... we should make use of existing policy statements. The sustainability principles presented by the Conference Board were thought by the team to be a guide for management action and were not suitable for use as risk assessment criteria... These principles may be helpful when reviewing data or evaluating the design/methods we adopt. The team also felt sustainability was not a strategy... a process or a method.

The ecological risk analyst gave a presentation on "using an ecosystem framework for priority setting." The International Joint Commission senior environmental advisor led the discussion.

The team agreed to use an ecosystem perspective to identify and classify issues.... They agreed that a Stress-Exposure-Response Framework was suitable [sic] way to formulate concerns as issues. ...More work is required to able [sic] to satisfactorily identify emerging issues.

The Environment Canada Project coordinator gave a presentation on the issue profile. The Environmental Protection/Pollution Prevention senior engineering advisor led the discussion.

The team thought that only very basic descriptive information needed to be collected. Significance, ownership and adequacy of knowledge were discussed as possible screening criteria. The team were of the opinion that the initial screening should be very flexible with respect to the issues that were accepted... Ownership of the issue was extensively discussed and though everyone could see its relevance many felt that the federal government would be expected to show leadership and that it was not a sufficient excuse to screen an issue out of the process. Adequacy of knowledge was not thought to be a screening criteria but one of the possible conclusions to be drawn... The team also thought that public concern could also be an important screening criteria.

Additional categories of information and criteria were also suggested.

For scoring and ranking, these included "uncertainty - data gaps, quality."

Regarding potential case studies, a composite list suggested by the Team and taken from other sources included:

- ozone depletion (potential effects of [ultraviolet-B radiation] on humans, animal species & plant health)
- persistent toxics (organochlorines & heavy metals)
- habitat loss/biological depletion (due to urban sprawl and landuse changes)
- waste combustion (incineration)
- climate change
- contaminated sites/remediation
- urban air quality (smog)
- introduction of exotic species

- Niagara River toxic loadings
- rural groundwater contamination
- municipal contamination of surface water bodies
- effect of water quantity variability on integrity of Athabasca Basin,
- access to wilderness
- effect of agricultural practices (eg soil erosion).

The Environment Canada Project manager led the discussion on different approaches to scoring and weighting issues.

Members were provisionally assigned to four task groups (framework, profile, case studies workbook, and user guide - scoring and ranking process) for the next meeting.

In early July, the fifth (and final) Core Director Working Group meeting was held. The Group met to provide guidance, feedback, or help to the Project Team. All members attended or were represented except for Industrial Programs, Parks, and Finance. Health Protection was represented by the biostatistician. The Group accepted the approach proposed by the Team, i.e., "sustainability as a goal,... use of the ecosystem perspective as the organizing principle of the framework,... the Stress-Exposure-Response paradigm."

The third Project Team meeting was held. Before the meeting, the coordinator drafted a four-page outline of Team tasks (similar to his early June discussion paper). He wrote, "We have decided to use the issue matrix approach recommended by CanTox, which is based on methods developed by the [Kennedy School of Government], solely for the purpose of scanning & scoping."

The coordinator sent the outline and draft agenda to the Team, now including a Transport senior advisor, for their consideration. He apologized for the lateness of the material and wrote them that his computer had crashed and his work was lost.

**At the meeting, the Team resolved the argument about the Environment Canada process determining more than federal government priorities. They recommended the process determine more, as shown below by excerpts from the meeting minutes.**

The Team met to further develop the process and select case studies to use in the workshop. About 23 members attended, including the ecological risk analyst, socioeconomic risk analyst, second Eco-Health environmental quality guidelines specialist, science liaison officer, senior engineer, economists, resource economist,

environmental analyst, and biostatistician. Environmental Protection/Commercial Chemicals, Parks, Energy, Transport, and the Conference Board did not attend.

The Team discussed framework development, the issue profile, scoring and ranking, and the case studies.

Regarding framework development:

Two needs were discussed - an overview to set the context for the priority setting exercise... and framework for expressing concerns as issues. ...

An outline was presented for consideration, in response to the consensus at the previous Team meeting... This overview should draw upon major existing [Environment] policies (e.g. Green Plan) and reflect current approaches to multi-stakeholder decision-making and public consultation. To broaden this policy context, it would be beneficial to consider the department's Pollution Prevention Strategy and [Health's] report on Health - A Vital Link....

The proposed priority setting framework is based on the paradigm of ecosystem stress-exposure-response as the organizing principle.

Regarding the issue profile, "Profiling involved three phases - provision of background information, application of screening criteria and characterization of the issue." For screening:

...The objective is to identify those that the federal government will handle. It was agreed that socio-political concerns, including public opinion, meant that some flexibility was required in the screening process. It was noted that even issues that were "screened out" federally should be documented and tracked to see if they were being dealt with by appropriate agencies. A question remains as to whether the... project will deal with issues arising out of natural causes e.g. volcanoes, weather, naturally occurring metals such as mercury etc. The mandate given the team by the... [Director General] Steering Committee was based on the "consequences of socio-economic activity."... Important screening criteria were deemed to be "significance" and "ownership."

Regarding scoring and ranking:

The outcome of this step is the establishment of management priorities....

Weighting is a value judgement about the relative contribution of each fact to the overall issue.... The matter of how to evaluate public concern was discussed - should it be a score or a weighting factor. The need to take into account other socio-political factors which influence decision-making was also noted.

With respect to public concern, it was agreed that it was an important factor for screening and assigning weights but it was not a category to be scored independently. [Health] traditionally has weighted public concern as greater than "1."

Other weighting factors discussed were: reversibility, uncertainty, synergism and cumulative effects.

A meeting on scoring and ranking is to be scheduled... prior to [mid-July] to deal with the outstanding problems.

The case studies included ultraviolet-B radiation, contaminated sites, genetically modified organisms, smog, access to wilderness, and drinking water. They were selected on the basis of "representativity [sic] and comprehensiveness." Selection criteria involved three themes: the state of knowledge on the issue (emerging vs well understood and knowable vs unknowable); the scale of the issue (from local to international; recovery, reversibility); and the media or ecosystem component involved (air, water, land, and biota). Biota were differentiated into natural biota and humans.

After the meeting, the coordinator arranged for a session in mid-July on scoring and ranking, for the Profile and User Guide task groups in particular, to reach a consensus "on this requirement."

In mid-July, the manager invited the Advisory Committee on Environmental Protection, Canadian Environmental Network and a "special audience" to the Environmental Priority Setting Workshop. He wrote the Advisory Committee and Network executive director:

...The Advisory Committee... identified the need for a priority setting system, based on environmental risk reduction, to guide public and private sector efforts in addressing ecosystem problems resulting from social and economic activities.

An Interdepartmental Steering Committee... has mandated... a multidisciplinary Project Team... to develop a priority setting framework and appropriate methodologies to scope, screen, score and rank environmental issues.

The purpose of the workshop is to review, assess and further refine the draft framework and methodologies developed by the Team. At this time the requirement is to produce a method for setting priorities, not a list of issues for action.

The manager also sent the executive director a copy of CanTox's report called Setting Environmental Priorities for Canada, and invited the Network to send up to five members whose expenses were to be covered.

The manager wrote the special audience:

...Environment..., the lead department on the Federal Environmental Priority Setting Project, is holding a workshop to review progress to date in developing a proto-type model for priority setting. As you have expressed an interest in the work being undertaken, I would like to invite you to participate...

The Interdepartmental Committee has undertaken to develop a transparent and consistent priority setting system, based on environmental risk reduction, to guide federal efforts in addressing environmental issues resulting from social and economic activity. A multi-disciplined Project Team has been established... The workshop will provide an opportunity to assess, test through case studies, and refine the product produced by the Team. The objective is to produce a method of priority setting, not a list of issues for action....

Given the prevailing climate of fiscal constraint, the federal government is aiming to be more effective and efficient in dealing with current and emerging environmental issues. Partnerships with other governments, the private sector and the public will be an increasingly important component of how we tackle these problems. I invite you to attend the workshop so that we can proceed to build the foundation for future environmental management together.<sup>4</sup>

*The EcoScan Project.* By now, the Rawson Academy drafted a report on the EcoScan process, based on "the concept of ecosystem integrity as the organizing principle."<sup>5</sup>

*The Environment Canada Project.* The fourth Project Team meeting was held. About 27 members attended, including the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis socioeconomic risk analyst, Ecosystem Risk Analysis ecological risk analyst, second Ecosystem Sciences/Eco-Health environmental quality guidelines specialist, Ecosystem Sciences/Water Research science liaison officer, Conservation & Protection/Environmental Protection/Industrial Programs senior engineer, Environmental Protection/Regulatory Affairs economist, Conservation & Protection/Wildlife resource economist, Corporate Policy economist, Health/Health Protection biostatistician, and Agriculture senior environmental analyst, and now the Rawson Academy scientist. Energy, Ecosystem Sciences/Strategic Planning, Conservation & Protection/Communications, and Transport did not attend.

The scientist gave a presentation on the EcoScan process which suggested "a useful approach for... scanning emerging environmental concerns."

The Team discussed the conceptual framework, profile, scoring and ranking, and case studies. Regarding the framework, the task of developing definitions of its components and illustrating how they were to be used to express an issue remained to be completed before the next meeting. Regarding the profile, the screening process was revised. The Team agreed that the Profile Task Group were to develop a series of questions to screen issues for scoring and ranking. Regarding scoring and ranking, a preliminary approach was developed for the health component of issues. The Team agreed that further work was required to develop a formula for dealing with the ecological and socio-economic components and to refine the formula for the health component before the workshop. And regarding the case studies, they were "well in hand." Workbooks needed to be prepared for the workshop and a decision made about which case studies were to be used and for what purpose.

Extra meetings for the Framework and Profile task groups, on scoring and ranking, and a "dress rehearsal" were scheduled.

After the meeting, because she was to be out of the office, the Environmental Protection/Pollution Prevention senior engineering advisor (a Project Team member) sent comments on the "Priority Setting Project" to the Environment Canada Project manager (and copied the Environmental Protection director general, Pollution Prevention director, and senior engineer). She wrote him:

As I noted at the... team meeting, the workshop participants must be given a clear understanding of the purpose of the priority setting scheme.

Key questions would include: Who will use it - who will perform the tasks to frame, score and rank AND who are the end users of the ranked list? For what purpose are the priorities being set? If this is clearly a methodology intended for use by the federal Minister of the Environment, this should be noted. If it is meant to be a model for use by a range of departments, users and jurisdictions, this needs to be clarified.

Moreover, if the intent is to... provide guidance in specific management decisions (i.e., the 'Manage', 'Assess/Monitor', 'Research' clusters... mentioned at the team meetings), this must also be made clear to... participants.

I want to again stress that the methodology must help us prevent future problems as well as deal with existing ones....

Finally, the methodology... must be simple enough to be useful at high levels, so the number of criteria... needs to be kept to the critical few. ...The model proposed by the Scoring and Ranking group... is the most detail that the system can manage.

It may be that the Team's biggest contribution would be to define the elements that should be considered in a priority-setting exercise. Users must have sufficient flexibility that, depending on the purpose, different critical elements and combinations would be important.

...My understanding of this specific exercise is to rank environmental issues on the basis of relative risk to the health of Canadians, to the viability of Canadian ecosystems, and to Canadian socioeconomic elements to provide information to decision-makers in Environment.

The manager replied to the senior engineering advisor (and copied the director general, director, and senior engineer):

You posed a lot of questions, only some of which I can answer...

....The stated audience... are Minister(s) and senior departmental officials. ...The [Director General Steering Committee] added Ministers (plural) because they felt the scheme would influence the decisions of more than just Environment... We suspect that industry groups, [environmental groups] and other levels of government might also want to use the methodology, if not the results.

...Clearly, the project team is framing the priority setting methodology and suggesting the scoring mechanism and system. Whether... there will be acceptance of the... methodology and system is not know, but... in September we will be making presentations to [the Advisory Committee on Environmental Protection], [Canadian



Petroleum Products Institute], [Policy Advisory Committee/Top of the House Committee] and perhaps to other Departments' equivalent management processes or suggestions for modification (just as is happening with the [Institute] process) - the [Steering Committee] again recognized that this is an iterative process in which initial results once calibrated against political and other realities may suggest modifications to the methodology... - one could call this a "calibration" phase.

If the methodology is accepted... presumably the Departmental management system will require a structure that would undertake the priority setting activity on an annual basis. The nature of the assessments that need to be done suggest that this should be a multi-disciplinary group (possibly even multi-stakeholder). I have... suggested to [the Ecosystem Sciences director general] that if the [Conservation & Protection] Decision Table process continues that perhaps the Science-Policy Table should be charged with doing the assessment...

The end users of the ranked list, will presumably be those who are charged with the responsibility of work planning and resource allocation in the Department - i.e. the environmental risk management cadre....

For what purpose are the priorities begin set?... To enable the Minister(s) and senior management to concentrate their work planning and resource allocation on environmental issues that are determined to have the most significance....

(an... implied question) is the methodology intended to cluster issues into groups implying specific management decisions?... Possibly - the original intention was to cluster issues into groups of high, medium or low environmental concern. Many people did not seem to be satisfied with that and... [the Pulp & Paper Research Institute senior director]... was the one to characterize the... groups as... "issues to manage," "issues to monitor and assess further," and "issues requiring further fundamental research." The [Steering Committee]... expressed support for that type of characterization, although my own view is that... high, medium and low is the best at this stage because... the issue profile will include such other information as the state of knowledge, level of public concern, local/regional/national character, etc... all of which might suggest other end points...

I agree with your point regarding the ability to predict future issues... I also agree with your point about simplicity so that the system can be used at high (management?) levels...

Thank you for... your valuable and enthusiastic participation in the team. I am extremely satisfied with the progress we have made, and like others who have spent time with the [Canadian Petroleum Products Institute] process, I think that their response will be very favourable.

In late July, the Framework Task Group meeting was held. By then, the Group, including the Conference Board senior research associate, International Joint Commission senior environmental advisor, socioeconomic risk analyst, Ecosystem Risk Analysis senior advisor, resource economist, and first Atmospheric Environment director, revised the framework of the Environment Canada process. Wildlife and Atmospheric Environment did not attend the meeting. After the meeting, the senior environmental advisor sent the 10-page framework to the Group for consideration and wrote them, "As always, we are working to the last minute. I don't know how this framework will fit in with other parallel (sequential?) efforts."

The fifth Project Team meeting (the dress rehearsal) was held. After the meeting, the senior research associate sent suggested changes to the Priority Setting User Manual to the ecological risk analyst who was a member of the Case Studies Workbook Task Group. He wrote him, "I share some of the [senior engineer's] concerns and ideas on the scoring, but I think that little can be done for the... workshop. This is being sent to you because I'm certain that [the Environment Canada Project coordinator] has a dozen or so other things to do today."

**The Conservation & Protection assistant deputy minister advised a Natural Resources/Policy assistant deputy minister to establish the Environment Canada Project as a priority, as shown below.**

**The Campbell Conservatives established the Federal Government Restructuring project as a priority for the federal government by now.** Forestry was transferred to the new Natural Resources. Energy, Mines & Resources (Energy) was to be transferred to Natural Resources by the end of July. Industry, Science & Technology was to be renamed Industry & Science (Industry) by mid-August and restructured. Health & Welfare was to be renamed Health by the end of August. And Parks was to be transferred to the new Heritage, along with 40% of Environment employees and resources. The resulting federal government structure key to the Environment Canada Project is shown in Figure 5.1.

The Conservation & Protection assistant deputy minister wrote the Policy assistant deputy minister:

A number of Environment... stakeholders have suggested that the Department should... develop a methodology and framework for prioritizing environmental issues. Most significant amongst these... are the Canadian Petroleum Products Institute and... Advisory Committee on Environmental Protection.

In responding..., we established a multi-disciplinary project team... ...A small task force will write up the proposal... for consideration by the Director Generals [Steering Committee] and, ultimately, more senior levels of management before the end of October.

Recently it was decided that the process of prioritizing issues should be performed within the overall context of environmental sustainability..., although it is not intended... to enter the field of resource management.

He invited him to name one or two people who "might participate in the Workshop, and possibly join... the... Steering Committee and the Core Directors' Working Group."<sup>6</sup>

*The Corporate Policy Project.* **Corporate Policy drafted a report on the Corporate Policy Project, a nine-page paper on "the integration of economics into the environmental priority setting process."** They wrote in the introduction:

The department is focusing increasing attention on how it might improve the way in which environmental priorities are established from a risk assessment as well as from a risk management perspective. This increased effort responds to a number of pressures:

- Outside groups, particularly those of the business community, such as the Canadian Petroleum Products Institute and the Advisory Committee on Environmental Protection, are concerned that industry is... overburdened with environmental regulations; and that the Government (Environment... in particular) has not conducted a systematic evaluation of the costs and benefits of its initiatives and established environmental priorities accordingly. These organizations are pushing to be more actively involved in the process of establishing environmental priorities;
- [Environment]'s crowded regulatory agenda;
- More broadly, the Government's focus on fiscal constraint dictates that departmental resources be allocated in the most efficient manner; and
- Further, the Green Plan will be reviewed over the coming year in light of [the United Nations Conference on Environment & Development] and a new mandate - this could create pressure for major new initiatives which will like have to be funded within existing resource levels.

Even in the absences of these pressures, it is important for the department to ensure that its initiatives increase society's welfare level.... Our challenge is to develop and implement a practical methodology for ensuring that our resources are allocated more effectively. The purpose of this paper is essentially...:

- to outline the conclusions of the work we have undertaken to date; and
- to recommend future steps.

The Campbell Conservatives established the Green Plan Review project as a priority for the federal government by now. The "new mandate" referred to the results of the upcoming election.

Regarding review of methodologies, Corporate Policy wrote, "We have explored the advantages and disadvantages of various methodologies aiding in priority setting." The methodologies included impact assessment, replacement cost, multicriteria approach, cost-benefit, risk analysis, and cost effectiveness.

To sum up, while in the literature, the use of one of the above methodologies often appears to exclude the use of another, we found that many of them can and are being used in a complementary fashion. We favour a broad cost-benefit framework which would integrate uncertainty and would not preclude subsequent considerations of social and equity issues. Further, while methods to determine monetary values of environmental benefits... should be used as extensively as possible, we believe non-monetary benefits should be accounted for as long as their relative value can be clearly expressed. This requires identifying which factors are most likely to affect the

relative value of programs' benefits. To do so, it is helpful to develop a set of key generic questions, similar to the ones an individual would ask before revealing his maximum willingness to pay for various environmental programs, subject to budget constraints. Scoring and weighting procedures for answering some of these questions should help determine an overall relative value of each initiative's benefits.

Regarding key generic questions for assessing benefits of environmental initiatives, Corporate Policy wrote:

Theoretically, all environmental benefits of initiatives like those of the Green Plan, can be expressed in terms of risk reductions.... We have found the following questions helpful in trying to determine the relative risk reductions of selected programs (e.g. protected space, global warming, etc.).

See Appendix 2 for the questions.

Regarding data limitations, Corporate Policy wrote, "The application of these... questions... has provided valuable insights. In particular, the process... revealed significant difficulties with respect to data availability, reliability, and comparability."

Lack of Aggregated and Comparable Data

- Aggregated data on measures of risk... is often not available. Additional resources are required to collect and to interpret piece-meal scientific data....

Incomplete Data....

- Statistical uncertainty is based on observations... But some features of environmental impacts... are simply unknown....

Methodological Difficulties

Regarding key questions for assessing costs, Corporate Policy wrote, "Environmental targets should be pursued at least cost to society. For illustration purposes, we... identified the following policy instruments." The instruments included voluntary action, market based alternatives, information disclosure, mandatory obligations, and other. Corporate Policy also wrote, "In order to help determine the cost-effectiveness of initiatives, it is useful to consider the following generic questions." See Appendix 2 for the questions.

In applying these questions... we found that, since the programs had been undertaken on a voluntary basis, their costs to society would correspond mainly to the budget allocated toward them. Our experience in trying to come to grips with environmental expenditures in Canada, however, has demonstrated the difficulty in analysing industry costs owing to confidentiality.

Corporate Policy concluded and recommended:

Many factors obviously influence the Government's approach to environmental policy and the priorities which it establishes in this area. However, sustainable development... argues for the integration of environmental and economic considerations into the decision-making process. It is, therefore, important to recognize these linkages while evaluating federal policies and programs.

The department is encouraging other departments and the private sector to integrate environmental considerations into the way decisions are made. There is increasing pressure on us to demonstrate that our environmental policies have economic integrity. The department clearly needs to integrate more fully economic considerations into the way environmental policies and programs are formulated and into the process for establishing environmental priorities. Substantial efforts are presently made in the direction within the department (see annex). While cost-benefit is the most appropriate approach for assessing whether our resources are allocated efficiently and holds promise as a tool for helping to set priorities, its application faces substantial challenges particularly relating to the quantification of benefits.

...There is a need to build upon the work already underway in the department to apply cost-benefit analysis and to value environmental benefits. Specifically:

- consideration should be given to apply the Hickling approach to test cases in a manner which builds upon the [Conservation & Protection] priority setting exercise...; and
- further improvements in access to data and information sharing should be encouraged.

Even if benefits cannot be quantified in monetary terms, ... it is recommended that further efforts be made to identify key generic questions.

...We need to ensure that environmental issues are addressed in the most cost-effective manner. Program evaluation is an important tool for existing programs; the department regulatory review represents an opportunity to explore alternative means to achieve environmental objectives; and the Regulatory Impact Analysis Statement provides for the consideration of alternatives to regulation.

In addressing new and emerging issues and in updating the Green Plan, cost-effectiveness will be a guiding principle. This is particularly so given that we will likely be operating as a time of continued fiscal restraint. If, for example, Green Plan funding is reduced further, the logical first step is to ensure that existing initiatives are effective in achieving objectives, and that they do so in the most cost-effective manner. If efforts to deliver on targets in the most cost-effective manner are insufficient to respond to reduced budgetary allocations, decision would have to be to either adjust all targets downwards or to pick "winners and losers". In order to do the latter, some concept of relative benefits must be incorporated into the decision-making process.

In the two and a half page Annex on present efforts towards integrating economic considerations into decision-making, Corporate Policy wrote:

Regarding use of the cost-effectiveness approach for performance evaluations of existing programs:

The Program Evaluation Branch uses specific guidelines to ensure programs are evaluated consistently.... Program evaluation data... played an important role for program renewals like the recent Saint Laurent Action Plan II.... ...The work of the...

Branch in reviewing the Canadian Environmental Protection Act will be a key factor influencing the department's future regulatory regime.

Regarding cost comparisons between regulations, economic instruments, voluntary actions and other alternatives for reaching environmental targets:

Several governmental initiatives aim to identify cheaper alternatives for programs. For instance, the Economic Instruments Collaborative, the [Canadian Council of Ministers of the Environment] Economic Instruments Committees, the Ontario Energy Department and [Environment] are focusing on ... applying economic instruments for programs related to [sulphur dioxide], [nitrogen oxides/volatile organic compounds], or water quality;

The cost-effectiveness principle has been applied extensively within... the department's... regulatory review... and alternatives to regulation are being examined; and

The Green Plan Year Two Report describes present achievements and associated expenditures to date.

And regarding improvements in the ability to identify and quantify environmental benefits:

[In late November] 1992, the Chief Statistician, Statistics Canada and the Deputy Minister, Environment... agreed that a new Memorandum of Understanding... between the two departments would be beneficial. While this new [Memorandum] will seek to continue existing collaborative efforts, it will also allow important improvements regarding integration and harmonization of social, economic and environmental information....

...Conservation & Protection... is preparing a paper on natural resource valuation methods... and plans to apply the theory to some practical examples.

Similarly, Apogee Research is developing a framework on the estimation of the benefits of environmental objectives for [Conservation & Protection/Policy]. Their approach is focusing on benefits transfers...

The Priority Substances List is an example of an agreed approach to assessing the toxicity of products.... Some of the health risk assessments are extrapolated from observed health effects on animals.

[Conservation & Protection] has... engaged in a priority setting exercise.... [Conservation & Protection] is... spearheading the department's input to the [Canadian Petroleum Products Institute] priority setting exercise.

Hickling... prepared a paper for... Corporate Policy.... Consideration is currently being given to applying the Hickling approach to test cases (eg. ozone depletion, toxics); and to integrating the process with the [Conservation & Protection] exercise.

**As shown above, Corporate Policy argued that benefit-cost analysts should help decide Environment's priorities.**

**The Corporate Policy director general sent the report to the Policy Advisory Committee and Core Director Working Group (and Conservation & Protection**

**Resource Valuation Working Group) for comments and advised the Committee to re-establish the Corporate Policy Project as a priority (test the Hickling process).** He wrote them, "The paper is intended to further stimulate and advance thinking in this area."

Further information about the Corporate Policy Project was not included in the Environment Canada Project file.<sup>7</sup>

*The Environment Canada Project.* By now, the Environment Canada Project coordinator invited an Ontario Environment & Energy research coordinator to the workshop. Industry representatives had shown "a high degree of interest" in the Environmental Priority Setting Workshop. The Canadian Environmental Network advised Environment that, "due to the short notice, it was unlikely that representation from... [environmental groups] would be possible." The Environment Canada Project manager invited the Director General Steering Committee and Core Director Working Group to the workshop.<sup>8</sup>

*The June Budget Project.* By now, Conservation & Protection/Ecosystem Sciences management board had discussed "priority rankings and the Level III program resources," and Ecosystem Sciences directors (including the Environment Canada Project manager) had been sent the latest draft of the Conservation & Protection/Management Accountability listing and the extracted Ecosystem Sciences list of lead and support programs. While the value of Ecosystem Sciences resources attached to each program was being assembled for confirmation, the Ecosystem Sciences/Strategic Planning director asked the directors to provide the director general's office with comments on the appropriateness of the rankings. This was to be a discussion item at the next Ecosystem Sciences teleconference call as Strategic Planning prepared a response to the Conservation & Protection assistant deputy minister.

The manager replied to the Strategic Planning director:

...Not all combinations of Flexibility and Priority are offered...: for example the options allowed appear to be only those shown below marked with an X [high flexibility/low priority, medium flexibility/medium priority, and low flexibility/high priority].

Some of the [Ecosystem Sciences/Conservation] program activities most properly fit in combinations not shown.

...There is overlap... between Flood Damage Reduction and Federal/Provincial/Territorial Management Agreements - ...both of these relate to uses of the [Canada Water Act] Fund, both of these involve [Federal/Provincial] Agreements, Orders-in-Council, etc. yet one is listed as having High Flexibility and the other Medium Flexibility. ...They should be both ranked on the same level of Flexibility, although I would agree to a different level of Priority.

I... argue therefore that a combination that should be permitted is Medium Flexibility/Low Priority and that [Flood Damage Reduction] should go into that one.

...Water Conservation would merit for so long as it remains current ([the Ecosystem Sciences director general] and I... discussed a 2 to 3 year timeframe before it is phased out) a higher ranking than low priority due to its linkage to sustainable development objectives and municipal effluent management. This one... should be accorded a High Flexibility/Medium Priority ranking.

A staff member was to act for the manager at the Ecosystem Sciences Teleconference the next day since the manager was to be at Environment's Environmental Priority Setting Workshop.<sup>9</sup>

*The Environment Canada Project.* Meanwhile, the CanTox program manager sent her draft overheads and speaking notes to the Environment Canada Project coordinator for comments. She wrote him, "I am a little unclear as to some of the areas in which your... meetings have modified the original CanTox recommendations."

The program manager, CanTox toxicologist, Conference Board senior research associate, a Conference Board research associate, and the Rawson Academy scientist were contracted to be monitors at the Environmental Priority Setting Workshop. (The scientist was contracted for four days work.) The coordinator wrote them:

We expect you... to facilitate the group discussions... to contribute to the discussions based on your subject matter expertise and professional experience... to provide... a résumé of the highlights of proceedings including your observations and recommended solutions to problematic aspects of the approach and methodology.

He also wrote them, "Please keep in mind that we have to complete a draft report within 30 days. That is to say focus on what needs to be done to sell the concept and approach."

**By now, the Project Team drafted a report on the Environment Canada Project, Draft 0, i.e., the National Environmental Priority Setting Workshop binder, including various overheads, a seven-page Priority Setting User Manual, and 14-page Case Studies Workbook.** The timeline included circulating the report for review and comment by participants by September, and preparing the final report for critical review by various representative audiences.



The two-day workshop was held. **Some participants argued that the Environment Canada process should determine more than federal government priorities, as shown below by excerpts from various workshop summaries, overheads, and notes, including mine. Also shown, some participants advised the Team to continue making the Environment Canada Project a priority.**

The participants met to review Draft 0 of the Environment Canada Project report. About 60 participants attended. About two thirds were from Environment and other federal departments. About half were Team members, including the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis ecological risk analyst, Ecosystem Risk Analysis socioeconomic risk analyst, Ecosystem Sciences/Water Research science liaison officer, Ecosystem Sciences/Strategic Planning science programs officer, two Ecosystem Sciences/Eco-Health environmental quality guidelines specialists, Conservation & Protection/Environmental Protection/Industrial Programs senior engineer, Environmental Protection/Regulatory Affairs economist, Conservation & Protection/Wildlife resource economist, Corporate Policy economist, Natural Resources/Forestry forest resource economist, Energy senior economist, Energy analyst, Industry environmental analyst, and Health/Health Protection biostatistician. The Atmospheric Environment scientific programs coordinator also attended. Ecosystem Sciences/Environmental Assessment, Environmental Protection/Commercial Chemicals, Conservation & Protection/Communications, and Agriculture did not attend.

About one third of the participants were from consulting companies (including the toxicologist, and GlobalTox International Consultants), provinces (Alberta, and the Ontario Environment & Energy research coordinator), industry (including the Canadian Petroleum Products Institute), universities (including me), and the United States Environmental Protection Agency. Environmental groups were "unable to attend due to conflicting priorities."

On the first afternoon, the manager gave the opening address, including an overview of the Project. The timeline now included a report to the Canadian Council of Ministers of the Environment in mid-September.

The program manager gave a presentation on the role of CanTox in the Project and a brief overview of the work they had done since their report. She told participants:

- in the environmental area - expertise in risk assessment, environmental impact analysis, environmental exposures and risk assessment modelling, regulatory issues, and remediation assessment
- because of our expertise in these areas we were asked by [the Advisory Committee on Environmental Protection] to participate in the Environmental Priority Setting Project....
- [the toxicologist]... technical expert on priority setting models, did much of the technical work for this report.

[CanTox] felt that the best place to start was to select the most serious concerns on a scientifically sound basis.... In particular, they suggested that an accurate ranking of issues relative to each other could be achieved without onerous data collection if we rely on simple descriptive data and professional judgement.

Points made in response to the two presentations included "need to include natural influences," "need to deal with the variation in evaluation for scoring," "the group questioned multiplying factors," "the weighting process should be removed," and "it was decided to include issues that are not owned by [Environment]."

The coordinator, with the Ecosystem Risk Analysis senior advisor, science liaison officer, and senior engineer, gave an overview of the Environment Canada process. A number of suggestions were accepted, including "there is a need to clarify who performs the tasks and who are the endusers" and "the feasibility of a response should not be excluded from the issue profile."

That day, I noted the following comments from the participants:

- the public gets it wrong *and* the public gets it right;
- if there is no real stakeholder representation, it could throw the whole process into disrepute;
- Industry, Health, and Environment should score the economic, health, and ecological factors, respectively (from the Pulp & Paper Research Institute senior director);
- Environment technical and professional staff were to complete the issue profile;
- should we rank? should we weight?;
- we were specifically asked to cross-compare;
- we should get some guidance on trend (from the coordinator) *and* we have the elite here (from the manager);
- we need some august group, is it this group?;
- we would have had academic background papers if we had time; and
- the Environmental Assessment Branch has to be involved.

The next day, an Environmental Protection Agency chief gave a presentation on the Agency's Experience with Environmental Priority Setting: A Risk Assessment

Perspective. (A University of Michigan professor and College of William & Mary professor were originally scheduled.) The chief told participants:

Limitations of priority setting

- uncertain data
- need to use surrogate data
- missing data - need leaps of faith
- science doesn't answer questions relating to social values, equity and justice

It is critical that senior management accept comparative risk assessment - a buy-in at the top is required

"He emphasized that [Comparative Risk Assessment] is highly judgemental, depends a lot on surrogate data and is subject to a high degree of scientific uncertainty."

The coordinator, senior advisor, science liaison officer, and senior engineer walked participants through the process using the Ultraviolet-B Radiation case study. Points made included the "need to outline how the process deals with people disagreeing with it," "need to clarify who the method is designed for," "at what level," and "who should be involved."

Participants were broken into groups to apply the process to the smog case study. The results were reviewed in a plenary session. Points made included "who are the users and who is the audience," "there is a difference between uncertainty of opinion and uncertainty of scoring - need to take both into account," "a lot of factor and numerical fudging," "where does risk management enter into the risk assessment process," and "the whole process is too dependent on expert groups to score, it should not be trusted to senior management alone."

(There was not enough time left for participants to break into groups to review and rank four case studies followed by a plenary session, as planned.)

About 20 participants (including me) stayed for an unscheduled evening session to develop a series of recommended revisions to the process.

The revisions were reviewed and adopted the second morning in the closing plenary. They included:

- renaming the Environmental Priority Setting Project and process "to avoid confusion with a multitude of budget cutting exercises, currently underway, and to focus on its purpose."
- reducing the screening criteria to health hazard, ecosystem integrity, social or economic welfare, public concern, and impact on future generations; and not

including social equity or ownership. (In Draft 0, the criteria included social equity and ownership, and impact on future generations was called sustainability.)

- not accepting ownership as a screening criteria, although participants agreed that decision-makers would want to review the list of issues and relevant information about the ministry's role. (I noted that participants argued about ownership throughout the workshop, e.g., they had to provide senior managers with the ability to say no. The argument was wrapped up in comments about fiscal restraint and restructuring.)
- only scoring health, ecological, and socioeconomic factors, and not cultural; and including cultural in socioeconomic. (In Draft 0, both economic and socio-cultural factors were scored.)
- the factor score equaling severity times extent, the sum of, all times trend. (Participants discussed this throughout the workshop, e.g., the coordinator said to use letters instead of numbers to score the factors because multiplying numbers is a black box. In Draft 0, the factor score equaled severity times extent, the sum of, all times trend times recovery time.)
- scoring trend as recovery time (after the stress is removed). (In Draft 0, trend and recovery time were scored separately.)
- not weighting the factor scores. "There are acceptable alternatives for summarizing or clustering the scores which are easier for decision-makers to understand." (Participants discussed this throughout the workshop. In Draft 0, the scores were weighted.)
- resolving "how to reconcile differences in opinion" about assigning scores. (Participants discussed this throughout the workshop, e.g., they said the process must handle scientists' disagreement, questioned if it should be in the weighting, and the GlobalTox principal said to apply the precautionary principle.)

I also noted throughout the workshop that participants questioned the misuse of the process, said that issues may fall off, and that they had been accused of environmental triage.

"The general consensus... was that the endeavour was worthwhile and a method for ranking issues based on comparative risk would be an invaluable aide in setting environmental priorities." Interest was expressed in holding a broader follow-up workshop after the report on this workshop was completed and considered by senior

management. Other suggestions included holding a workshop for environmental groups and/or publishing a public discussion paper in order to "broaden the consultation base."

The manager gave the closing remarks. (The Conservation & Protection assistant deputy minister was originally scheduled but he was called to attend a Treasury Board meeting.)

As shown above, some participants questioned whether the Team - including experts - alone should decide Environment's priorities, including whether other experts should help.<sup>10</sup>

*The Canadian Petroleum Products Institute Project.* By the end of July, the Environmental Priorities Working Group revised the Final Draft of the Canadian Petroleum Products Institute Project report. It was basically the same as the early June Final Draft, except regarding conclusions/next steps, the Group now wrote:

- establish linkages with, and offer to provide briefings to, the [Canadian Council of Ministers of the Environment] through its Environmental Protection Committee... and the National Air Issues Coordinating Committee to ensure provincial jurisdictions are informed about progress made in environmental priority setting;
- maintain links with the Advisory Committee on Environmental Protection broader exercise on environmental priority setting and offer to brief [the Committee] on the methodology

The final draft reports of the Canadian Petroleum Products Institute and Competitiveness projects were sent to Environment and other federal departments for comment at the end of July.

**The Petroleum Products Industry Task Force, at their final meeting, set up the Petroleum Products Consultative Mechanism, and re-established the Canadian Petroleum Products Institute Project as a priority for Environment, other federal departments, the Canadian Petroleum Products Institute, and two environmental groups (test the Canadian Petroleum Products Institute process), and the Competitiveness Project, as shown below by excerpts from a Task Force co-chairs' draft letter. The Task Force then updated Environment and other federal department ministers (via the Natural Resources/Energy, formerly Energy, Mines & Resources, assistant deputy minister and first Ultramar senior manager) on their decision.**

The Task Force completed their work in July. They decided to set up "an ongoing mechanism for continuing to exchange ideas and opinions and for continued

collaboration, where appropriate." This group was to be named the Mechanism and meet twice a year beginning in October 1993.

...The first items of business for the... Mechanism were identified. A trial run of the environmental prioritization model should be completed by [the end of September] and the results... reported to the group. The... Mechanism also intends to examine progress in addressing competitiveness issues identified by the working group and to identify new issues... The mission of the... Mechanism is to continue both the process of dialogue and mutual understanding and the production of effective solutions to problems of mutual interest and concern.

The two-page letter, similar to the draft Task Force report, was the final report. Copies of the Canadian Petroleum Products Institute and Competitiveness project reports were attached. In the letter, the assistant deputy minister and senior manager wrote the Industry and other federal department ministers:

We direct your attention in particular to each report's executive summary....

....The Task Force... concluded that the ability of industry members to manage both environmental and economic factors will determine, in large measure, the industry's long-term future.

The Task Force has been a dynamic and effective forum. Government, [the Institute] and two representatives of the environmental community... worked together to enhance their understanding of the industry and of each other's interests and concerns. Task Force members ably represented their "constituencies" in a spirit of good will that enabled consensus building.

The Task Force... agreed that the investment of resources and goodwill... is capable of producing further returns. The issues... examined and discussed ... will continue to be a preoccupation of all participants....

We would like to thank all who participated in the work of the Task Force. Working group and Task Force members contributed energy, enthusiasm, and a willingness to work together effectively by openly sharing views and opinions."

The letter was sent to the ministers under cover of a letter from the first Institute senior director.<sup>11</sup>

*The Environment Canada Project.* The Conference Board senior research associate, and CanTox toxicologist and CanTox program manager sent their comments on the National Workshop to the Environment Canada Project coordinator.

The toxicologist and program manager wrote in a six-page memo:

A list of 10 or 20 environmental issues should be scored and ranked and the results evaluated... Perhaps another workshop could be convened to conduct this.... If the... system is to be used to score environmental issues, a core group of people

with diverse interests (i.e., industry, environmentalists, academics, scientists, government agencies) should be involved.

The Ontario Environment & Energy research coordinator wrote the Environment Canada Project manager, "The workshop provided a very important opportunity to test the proposed priority setting methodology.... I would be grateful if we could keep in touch regarding the... methodology." He also thanked the manager for offering to reimburse his travel expenses.

Meanwhile, the Core Project Team began revising Draft 0 of the Environment Canada Project report. Several small groups were working "to resolve the current difficulties." "Given the tight timeframe... and the need to ensure that the report... reflects the views and inputs of the workshop participants," a small report writing group was also being set up. The Team included the coordinator, Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis ecological risk analyst, Ecosystem Risk Analysis socioeconomic risk analyst, Ecosystem Risk Analysis senior advisor, Conservation senior analyst, first Atmospheric Environment director, International Joint Commission senior environmental advisor, Energy senior economist, senior research associate, toxicologist, GlobalTox principal, Rawson Academy scientist, and Pulp & Paper Research Institute senior director.

Conservation drafted an outline for Draft 1. The report was now called Ranking Environmental Issues: A Proposed Method. Regarding Audience/Users, Conservation wrote, "Users: policy advisors and subject matter experts."

**In early August, the manager advised the Project Team to continue making the Environment Canada Project a priority, and other National Workshop participants to make it one, as shown below.**

As agreed at the Priority Setting Workshop, the manager sent the draft outline to the Project Team and workshop participants, and asked them to help write or review one or more sections.

The Atmospheric Environment scientific programs coordinator, following up on a conversation he had with the coordinator the day before, invited the manager "to give a presentation on the technique and let us try an evaluation of an atmospheric issue" in early September. He wrote him (and copied the second and a fourth Atmospheric Environment director):

Following your workshop... I reported my impressions to an [Atmospheric Environment] Working Group... This... director-level group... meets about every

month to look at means of improving the link between science and policy in [Atmospheric Environment]. We agreed that the technique your team has developed is an interesting way of stimulating this interaction.

...Since we have considerable issue expertise on the group this could prove quite helpful to you in further testing the methodology.

We will need about 90 minutes in the morning to deal with other business but could then devote the remainder of the day to the presentation and example.

The manager replied to the scientific programs coordinator (and copied the directors):

We will certainly cover this opportunity to expose and test the model.

...[The Advisory Committee on Environmental Protection] is also meeting..., and we are slated to give a short progress report... which may just be 15-30 minutes or... may involve running a case study test - this combined could take up 2 hours - and... we don't know if it is in the morning or the afternoon... Nevertheless consider us firm for your group.

The scientist sent his five pages of "observations and recommendations following the priority-setting workshop" to the coordinator and wrote him, "My notes... show that tremendous progress was made."

The principal, in reply to the manager's request for assistance, wrote the coordinator:

I am very interested in participating as a consultant to this project.... I can assist ... in matters relating to the technical issues of environmental and human risk assessment. I would be particularly interested in working with you to develop a framework for ranking degrees of impairment of ecosystem integrity... Should you have any additional issues pertaining to human or environmental toxicology and health..., I would be pleased to consider them.

He thanked him for the invitation to continue to be involved in "this exciting endeavour."<sup>12</sup>

*The Environment Canada Integration Project.* The first Atmospheric Environment director sent the Environment Canada Project coordinator a late July memo on "overall roles and responsibilities, departmental streamlining and integration" from the chair of the Review Committee to the Atmospheric Environment assistant deputy minister, Corporate Policy assistant deputy minister, Conservation & Protection assistant deputy minister, and others (and copied to the Environment deputy minister and management board).

**The deputy minister established the Environment Canada Integration Project (equal to re-establishing the Headquarters-Regional Integration Project) as**



**a priority for Environment by late July. The Privy Council Office established the Federal Government Integration Project, to "rationalize and integrate internal administrative overhead functions, including information strategies, corporate services, policy groups, communications, intergovernmental, international branches," for Environment and other federal departments at the beginning of July 1993.**

The Committee was set up "to provide overall directions and co-ordination to the work underway in the department to effect various streamlining and integration initiatives." Members included the Corporate Policy assistant deputy minister.

The chair wrote the assistant deputy ministers:

Further to our recent conference call and other discussions, the attached will confirm the allocation of overall roles and responsibilities associated with implementing the [deputy minister's] ten... points leading to departmental integration.

Leads and Secretaries identified in the attached will soon be receiving draft terms of reference for the various tasks that must be undertaken for their comment and to assist in the development of mandate letters. ...Time frames are short and expectations are high. I appreciate your willingness to accept the challenges.

(She attached a complete list of the ten points for reference.)

The ten points included: streamlining, integration model, regional integration, headquarter consolidation of common services, streamline headquarter-regional relations, policy framework for future directions, business approach to environmental information, restructuring option, Environment/Federal Environmental Assessment & Review Office and National Roundtable on the Environment & Economy memoranda of understanding, and timing.

The director also sent the 16-page draft terms of reference for implementing the points (Environment integration issues). The objective of issue 1 was "pursue administrative streamlining aggressively."

A tentative target of \$15m identified savings for 1994-5 has been set as a result of this streamlining

...Issue... 2 deals with the integration option in general and will affect most [headquarter] organizations, ... 3 addresses regional integration, of which [Internal Administrative Overhead Functions] is a component, and... 4 addresses [headquarter] consolidation of common services. This issue... will influence all of these initiatives, and will require intensive collaboration.

The objective of issue 2 was "proceed with the integration option."

As part of the effort to streamline structure, the integration option allows for regional integration and [headquarter] consolidation of [internal administrative overhead functions], while maintaining the integrity of [Conservation & Protection] and [Atmospheric Environment] as the principal delivery arms of the organization. It does not constitute complete headquarters integration (Restructuring Option) which is to be studied (Issue No. 8) for possible future reference.

The [Privy Council Office] directive... requires departments to identify ways to rationalize program delivery, which [Atmospheric Environment] and Conservation & Protection] have pursued under their respective Business Plan and Fabric exercises, and which is the focus of the operational elements of Regional Integration.

The objective of issue 3 was "proceed with regional integration."

The Quebec Pilot Project has been successfully completed and the Quebec Region's approach... was confirmed at the Retreat...

Five departmental regions were... approved: Atlantic, Quebec, Ontario, Prairie-NWT, B.C.-Yukon.

While the original rationale for regional integration was and remains the furthering of the ecosystemic approach... and improved service to clients, it is also now evident that program rationalization and streamlining and accompanying savings need to be addressed.

The objective of issue 4 was "proceed with [headquarter] consolidation of common services and rationalization of other areas such as policy development and monitoring."

Commencing in 1991, studies on [headquarter] consolidation were conducted and some progress was made. More recently, the [Headquarter] Adaptation initiative provided a focus for discussions and agreement on general direction. Integration of the monitoring function has proceeded over the past two years under a business planning approach. Discussions on rationalization of policy development have taken place.

The objective of issue 5 was "simplify and streamline relations between headquarters and regions." The objective of issue 6 was "develop departmental consensus on key results and priorities and reflect them in appropriate policy frameworks (eg. international, federal-provincial and [other federal departments])." The objective of issue 7 was "foster a business like approach to the provision of environmental information.... by assessing the potential for revenue generation, reviewing service standards, and rationalizing service centres."

The objective of issue 8 was "develop and assess the Restructuring Option... or other models."

Privy Council Office has requested departments to review roles and responsibilities for a new mandate (Phase III). In that context, and given the goal of sustainability (and an evolving ecosystemic approach), the restructuring option or other models are to be investigated to ascertain whether they would better enable [Environment] to deliver on these goals. In assessing options, consideration should be given to the criteria of [Environment] 2000 set out in the Year Two Transition Report.

The objective of issue 9 was:

enter into [memoranda] with [the Federal Environmental Assessment & Review Office] and [National Roundtable on the Environment & Economy] with a view to streamlining internal administrative overhead costs of [the Office] and [Roundtable] by [Environment] providing such appropriate services.

The timing, issue 10, was "effective date should be [the beginning of April] 1994, with implementation on or before that date taking place as proposals and plans are approved."

"The overall objective is to achieve consensus implementing the [deputy minister's] Ten Points at the [late] September Retreat. This will require team leaders to work closely together to ensure their study is consistent with directions being pursued by others."<sup>13</sup>

*The Environment Canada Project.* Conservation & Protection/Ecosystem Sciences/Conservation revised the draft detailed Environment Canada Project plan, i.e., the schedule, and drafted the progress report for the Director General Steering Committee (on the "Environmental Priority Setting Project"). The schedule included: a progress report to the Conservation & Protection assistant deputy minister, and a Conservation & Protection management board teleconference by early August; a progress report to the Advisory Committee on Environmental Protection in mid-August; a preliminary draft report to the Steering Committee and Core Director Working Group in late August; the draft report to the Advisory Committee and environmental groups, a presentation at the Advisory Committee meeting, and a possible Environmental Group Workshop to review the report in early September; a presentation at the Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting as an information item, and finalization of the report in mid-September; and a presentation to Environment and other federal department senior management at the beginning of October.

In the Steering Committee progress report, Conservation wrote:

A multi-disciplinary workshop was held... to assess, test the feasibility of, and refine a possible method for ranking environmental issues (within the Environment... context)... The workshop was attended by 52 representatives from government and industry. the number of participants was greater than originally anticipated....

Overall, the proposed methodology was well received.... The greatest difficulty was experienced with the criteria relating to severity, extent, and recovery time and the attendant mathematical underpinnings for scoring. There is general optimism that with some "fine tuning" the... methodology will work at least in respect to pollutant issues and will have potential for application more broadly....

The high degree of interest, enthusiasm and commitment of workshop participants (a number worked late into the night...) confirms not only support for a ranking system but also that we appear to be developing a feasible method....

....Partners who wish to see the draft report include: [the Advisory Committee] and [Canadian Petroleum Products Institute]. The Secretariat for [the Committee] has advised us of their requirements... There should not be any problem in meeting those deadlines.

Copies of the Draft Report will also be forwarded to [the Institute], [Canadian Council of Ministers of the Environment], and to agencies and associations that have participated in the development process.

The workshop agenda, participants list, draft outline, and schedule were attached to the report.

The Ecosystem Sciences director general then sent the report to the Steering Committee and Natural Resources/Policy assistant deputy minister.

In mid-August, the Ecosystem Sciences/Eco-Health director wrote the Environment Canada Project manager:

The [International Joint Commission] Water Quality Board have looked at using risk assessment for environmental priority setting through its risk assessment Task Force. Our workshop report and final [Task Force] report are available through the [third Health/Health Protection director]. [A second Conservation & Protection/Environmental Protection/Regulatory Affairs director's] people are also involved in a similar [Canadian Council of Ministers of the Environment] sponsored activity.

The director asked the manager for a copy of the final Environment Canada Project report. (The Environment Canada Project coordinator presented the Project to the Commission at their early February Workshop.)

**The director general seemed to re-establish the Environment Canada Project as a priority for Environment, as shown below by excerpts from a manager's memo.**

"As the invited [environmental groups] were unable to attend this [National] workshop, another workshop has been scheduled..., expressly to obtain input from the [environmental group] community."

About 15 environmental groups were to be invited to the early September Environmental Group Workshop "to review progress to date and to obtain feedback on the development of a proposed model for priority setting," including the four Advisory Committee on Environmental Protection and two Petroleum Products Industry Task Force and Environmental Priorities Working Group members. The Canadian Labour Congress (a Committee member) national representative was also to be invited. Participants were to be reimbursed for their expenses.

The manager wrote the Pembina Institute executive manager and others:

...Environment..., the lead department on the Federal Environmental Priority Setting Project, is holding a small workshop....

The need for an environmental priority setting system was identified by the Advisory Committee....

....A multi-disciplined Project Team was established... The objective of the workshop would be to review and refine a method for priority setting rather than produce a list of issues for action....

Given the prevailing climate of fiscal constraint, the federal government is aiming to be more effective and efficient in dealing with current and emerging environmental issues. Partnerships with other governments, the private sector and the public will be an increasingly important component of how we tackle these problems. I invite you to attend... so that we can proceed to build the foundation for future environmental management together.

He asked him to confirm his attendance as soon as possible.

Conservation drafted the Advisory Committee progress report and wrote:

As originally envisaged the project was to consist of three phases...

Since the last progress report to [the Advisory Committee] [at the early May] meeting considerable effort has gone into completing phase I.... Relationships to other priority setting initiatives, particularly the [Canadian Petroleum Products Institute] project, have been clarified. It was agreed that this project would refine and elaborate the criteria and methodology used in the [Institute] approach....

A multi stakeholder workshop was held [in late July]...

....The submission of the Draft Workshop Report to [the Advisory Committee] and the Final Report to the [assistant deputy minister] in October will conclude Phase I of the priority setting project. Directions from Senior Management will determine the nature and timing of succeeding phases.

The director general then sent the report to a Regulatory Affairs advisor for transmission to the Advisory Committee Secretariat.

The Pulp & Paper Research Institute senior director sent his notes on "scoring and ranking in the priority setting process" to the coordinator and wrote him:

Most is hopefully the consensus I thought I heard reached by the group - a little represents my own afterthoughts.

....I certainly think you are on the right track. My overall feeling, as a recent [sic] of this and a similar process we are... undergoing at [the Pulp & Paper Research Institute] to get [sic] our own priorities is that the process

- must be simple to understand - the public should not need an extended seminar in order to understand the general process and how it is carried out;
- the scoring should be simple, higher mathematics should be avoided - it give the impression of scientific precision to a process that is essentially judgemental;
- the primary objective is to construct a methodology that breaks the analysis of an issue into its key components so that judgement can be based on a more thorough understanding of each of the components rather than "first impressions" which are often superficial; it should take full advantage of any "hard data" that is available on the subject while still recognizing that there will always be gaps in the available knowledge that must be filled by informed judgement.

The process is intended to guide policy makers in making their judgement NOT to substitute a quasi mathematical process to replace them or their judgement.

The senior director wrote in his notes:

Role of Specialists - In each of the four categories (health, environment, socio/culture, and economic) experts would be used to select the appropriate criteria for defining the severity levels... and also the ranges for each level of extent to achieve the equivalency of public perception of concern when "extent" and "severity" are multiplied together....

....A comment may state the certainty or uncertainty associated with that weighting given, and possibly a potential range. At the end of each category, an estimate... of the overall uncertainty of the total score should be given (usually a best judgement value).

....A political reality was recognized that, in some cases, priorities may be determined by the political judgement of ministers, even though there was cautious hope that in most cases the professional judgement of specialists in the field would normally be used for priority setting.<sup>14</sup>

*The EcoScan and Environment Canada projects.* The Rawson Academy finished their report on the EcoScan process. The Environment Canada Project coordinator sent his three pages of comments on the report to the first Conservation & Protection/Ecosystem Sciences/Eco-Health environmental quality guidelines specialist. He wrote her:

It is not very often that one gets to participate in a project that puts forward a number of original good ideas which could be applied to broad [sic] spectrum of issues. Moreover,... we would like to make use of this approach in our own project.

....It is clearly more convenient and comforting to periodically survey or consult a few "boffins" about the future (e.g., subject matter experts, managers, resource users and interest groups). However, if we really want to pick up the early warning signs of emerging issues, then the tests proposed by Rawson should be more widely applied; i.e., to public consultations, to media analysis and to risk assessments. I... recommend that a wide variety of user groups be encouraged to apply these tests and to use them in management briefings.<sup>15</sup>

*The Environment Canada Project.* The Environment Canada Project coordinator asked the CanTox program manager to have her staff examine how to score the severity and extent of the loss or impairment of ecosystem integrity and provide him with a two to three page presentation, including justification and instructions. He wrote her:

The team used the [United States Environmental Protection Agency's] structural-functional approach taken from the Roadmap to Relative Risk [sic] to define severity. I find this approach to be rather vague and doubt that consistent results would be obtained by different groups using the approach. There are also some key differences between the [Agency's] approach and earlier versions of the severity scale that I presented to the [Priority Setting] team for discussion....

....Look at the literature... I am asking for a short turn around time.

The program manager replied, "As I mentioned on the phone...we feel that in order to do a good job it will require two days work.... We propose a four step process to complete the task... 4. review by in-house ecological expert for accuracy... The estimated cost... is..." The coordinator contracted CanTox.

The coordinator asked the GlobalTox principal to examine how to score the severity and extent of health effects and how to score trends in exposure and provide him with a two to three page presentation. He wrote him, "I am asking for a short turn around time." The coordinator contracted the principal.

The toxicologist sent her six-page presentation to the coordinator and wrote him, "Following a literature review, it was apparent that very little work has been done in this area and that any scoring systems that incorporate scoring for ecosystem integrity are highly subjective and rudimentary at best."

The principal sent his nine-page presentation to the coordinator and wrote him, "Since ranking the severity of effects is an inherently subjective process, a wide survey of medical professionals should be undertaken to develop a consensus view on appropriate scores."

The Industry environmental analyst drafted a report on scoring and ranking socioeconomic consequences (a section for the Environment Canada Project report)

and sent it to a Working Group, including the coordinator, Conservation & Protection/Environmental Protection/Regulatory Affairs economist, and Conference Board senior research associate, for comments. The Group wrote:

We... recommend the development of a series of indicators or key questions that would walk the evaluators through the socio-economic impacts of a given issue. This exercise would probably best be accomplished by an ongoing working group with additional expertise hired as necessary.... We also note that we have not had the time to test these descriptions by actually working through a series of issues or case studies.

The coordinator sent his comments on the draft report to the Group.

The environmental analyst revised the report and sent it to the coordinator. She wrote him:

[The senior research associate] and I were not comfortable with your suggestions - they need further clarification and we did not have time to discuss, rephrase, etc. Hence, my original report stands, with some changes suggested by [the senior research associate]... You might still want to add your fisheries example if you have time.

The Group also wrote, "We also note that we have not the time to compare these descriptions against the criteria in the health and ecosystem areas." The note "we still need separate cultural" was written on the report.

The senior research associate sent his comments on socioeconomic scoring to the coordinator and wrote him:

Since you need this ASAP.... ...I agree almost entirely with [the Pulp & Paper Research Institute senior director's] summary on scoring, and with the [Industry environmental analyst's] description.... I am assuming that the project team will have an opportunity to meet again.

Other Core Project Team members were also drafting sections of Draft 1 of the Environment Canada Project report, including the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis socioeconomic risk analyst, Ecosystem Risk Analysis senior advisor, first Atmospheric Environment director, International Joint Commission senior environmental advisor, and Rawson Academy scientist.

Meanwhile, by mid-August, Conservation contracted Resource Futures to organize, facilitate, and draft a report on the Environmental Group Workshop (15 days work). The Conservation senior analyst and a Resource Futures facilitator met. They



identified a detailed list of tasks for both contractor and client, and discussed the draft agenda.

After the meeting, the facilitator drafted the three-page list of tasks and revised the draft annotated agenda, and sent them to the senior analyst.

The tasks for the contractor included:

Finalize the participant list on the basis of the preliminary list provided by the client... Contact each participant by phone to confirm: attendance; concerns, if any; and what each one wants to get from the workshop.... Cancel the workshop if fewer than 5 environmental group participants confirm.

The tasks for the client included "Provide staff to present the context for priority setting and technical expertise where appropriate... [The Environment Canada Project manager] will... make clear the differences between the [Canadian Petroleum Products Institute] and [Environment] methods."

The draft annotated agenda (for presenters and organizers) included "Identify... three [environmental group] participants ([Advisory Committee on Environmental Protection] members, where possible) who will act as facilitators for each group.... Option: Participants apply their [environmental group's] key issue to the methodology."<sup>16</sup>

*The Canadian Petroleum Products Institute and Environment Canada projects.* The second day of the early September Advisory Committee on Environmental Protection meeting was to focus primarily on "priority setting." The third Canadian Petroleum Products Institute senior director and Conservation & Protection/Environmental Protection director general were to co-present the Canadian Petroleum Products Institute Project, and the Environment Canada Project manager was to present the Environment Canada Project. The Pulp & Paper Research Institute senior director was to present the perspective of a Committee participant. The first Canadian Chemical Producers Association senior director was to chair the session.

Following these presentations, the members were to divide into three discussion groups. Each group was to have a specific question to focus their discussion. In the agenda for the meeting, members were to be asked to consider: Group 1, What factors are motivating the development of a priority setting methodology? Group 2, What are the comments regarding the steps for identifying, ranking and scoring environmental issues? Group 3, How do members see this methodology being used by industry, environmental groups, government, and others? All three groups were to discuss: What

strategic directions should be pursued to develop a process for setting environmental priorities in Canada? What ongoing role, if any, do Committee members wish to play regarding further developments of the process for setting environmental priorities? After lunch, the Committee was to synthesize the recommendations from the groups.

By the same day, the third Canadian Petroleum Products Institute senior director drafted a presentation on the Canadian Petroleum Products Institute Project for the Committee meeting. He wrote:

Why Prioritize

- resources are finite/limited
- desire to work on right issues and utilize resources effectively
- need for a common approach as basis for risk comparison, allocation of resources....

Public Perception Check

- identify gaps between public perception and scientific assessment of issue....
- develop plan to deal with
  - communication
  - risk assessment
- could result in modification of priorities but reason why is clear

Use of Methodology

- requires access to knowledge and expertise
- multi-stakeholder approach....

Request of [Committee]

- endorse the model for further developments
- ensure results of work integrated with [Committee] efforts
- press for one priority setting methodology within government
- assist in broader communication

The Canadian Petroleum Products Institute manager sent the presentation to the second Petro-Canada senior manager, a third Petro-Canada senior manager, the Environmental Protection director general, and Environmental Protection/Industrial Programs chief for comments.

The Environment Canada Project manager wrote on the Canadian Petroleum Products Institute manager's memo, "spoke to [the Environmental Protection/Regulatory Affairs advisor]" and "copy comments to [the third Institute senior director] and arrange [director general-senior director] sharing of presentation." The chief wrote on the memo, "[A staff member] will advise [the director general] that I will handle this."

The Resource Futures facilitator sent the revised agenda for the early September Committee meeting to the Conservation & Protection/Ecosystem Sciences/Conservation senior analyst for "the team." It varied slightly from the draft the Environment Canada Project coordinator had.

The facilitator, third Canadian Petroleum Products Institute senior director, director general, and Pulp & Paper Research Institute senior director were to meet the day before the Committee meeting to "walk through" the agenda. The objective was to do a "dry run" of the Priority Setting session in order to "identify where the presenters of the different priority exercises can build on each others presentation" and "identify the clear differences between the approaches." The facilitator sent the agenda to the Environment Canada Project manager and invited him to attend the preparatory meeting. The senior analyst also invited him (and copied the coordinator).<sup>17</sup>

*The Canadian Petroleum Products Institute Project.* By late August, the final draft reports of the Canadian Petroleum Products Institute and Competitiveness projects were reviewed by Environment and other federal departments. No substantive changes were to be made.

Current and planned activities for the Canadian Petroleum Products Institute Project included: asking the Conservation & Protection/Environmental Protection/Industrial Programs chief to represent Environmental Protection at the end of August Director General Steering Committee meeting; reviewing the Canadian Petroleum Products Institute presentation for the Advisory Committee on Environmental Protection meeting and coordinating Environment and Institute involvement; it not being possible to arrange for the Institute to attend the mid-September Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting; testing the Canadian Petroleum Products Institute "priority setting methodology" at the Institute annual meeting in mid-September - Environment had not been asked to participate or provide supporting material, and asking the Energy senior director to include Institute "Priority Setting" on the agenda of the National Air Issues Coordinating Committee meeting in mid-October - this was to be raised with the Energy assistant deputy minister and "we should know [by the end of August] whether time and priorities allow this."

The chief updated the Environmental Protection director general on the Canadian Petroleum Products Institute and Environment Canada projects (and copied a second Environmental Protection/Regulatory Affairs director, the first Industrial Programs director, and Environment Canada Project manager). Regarding background, he wrote him that "a draft report on [the Environment Canada] methodology, which is compatible with and an enhancement of [the Institute] work" was to be available in late August.

Regarding the Advisory Committee meeting, the chief wrote the director general, "It is suggested that the [director general] open the presentation by outlining the process and participants involved." Regarding the Environmental Protection Committee meeting:

Consideration can be given to whether copies of the [Institute] Priority Setting Report and the [Environment] report should be distributed... should an agenda item be included which would permit [the director general] to briefly describe the context of the priority setting work and respond to questions.

And regarding the Canadian Environmental Protection Act/Federal Provincial Advisory Committee meeting in early October, "This opportunity exists for a discussion on priority setting with or without a [Environment] or [Institute] presentation."

The chief further wrote:

The current work with... [the Institute] is to make parties aware of the process and to obtain buy-in for the [Canadian Petroleum Products Institute] and the [Environment Canada] methodology. Detailed plans for using the methodology including expert involvement from industry and [Environment] will have to be worked out over the next few months.<sup>18</sup>

***The Environment Canada Project.* By late August, the Core Project Team finished Draft 1 of the Environment Canada Project report and resolved the argument about the Environment Canada process determining more than federal government priorities. They recommended the process not determine more, as shown below.**

Draft 1 was 48 pages long, not including the four annexes and bibliography (20 pages). The Team wrote, "The... general and specific conclusions have been drawn from the experience acquired to date in developing the Canadian environmental issues ranking methodology."

General conclusions included:

- there is widespread recognition of the need for... development of a methodology for comparing and ranking environmental issues and establishing priorities amongst them;
- this recognition is translated into considerable support for the project... and enthusiasm and commitment of... project team members....;
- the... participants in the National Priority Setting Workshop... who represented diverse interests and groups, are satisfied that the methodology... holds very considerable promise as a means of meeting the objective of the Department for a priority setting method within the framework and characteristics described - clarity, simplicity, transparency and reproducibility;

- the current report, in part due to the very short time frame available, requires further refinement and development of many details, and
- this will continue to demand... resources.... over the next several months

Specific recommendations included:

- although both... health severity scoring criteria are considered... appropriate, further consideration should be given to determine how this area should be further developed and reconciled by a team of health experts;
- the inclusion of a temporal as well as a spatial dimension in scoring impact should be reconsidered;
- further consideration should be given... to whether... cultural impacts... can be satisfactorily expressed within the... socio-economic factor;
- panel studies should be undertaken to develop and validate the benchmark criteria for all factors;
- a User's Guide should be developed that would document each step of the... method, with examples...;
- the method should be tested on a list of issues already documented by a client group - [Priority Substances List 2], [Accelerated Reduction/Elimination of Toxics], a Comprehensive Air Quality Management Plan or [Remedial Action Plan] or possibly the... [Canadian Council of Ministers of the Environment] Environmental Scan.
- the method should be tested in a Workshop format by a client group trying to set priorities for itself;
- a verification/calibration exercise on the... scoring system should be conducted against current priorities.

The Team proposed:

The Department should give wider publicity to this project by the publication of the report as a discussion document at an appropriate time - early 1994 is considered a feasible time period, and should host a full-scale Workshop on the topic with a full representation of partners and stakeholders.

Annex 1 was a list of Director General Steering Committee and Core Director Working Group members, Annex 2 was the mini-profile sheet (to be developed), Annex 3 was the eight-page profile, and Annex 4 was a glossary of terms.

The second Steering Committee meeting was held at the end of August. Before the meeting, Conservation & Protection/Ecosystem Sciences/Conservation revised the draft detailed Environment Canada Project plan, i.e., drafted overheads for the meeting. Committed events included: testing the methodology at the Advisory Committee on Environmental Protection meeting and the Environmental Group Workshop, progress reports at a Mining Association-Environment meeting in early September and the Canadian Council of Ministers of the Environment/Environmental Protection Committee

meeting, and a presentation at the Canadian Environmental Protection Act/Federal Provincial Advisory Committee meeting.

The Ecosystem Sciences director general sent the agenda for the Steering Committee meeting and Draft 1 of the Environment Canada Project report to the Committee for review and updated them on the Project. **The director general, as shown below, and Core Project Team, in Draft 1, advised the Committee to re-establish the Project as a priority.**

The director general wrote the Steering Committee:

...Very considerable progress has been made by the interdepartmental Project Teams... and further work is required and will be carried out over the next several weeks. The Project Team would like some indication of approval in principle to the methodology and the direction they are following, and I think this would be appropriate to do so, if you agree. The Project Teams have worked hard to produce this in the very short time frame given them and... they deserve our commendation.

....Health... is undertaking a similar process of developing a priority setting methodology of its own, and I hope we may be able to profit from some of their... health related work.

As the document is refined, further editions will be produced and circulated.

**Health/Health Protection established the Health Protection Project (to develop and use a science-based process to determine environmental health priorities) as a priority for Health by now.**

**The Working Group (via the Environment Canada Project manager) resolved the argument about benefit-cost analysts helping decide Environment's priorities. They did not recommend the analysts help in the Environment Canada process, as shown below.**

The manager sent the director general's memo, agenda, and Draft 1 to the Group for their information. He wrote them, "The last several weeks have been extremely busy, and I regret that it has not been possible in the time since the Workshop... to do other than..." The manager suggested that the Group meet at the beginning of September to discuss "where we go from now." The meeting was not to be held.

**At the end of August, at the Steering Committee meeting, the manager advised the Committee to re-establish the Environment Canada Project as a priority, as shown below by excerpts from his overheads. Also shown by excerpts from the meeting minutes, the Committee established it for Environment and other federal departments.**

The meeting was held to obtain comments on the proposed methodology and advice on further work and the approach to upcoming events. With the exception of Transport, all director generals attended or were represented. Agriculture was represented by the Agriculture senior environmental analyst. The Corporate Policy economist also attended.

The manager presented the Environment Canada Project. Proposed events included publishing a report by late 1993 and a national workshop/conference by March 1994.

The Steering Committee discussed the methodology. Key observations and conclusions included:

The introduction in the report and subsequent presentations to other audiences... should include clear statements as to the purpose of the environmental priority setting project, i.e. to

- define what is an environmental issue, and
- develop a potential methodology for ranking and clustering issues.

These outputs are intended to assist the decision-maker but it is not a decision-making tool and would contribute to the first phase of a risk assessment/management decision-making process.

In comparison, the [Canadian Petroleum Products Institute] priority process was developed to select and prioritize [sic] actions that could provide maximum environmental benefit within a given investment framework. The two processes are compatible and the [Environment] project fits within the latter. It is essential to be clear and specific about intended outputs and uses.

In reviewing the scoring and ranking methodology... the following concerns were noted:

- Although the methodology is based on assessing the relationship between ecosystem integrity and the impact of human activities, some committee members noted that the relationship to, and implications for, a sustainable development approach to environmental management were not clear; this should be rectified.
- The project team should resolve the question of the two health severity and extent alternatives.
- The scoring of "extent" for ecological (and socio-economic) factors needs further consideration and possible refinement.
- The scoring of socio-economic impacts is limited in its scope. Consideration shall be given to including economic benefits/opportunities as opposed to just addressing costs or impacts. If this cannot be done then the existence of the former should be clearly flagged. (It was noted that the terms of reference for the Working Group [Project Team] did not provide for the broader approach...). It was acknowledged that the... report still needed to address more fully, the scoring of cultural impacts.
- The... methodology appears to deal relatively easily with existing issues. The logical extension of this approach... seems to support a "react and cure" approach rather than one of "anticipate and prevent." The identification of emerging issues is particularly important for a preventative approach, and in this respect the methodology should be strengthened and improved, if possible.

- Testing the scoring options... at the [Environmental Group] Workshop should be helpful.

The manager reported on "planned events in immediate future." The Steering Committee discussed the events and other business.

It was agreed that good progress had been made... given the very tight time frame. The Committee indicated support for the next steps.

- The draft report will be the basis for the presentation to [the Advisory Committee on Environmental Protection]... and for discussions... at the [Environmental Group] Workshop. The introductions... should explicitly define the purposes and scope of the project and that it is very much still in the feasibility phase, ...to prevent unrealistic expectations.
- The methodology should be tested on a range of case studies to see if it has sufficient resolving power... Project Team members would be requested to participate...
- A Second Draft of the Report should be prepared by the end of September... reflecting comments received.
- If testing confirms the feasibility of the methodology, and subject to a [Conservation & Protection/Environment] Management Board approval, a public discussion paper could be considered for release..., to facilitated broader consultations.

In other words, the Steering Committee approved Draft 1 of the Environment Canada Project report.

The Natural Resources/Energy (formerly the second Energy) director left the Steering Committee meeting early. She apologized to the Ecosystem Sciences director general and wrote him:

I have several "crises" back at the office... & need to get back for another meeting.

I remain interested in the project which seems generally to be going well

I would like to talk to you... as to how we're handling the socio-economic side.

This is really my area of expertise and concern. I'm not yet comfortable about methodology, process or players... (perhaps because [the Energy senior economist] who is my rep on the working group [Project Team] is away & has not been able to brief me fully)....

I share your views re: getting bogged down. A word of advice for [the Advisory Committee on Environmental Protection] (I've been through a # of these presentations), you need an efficient way to get your full framework out at the beginning. I'd recommend talking to [the Conservation & Protection/Environmental Protection/Industrial Programs chief] about the overview flow chart prepared for [the Canadian Petroleum Products Institute].<sup>19</sup>



Conservation & Protection Assistant Deputy Minister Approval of the Plan (Phase 3)

In this section, the fourth process of re-establishing the Environment Canada Project as a priority for Environment began and ended. Several other processes of determining environmental priorities intersected with this one, including establishing and re-establishing of the Canadian Petroleum Products Institute, Environment Canada, and Expanded Environment Canada-Canadian Petroleum Products Institute projects for the Advisory Committee on Environmental Protection, government, Canadian Petroleum Products Institute, Canadian Council of Ministers of the Environment, Industry, other federal departments, and an environmental group.

Specifically, the Environmental Priorities Working Group - including the Natural Resources/Energy senior economist and Health/Health Protection biostatistician - advised the Advisory Committee to establish the Canadian Petroleum Products Institute Project, and to argue the same to government. The Advisory Committee advised the Institute to re-establish it, argued to the Memorandum of Understanding Steering Committee that Environment and Industry should advise the Council to establish the Environment Canada Project, advised Environment to re-establish it, and advised that the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established. Then the Steering Committee re-established the Environment Canada Project for Environment and Industry (use the Environment Canada process). The Advisory Committee established it for themselves. And one environmental group senior representative did not establish it or the Canadian Petroleum Products Institute and Expanded Environment Canada-Canadian Petroleum Products Institute projects for the environmental group.

During these processes of determining environmental priorities, two arguments emerged about whether projects themselves should be priorities, and the scope of various processes for determining priorities. The Working Group argued to the Advisory Committee that government should establish the Canadian Petroleum Products Institute Project because one (the Canadian Petroleum Products Institute) process should determine national environmental priorities. And the Advisory Committee argued to the Steering Committee that Environment and Industry should advise the Council to establish the Environment Canada Project because one (the Environment Canada) process should determine national environmental priorities in 1994.

At this point, the Advisory Committee resolved the argument about one (the Canadian Petroleum Products Institute) process determining national environmental priorities. They argued to the Steering Committee that Environment and Industry should advise the Council to establish the Environment Canada Project because one (the Environment Canada) process should determine national environmental priorities in 1994. The other arguments were not resolved during this period, September 1992.

### Evidence

At the beginning of September, the Environment Canada Project continued as Conservation & Protection continued to implement Phase 1 of the Project plan, led by Conservation & Protection/Ecosystem Sciences.

*The Canadian Petroleum Products Institute and Environment Canada projects.*  
The final Canadian Petroleum Products Institute Project report was distributed at end of August. It was the same as the July draft.

The Conservation & Protection/Environmental Protection/Industrial Programs chief drafted "talking points" for the Environmental Protection director general to start off the Canadian Petroleum Products Institute methodology presentation at the Advisory Committee on Environmental Protection meeting. He wrote:

...The reports of the [Environmental Priorities and Competitiveness Issues] working groups and the [Petroleum Products Industry] Task Force will be available soon....

One specific contribution worth mentioning is the very strong participation and excellent conceptual input from [the executive manager] of the Pembina Institute....

The [Environment] work concentrates, in a more detailed way on the background information needed to assess a full range of issues and enhances/improves the issue prioritization components of the process. The [Environment] work is fully compatible with what has been developed by [the Canadian Petroleum Products Institute]. [The Environment Canada Project manager] will get into this after our presentation.

A few words on the way the priority setting process is meant to be used:

- It is science-based, health environmental and socio-economic impacts drive the output.
- It ignores current program set-points like the Green Plan, international agreement and current budgets.
- It is meant to influence the direction of new action plans or influence the direction we go with new agreements or initiatives.
- It is not meant to replace current planning processes or current resource allocation.

The chief sent the points to the third Canadian Petroleum Products Institute senior director for comments (and copied the manager).

The same day, a two-hour meeting was held to prepare the director general for the Committee meeting, including the Regulatory Affairs chief on economic instruments, biodiversity, the manager and Industrial Programs chief on "priority setting" (half an hour), harmonization, and status and action reports.<sup>20</sup>

*The Environment Canada Project.* Participation of ten of 12 environmental groups at the Environmental Group Workshop was confirmed (not the Pembina Institute executive manager who was on holidays). The Sierra Club senior representative and Environmental Law Centre staff counsel (an Advisory Committee on Environmental Protection member) were to be the small group facilitators. Conservation & Protection/Ecosystem Sciences/Conservation was to provide case studies on smog and ultraviolet-B radiation. The Environment Canada Project coordinator and Conservation/Ecosystem Risk Analysis ecological risk analyst were finalizing them.

The Resource Futures facilitator sent the participants' agenda, annotated agenda, and participant list to the Environment Canada Project manager and wrote him:

[The coordinator] was expected to present... [The Conservation senior analyst] mentioned that maybe [the International Joint Commission senior environmental advisor] could substitute and I recommended [the Rawson Academy scientist]... I have just spoken to [him] and, in discussion with [the new Academy executive director] a decision will be made shortly.

The facilitator and manager were to speak the following day concerning Environment staff and others to attend.

By the next day, the Core Project Team - now including the manager, coordinator, ecological risk analyst, Ecosystem Risk Analysis senior advisor, senior analyst, and Ecosystem Risk Analysis socioeconomic risk analyst - and first Atmospheric Environment director, Industry environmental analyst, and executive director were to attend.

The senior analyst sent the agendas, participant list, and facilitator's guide to the coordinator and others.

The manager sent Draft 1 of the Environment Canada Project report to National Workshop participants for review and comment by mid-September. He updated them on the Project and wrote:

In assembling the material received and in trying to incorporate all the commentary made, I am sure that we have overlooked some of your comments and suggestions. Also, given the time frame imposed upon us, we have not been able to resolve all problems that were identified at the workshop... In addition, from a decision-maker's point of view, it was seen as important to include provision in the method for identifying "the ability to manage" the issue.

The report was also sent to the Advisory Committee, environmental groups (via courier), Canadian Petroleum Products Institute, Canadian Council of Ministers of the Environment, and other "agencies and associations that have participated in the development."

In early September, the Core Project Team began revising Draft 1. The ecological risk analyst agreed to follow-up on the request for case study materials/information after it was sent that week and build about 20 case studies, by now included in the draft detailed Environment Canada Project plan, i.e., the work plan. The senior advisor agreed to receive and acknowledge comments on Draft 1, and consolidate and incorporate them. The manager was to revise and produce Draft 2. The socioeconomic risk analyst was to help the other Team members.

The senior analyst, coordinator, and manager were to be unavailable from mid-September until later. The senior analyst was to finish a long-overdue project, the coordinator was to go on holidays (or was ill), and the manager was to go to a Major Industrial Accidents Council meeting.

The plan by now also included a special meeting in late September to review the comments and set up arrangements for revising the report, and for a small workshop in late September to review the case studies.

The manager wrote the Team:

If [the coordinator and senior analyst] are around for any of the time frame, they can assist in a supportive role, but we cannot count on them.

I think [the ecological risk analyst and senior advisor] might look for assistance from other key members of the project team, (i.e. [the Conservation & Protection/Environmental Protection/Pollution Prevention senior engineering advisor, senior environmental advisor, Ecosystem Sciences/Water Research science liaison officer, director], etc.)....

[The senior advisor and ecological risk analyst] respectively might want to consider in the next two days proposing who we should ask to join us in these two events and setting up the invitations.

The workshop was later rescheduled to November, and then cancelled.

The second Mining Association senior director, and senior engineering advisor sent their comments on Draft 1 to the Environment Canada Project manager (discussed in Chapter 6).

The Environment Canada Project was presented to the Association.<sup>21</sup>

*The Environment Canada and Canadian Petroleum Products Institute projects.*

The day before the Advisory Committee on Environmental Protection meeting, the preparatory meeting was held. (Thirteen people were to be assigned to each of the three discussion groups; each group was to include a facilitator, secretariat, and a mix of organizations, some of whom were not Committee members; and participants were to include the Natural Resources/Energy senior economist, Canadian Council of Ministers of the Environment, and municipal government.)

At the sixth Committee meeting, the Committee reviewed the final Canadian Petroleum Products Institute Project report and Draft 1 of the Environment Canada Project report. **The Environmental Priorities Working Group advised the Committee (via the Conservation & Protection/Environmental Protection director general and third Canadian Petroleum Products Institute senior director) to establish the Canadian Petroleum Products Institute Project as a priority, and to argue the same to government because one (the Canadian Petroleum Products Institute) process should determine national environmental priorities, as shown below by excerpts from the director general and senior director's overheads and meeting minutes. Also shown by excerpts from the meeting minutes, the Committee advised the Institute to re-establish it, advised Environment to re-establish the Environment Canada Project, and advised that the Expanded Environment Canada-Canadian Petroleum Products Institute Project (to develop and use the Environment Canada-Canadian Petroleum Products Institute process to determine national environmental priorities) should be established. The Committee resolved the arguments about government using one (the Canadian Petroleum Products Institute) process. They argued to the Memorandum of Understanding Steering Committee that Environment and Industry should advise the Canadian Council of Ministers of the Environment to establish the Environment Canada Project because one (the Environment Canada) process should determine national environmental priorities in 1994. Then the Steering Committee re-established the Environment Canada Project for Environment and Industry (use the Environment**

**Canada process). The Advisory Committee established it for themselves. One environmental group senior representative did not establish it or the Canadian Petroleum Products Institute and Expanded Environment Canada-Canadian Petroleum Products Institute projects as priorities for the environmental group.**

A new Industry assistant deputy minister was the new co-chair. A municipal government representative, an Ottawa councillor, agreed to join the Advisory Committee. (Efforts to find a representative had been underway since the second Committee meeting.) Other new members included a Dalhousie University associate vice-president, Petro-Canada senior manager, and National Roundtable on the Environment & Economy executive director.

The Industry assistant deputy minister commented on the changes Industry was undergoing. "The Department has expanded by a factor of four with the inclusion of Communication and Consumer and Corporate Affairs, while senior management has been reduced by a third."

[The Conservation & Protection assistant deputy minister] proposed that [the Advisory Committee] revisit its Terms of Reference at the February meeting in order to review the scope of its work in light of the issues brought to [the Committee].... Due to the change in co-chair, and the importance of having input from both government departments, it was also decided to defer the evaluation of [the Committee] to February.

The second day, a four and a half hour session on "priority setting" was held. The first Canadian Chemical Producers Association senior director chaired the session. "He stated that because of the scarcity of resources and broadening environmental issues... we have to prioritize. This is not an exercise that will be the decision-maker, but rather one basis for decision-making."

The first Institute senior director briefly discussed the background of the Canadian Petroleum Products Institute methodology. The Environmental Protection director general gave an overview (see his beginning of September talking points).

The third Institute senior director presented a detailed description of the Institute model (his overheads were basically the same as his mid-August draft overheads). He also told the Advisory Committee:

#### Conclusions

- the process is realistic, the need is well founded
- the process should be one tool, among others, to aid in decision-making
- the process is applicable to other sectors

#### Next Steps

- test run the model
- link to other processes, [Advisory Committee], [Canadian Council of Ministers of the Environment], [National Air Issues Coordinating Committee]
- inform other sectors

Request of [Advisory Committee]....

- provide forum for review of model outputs

"[The senior director] requested that [the Advisory Committee] endorse the [Canadian Petroleum Products Institute] methodology and provide a forum to which he can return with updates."

"[The Advisory Committee] supported [the Institute] in its ongoing efforts to develop this methodology. It was recommended that the methodology be broadened to include non-pollutants, and that Steps 4-6 be expanded to allow for its application to other sectors."

In response to [the Stelco Incorporated senior manager], [the third Institute senior director] agreed that the availability of information is a shortcoming and that conservative estimates will be used where little data exists. The uncertainty factor is important and will have to be used for relative ranking.

[The first Mining Association senior director] said that not all environmental problems are caused by pollutants (e.g. certain biodiversity issues) and a bigger loop is needed as well as a more expansive resource evaluation.

[The Canadian Nature Federation executive director] suggested that the... title be changed to reflect the limited focus on pollutants, or that the methodology be broadened so that it can encompass other environmental issues.

The Environment Canada Project manager presented an overview of the method and current status of Environment's "Priority Setting Exercise."

The Pulp & Paper Research Institute senior director gave his perspective as an Advisory Committee participant at the Environment Priority Setting Workshop.

Points made included:

- There are benefits to a common process....
- ....This method.... acknowledges that politicians may reverse the rankings, but the process will be transparent and the public will be able to understand the methodology and question the decisions.
- This method could help promote a one-window approach, or at least a designation of who will do what.
- We should not get hung up on mathematical precision. Perhaps a high/medium/low classification, as in triage, will suffice.

The members divided into three discussion groups. Group 1 discussed the foundation for developing a "priority setting method" (how have these factors affected

the way the methodology has developed). Problems identified included "risk that methodology could reduce uncertainty to apparent certainty by applying numerical values to the issues" and "the methodology could lead to reduced emphasis on emerging issues."

Group 2 discussed the methodology for "setting priorities" (what are participants' comments regarding the steps for identifying, ranking and scoring environmental issues within the Environment Canada methodology). Their response included "the 'flags' (such as equity and uncertainty) did not necessarily affect the ranking; how important should they be?"

Group 3 discussed the application of "priority setting methodology" and results (how do you see a methodology, and the results of a methodology, being used by industry, environmental groups, government decision-makers, and others). Their response included:

- there must be a buy-in by all parties....  
[Environmental groups] will -
- need to buy in but we're not sure they will
- be a "watchdog" of the process and progress

All three groups discussed strategic directions (what strategic directions should be pursued in order to continue to develop a process for "setting environmental priorities" in Canada) and the Advisory Committee's role (what ongoing role, if any, do Committee members wish to play regarding further development of the process for "setting environmental priorities"). Regarding strategic directions, recommendations and conclusions included:

- Environment... encourage the involvement of [Canadian Council of Ministers of the Environment]... possibly, to hold a national workshop....
- Environment... and Industry..., along with Health..., Fisheries and Natural Resources, pursue federal/provincial coordination and recommend that the Minister of the Environment in both federal and provincial jurisdictions take responsibility for coordination between the various departments in each level of government....
- encourage harmonization and priority setting.

Regarding the Committee's role, recommendations and conclusions included:

- [Committee] members... approach provinces to establish common priorities
- encourage [Industry] and [Environment] to bring the issue of priority setting to the new Cabinet Committee on the Environment and the Economy



- encourage [Industry] to stay involved (break down internal trade barriers, harmonization)....
- endorse the [Canadian Petroleum Products Institute] process with the following provisions:
  - involve other sectors to make sure it works cross-sector....  
(It was suggested that some environmental "issues" could have a positive effect, such as a wilderness area providing a place for human recreation, and should be considered in the methodology.)
- endorse one methodology that can be used by all levels of government

(See also action items below.)

After lunch, the Advisory Committee synthesized the recommendations from the discussion groups. The action items were:

- Environmental Priority Setting Methodology - [Canadian Petroleum Products Institute]  
[The Committee] supports further development of the [Canadian Petroleum Products Institute] methodology and would like [the Institute] to keep [the Committee] informed of progress.
- [Canadian Council of Ministers of the Environment] involvement  
It was strongly recommended that Environment... and Industry... request that [the Council] be involved in the promotion of a coordinated approach to the development of a priority setting methodology and that the [Council] develop a list of national priorities in 1994. Environment... volunteered to work with [Industry] to develop a list of federal priorities by the Fall of 1994.
- The government communicate with and educate the public, industry, environmental groups and relevant government departments regarding priority setting.
- Environment... establish expert groups to direct the priority setting process and accept, test and use the methodology. Environment... use the resulting list of unknowns to focus on potential areas of research and development.
- [Committee] members test the priority setting methodology and report back to the Committee on their experiences.
- It was recommended that there be one overall methodology, an integration of the [Institute] and [Environment] models, flexible enough to accommodate different sectors.
- It was requested that a draft summary of recommendations and conclusions arising from the [Committee] discussions be sent to members for comment in advance of the minutes.

"The Secretariat agreed to send the summary of recommendations regarding priority setting to members for their comments prior to the distribution of the Aide Memoire."

The manager later wrote the Conservation & Protection/Ecosystem Sciences director general:

The first step recommended by [the Advisory Committee] is that [Environment] and [the Canadian Petroleum Products Institute] host a national workshop... to get wider

comment on the... methodology - the first part being [the Environment] Methodology, the second part being [the Institute's] steps 3 to 7.... [The Committee] is also urging [the Canadian Council of Ministers of the Environment] to come on board and to provide a list of prioritized issues within a year, failing that [Environment] should return to [the Committee] in a year with such a list.

The director general later wrote the Director General Steering Committee, "An [environmental group] representative stated that the development of such a methodology was not a priority for them at this point."

The Group 2 reporter wrote in his notes:

- [manager]: what minimum info is required to make judgments?... will be difficult to compare issues across sectors; may be able to rank issues within sectors....
- [third Institute senior director]: seeking [National Air Issues Coordinating Committee] endorsement.... agree to use model to assist in [Committee] work....
- [Sierra Club]: presentation reflects [environmental group] input but... end of pipe approach still... will not speak to prevention - or allow us to get to root causes of issues.... too anthropogenic - not enough ecosystem... externalities need to be considered in cost/benefit analysis.... should not be used for cost cutting this year... consensus approach needed
- ...not on politically - not useful
- ...method pretends to be scientific... downplays value judg... not conducive to making lifestyle changes
- ...likes it.... won't work in anticipate & prevent situation....
- ...it will not replace political will....
- [Conservation & Protection assistant deputy minister]: hope that people will go to workshop... overwhelmed by the negative reaction of [environmental groups]

In other words, the Conservation & Protection assistant deputy minister (and Industry assistant deputy minister) approved Phase 3 of the Environment Canada Project plan (use the Environment Canada process).

During the meeting, a session on harmonization was also held.

[The Environmental Protection director general] presented environmental protection issues as they relate to harmonization... Harmonization and priority setting are connected. If a set of priorities can be agreed on, then the two levels of government can plan collectively.... [The Canadian Council of Ministers of the Environment] has included harmonization in its priorities.

Other items on the Advisory Committee agenda included Economic Instruments and Biodiversity, and the Canadian Environmental Protection Act Review, Legislative Framework on Pollution Prevention, Regulatory Review, and National Pollution Prevention Strategy (all deferred to the next meeting).

(After the meeting, the third Canadian Petroleum Products Institute senior director sent his and the Environmental Protection director general's overheads to the Environmental Priorities Working Group and wrote them, "Please see attached the presentation that [the director general] and I made to [the Advisory Committee] on your behalf!")<sup>22</sup>

### Discussion

#### The Canadian Petroleum Products Institute Project

*Re-establishing it for Environment and other federal departments.* During the process of re-establishing the Canadian Petroleum Products Institute Project as a priority for Environment and other federal departments (and the Canadian Petroleum Products Institute and two environmental groups), the Environmental Priorities Working Group - including the Energy economist and Health/Health Protection statistician advised the Petroleum Products Industry Task Force to allocate more time to this Project. Then the Task Force - the interim decision-maker for the Project - decided to allocate more time, so the economist and statistician seemed to have a major influence on the decision.

In this process, the economist and statistician seemed to be asked for advice by the Group, and to offer it to them; and the Group was asked by the Task Force, and offered it to them. So perhaps the economist and statistician had a major influence on the decision because *they were asked or offered*. But why were they asked, and why did they offer? In the process that was to be developed and used in this Project - the Canadian Petroleum Products Institute process - government and non-government experts were to be asked by the Institute.

Like the economist and statistician, some Task Force members were public servants, but unlike them, they were managers (Environment, Energy, Health Protection, and other federal department), not experts, although they had expertise, e.g., the Conservation & Protection and Corporate assistant deputy ministers in engineering and economics, respectively. So perhaps the major influence by the economist and statistician on the decision did not make a significant difference because the Task Force knew as much as they did about the science of deciding priorities. In addition, the other Group members from Environment and other federal departments had expertise in

engineering, economics, sociology, and natural science. Further, the other participants did not seem to question if this Project should be established, with the major exceptions of the Conservation & Protection/Ecosystem Sciences, Conservation & Protection/Environmental Protection, and Conservation & Protection/Policy director generals (Environment managers with expertise in natural science) who argued to the Conservation & Protection assistant deputy minister to end it, re-establish the Environment Canada Project, and not establish the Imperial Oil Project; and Conservation & Protection who advised the Working Group that this Project should be ended and the Environment Canada Project re-established. In particular, after the Task Force updated the Environment and other federal department (Health, Industry, Energy, Transport, and Finance) deputy ministers (all final decision-makers for Environment and other federal departments) on their decision to establish this Project, they advised the Institute/Board of Directors to do the same. But what did other government experts know?

#### The Environment Canada Project

*Re-establishing it for Environment and other federal departments.* During the second process of re-establishing the Environment Canada Project for Environment and other federal departments, the Core Project Team - including the Conservation & Protection/Ecosystem Sciences/Conservation natural scientist, Conservation economist, and Industry economist - advised the Director General Steering Committee - including the Agriculture economist - to allocate staff and more time to this Project. Then the Committee - the interim decision-maker for this Project - decided to allocate staff and some more time; so the natural scientist, and Conservation and Industry economists seemed to have a minor influence on the decision; and the Agriculture economist seemed to have a major influence. Other government experts did not offer advice, so they seemed to have no influence.

In this process, dissimilar to this first process of re-establishing this Project for Environment and other federal departments (discussed in Chapter 4), the natural scientist, and Conservation and Industry economists seemed to be asked for advice by the Team, and to offer it to them; the Team were not asked, but offered it to the Committee; the Agriculture economist seemed to be asked by the Committee (via the Agriculture director general), and to offer it to them; and other government experts did

not seem to be asked, or to offer. So perhaps the natural scientist, and Conservation and Industry economists had only a minor influence on the decision because *although they offered advice to the Committee, they were not asked for it by them*. The Agriculture economist had a major influence because *basically he was asked by the Committee and offered it to them*. And other government experts had no influence because *either they were not asked or did not offer*. But why were the natural scientist and economists asked (by anyone), and why did they offer? And why were other government experts not asked, and why did they not offer? In the process that was to be developed and used in this Project - the Environment Canada process - Environment and other federal department experts were to be asked by Environment.

Like government experts, the other Committee members were public servants, but unlike them, they were managers (Environment, Industry, and other federal department), not experts, although they had expertise, e.g., the Conservation & Protection/Ecosystem Sciences, Conservation & Protection/Environmental Protection, and Corporate Policy director generals in natural science, natural science, and economics, respectively. So perhaps the minor influence of the natural scientist, and Conservation and Industry economists did not make a significant difference because the Committee knew more than they did about the science of deciding priorities. The major influence of the Agriculture economist did not make a significant difference because the Committee knew as much as he did about the science. And the lack of influence by other government experts did not make a significant difference because the Committee knew as much as (or more than) they did about the science. Yet, the other Team members from Environment and the International Joint Commission had expertise in sociology, engineering, and natural science. Still, they and the other participants did not question if this Project should be re-established. But what did other government experts know?

*Re-establishing it for Environment.* During the fourth process of re-establishing the Environment Canada Project for Environment, the Conservation & Protection assistant deputy minister - the final decision-maker for this Project - decided to allocate more time to it. Government experts did not offer advice, so they seemed to have no influence on the decision.

In this process, similar to the first through third processes of re-establishing this Project for Environment (discussed in Chapters 3 and 4), government experts were not

asked for advice, and did not offer it. So perhaps they had no influence on the decision because *either they were not asked or did not offer*. But why were they not asked, and why did they not offer? In the process that was to be developed and used in this Project - the Environment Canada process - Environment and other federal department experts were to be asked by Environment.

Like government experts, the assistant deputy minister was a public servant, but unlike them, he was a manager (Environment senior), not an expert, although he had expertise in engineering. So perhaps the lack of influence by government experts did not make a significant difference because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities. Also, the other participants - including Environment and other federal department managers with expertise in natural science and economics - did not question if this Project should be re-established. In particular, after the Director General Steering Committee (including the Agriculture economist) re-established it; the Advisory Committee on Environmental Protection advised Environment to do the same, the Canadian Petroleum Products Institute to re-establish the Canadian Petroleum Products Institute Project, and the Memorandum of Understanding Steering Committee (including the assistant deputy minister) to establish the Expanded Environment Canada-Canadian Petroleum Products Institute Project; and the Industry assistant deputy minister (a Committee member) re-established this Project for Industry. But what did government experts know?

It is important to note that some participants in the Environment Canada and other projects continued to question if experts from certain organizations or in certain disciplines should be involved in determining environmental priorities, and how they should be involved. Corporate Policy argued to the Policy Advisory Committee and Core Director Working Group that benefit-cost analysts should help decide Environment's priorities. And some National Workshop participants questioned the Project Team - including the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis ecological risk analyst, Ecosystem Risk Analysis socioeconomic risk analyst, Ecosystem Sciences/Water Research science liaison officer, Ecosystem Sciences/Strategic Planning science programs officer, two Ecosystem Sciences/Eco-Health environmental quality guidelines specialists, Conservation & Protection/Wildlife resource economist, Conservation & Protection/Environmental Protection/Regulatory Affairs economist, Corporate Policy economist, Natural Resources/Forestry forest

resource economist, Energy senior economist, Energy analyst, Industry environmental analyst, Environmental Protection/Industrial Programs senior engineer, and Health/Health Protection biostatistician - whether the Team alone should set Environment's priorities, including whether other experts should help.

Generally, however, the participants all still seemed to agree that at least some experts (the Team, not benefit-cost analysts) knew best about the science of deciding priorities.

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#### NOTES

<sup>1</sup> Environment Canada Project manager to Core Director Working Group and Project Team, memo of June 16, 1993, "Key Decisions of DGs Steering Committee on Priority Setting"; "ESED Horizontal Teams: Fact Sheet."

<sup>2</sup> Conservation & Protection/Environmental Protection/Operations director to Conservation & Protection/Ecosystem Sciences/Environmental Assessment director, memo of June 18, 1993, "Interpretation of Proposed Criteria for Priority Setting Exercise," copied to Environmental Protection director general, Conservation & Protection/Ecosystem Sciences director general, Conservation & Protection/Wildlife director general, Conservation & Protection/Policy director general, Ecosystem Sciences/Strategic Planning director, and Regional Directors, 1-3.

<sup>3</sup> Conservation & Protection/Environmental Protection/Industrial Programs chief to first Industrial Programs director, memo of June 22, 1993, "Attached, as requested...", copied to Environment Canada Project manager and Conservation & Protection/Communications director; Conservation & Protection assistant deputy minister to first Canadian Petroleum Products Institute senior director, draft letter, "Report of the Petroleum Products Industry Task Force"; Environment Canada Project manager to first Conservation & Protection/Environmental Protection/Industrial Programs director and Industrial Programs chief, memo of June 22, 1993, "[Conservation & Protection assistant deputy minister] response to [first Canadian Petroleum Products Institute senior director]."

<sup>4</sup> Conservation & Protection/Ecosystem Sciences director general to Director General Steering Committee, memo of June 22, 1993, "Draft Summary of Conclusions - First DG Steering Committee Meeting"; Conservation & Protection/Ecosystem Sciences/Conservation, "R&D Activities 1993-94," Draft, June 25, 1993, "1. Risk Assessment/Priority Setting Processes"; Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis socioeconomic risk analyst to Project Team, memo of June 25, 1993, "Environment Canada Priority Setting Project Meeting - June 29, 1993"; Project Team, minutes of second meeting of June 29, 1993; Project Team, draft agenda of second meeting of June 29, 1993; "Tasks"; Conference Board senior research associate, overheads for second Project Team meeting of June 29, 1993, "Sustainability as an Organizing Concept for Environmental Priority Setting"; Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis ecological risk analyst, overheads for second Project Team meeting of June 29, 1993, "Using an Ecosystem Framework for Priority Setting"; Environment Canada Project manager to Core Director Working Group and Project Team; Environment Canada Project manager to Core Director Working Group, memo of December 13, 1993, "Status of Priority Setting Project"; Project Team, minutes of third meeting of July 8, 1993, 1-6; Environment Canada Project coordinator to Project Team, memo of July 7, 1993, "Environment Canada Priority Setting Meeting - July 8, 1993"; Environment Canada Project coordinator, "Priority Setting Team Tasks," 1-4; Environment Canada Project coordinator to Project Team, memo of July 9, 1993, "Team Meeting: Working Group Session on Scoring & Ranking"; Environment Canada Project manager to Advisory Committee on Environmental Protection, letter of July 14, 1993, "I would like..."; Environment Canada Project manager to Canadian Environmental Network executive director, letter, "[The Environment Canada Project coordinator] has informed..."; Environment Canada Project manager to Special Audience, letter, 1993, "On July 26-28..."

<sup>5</sup> Rawson Academy, "Method: Forecasting Threats to Aquatic Ecosystems," Draft, July 15, 1993; Project Team, minutes of fourth meeting of July 15, 1993.

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<sup>6</sup> Project Team, minutes of fourth meeting of July 15, 1993; Rawson Academy scientist, overheads for fourth Project Team meeting of July 15, 1993, "What environmental issues..."; Project Team, draft agenda of fourth meeting of July 15, 1993; Conservation & Protection/Environmental Protection/Pollution Prevention senior engineering advisor to Environment Canada Project manager, memo of July 16, 1993, "Comments on Priority Setting Project," copied to Environmental Protection director general, National Office of Pollution Prevention director, Environment Canada Project coordinator, and Environmental Protection/Industrial Programs senior engineer; Environment Canada Project manager to Conservation & Protection/Environmental Protection/Pollution Prevention senior engineering advisor, memo of July 19, 1993, "Thanks for your..."; Framework Group, draft minutes of meeting of July 20, 1993; Project Team, minutes of fourth meeting of July 15, 1993; International Joint Commission senior environmental advisor to Framework Group and Environment Canada Project coordinator, memo of July 21, 1993, "As always, we..."; Conference Board senior research associate to International Joint Commission senior environmental advisor, and Conservation & Protection/Ecosystem Sciences/Conservation senior analyst, memo of July 16, 1993, "Finalizing tasks for 'framework' group"; Conference Board senior research associate to Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis socioeconomic risk analyst, memo of July 21, 1993, "Comments on minutes..."; Conference Board senior research associate to Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis ecological risk analyst, memo of July 23, 1993, "[Environment Canada Project coordinator's] request yesterday"; Conservation & Protection assistant deputy minister to Natural Resources/Policy assistant deputy minister, letter of July 21, 1993, "Environmental Priority Setting Initiative."

<sup>7</sup> Corporate Policy, "Integrating Economics into Environmental Priority Setting," Draft for Discussion, July 21, 1993; Corporate Policy director general to Policy Advisory Committee, Core Director Working Group, and Resource Valuation Working Group, memo of July 22, 1993, "Integrating Economics into Environmental Priority Setting."

<sup>8</sup> Ontario Environment & Energy research coordinator to Environment Canada Project coordinator, letter of August 12, 1993, "National Priority Setting Workshop"; Conservation & Protection/Wildlife head, conversation, July 23, 1993; Environment Canada Project manager to Director General Steering Committee and Core Director Working Group, memo of July 22, 1993, "Environmental Priority Setting Workshop, July 26-28, Federal Study Centre, 1495 Heron Road, Room B-102"; Resource Futures facilitator, "Ranking Environmental Issues: A Priority Setting Methodology: Report on the September 10, 1993 Workshop," Conservation & Protection/Ecosystem Sciences/Conservation, September 1993, 1; "Progress Report: Environmental Priority Setting Project"; Environment Canada Project manager to Director General Steering Committee and Core Director Working Group.

<sup>9</sup> Conservation & Protection/Ecosystem Sciences/Strategic Planning director to Ecosystem Sciences directors, memo of July 22, 1993, "Priority Setting"; Environment Canada Project manager to Conservation & Protection/Ecosystem Sciences/Strategic Planning director, memo of July 26, 1993, "Priority Setting."

<sup>10</sup> CanTox program manager to Environment Canada Project coordinator, memo of July 23, 1993, "Attached please find..."; Environment Canada Project coordinator to Conference Board senior research associate, Conference Board research associate, CanTox program manager, CanTox toxicologist, and Rawson Academy scientist, memo of July 23, 1993, "See you at..."; Rawson Academy executive director to Environment Canada Project coordinator, memo of July 23, 1993, "Participation in the Priority Setting Workshop"; "Environmental Priority Setting Workshop: Monitors"; Environment Canada Project manager, overheads for National Priority Setting workshop of July 26-28, 1993, "Priority Setting Project"; "Priority Setting User Manual"; "Case Studies Work Book"; "Participant's List"; "Progress Report"; "Workshop Proceedings"; "Ranking Environmental Priorities: A Proposed Method," Draft, August 23, 1993, 6-8; agenda of Environmental Priority Workshop of July 26-28, 1993; "Setting Environmental Priorities"; CanTox program manager, "Environmental Priority Workshop July 26-28: Presentation Outline"; US Environmental Protection Agency chief, overheads for National Priority Setting Workshop of July 26-28, 1993, "EPA's Experience With Environmental Priority Setting: A Risk Assessment Perspective"; draft agenda of Environmental Priority Workshop of July 26-28, 1993; Draft 0; "Priority Setting Project Notes."

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<sup>16</sup> Environment Canada Project coordinator to CanTox program manager, memo of August 16, 1993, "Scoring Ecological Effects"; CanTox program manager to Environment Canada Project coordinator, letter of August 17, 1993, "I received your..."; Environment Canada Project coordinator to GlobalTox principal, memo of August 17, 1993, "Scoring Health Effects"; Environment Canada Project coordinator to GlobalTox principal, memo of August 17, 1993, "exp to a max..."; CanTox toxicologist to Environment Canada Project coordinator, letter of August 19, 1993, "Enclosed please find..."; GlobalTox principal to Environment Canada Project coordinator, urgent memo, "Original, disk, invoice..."; GlobalTox, "X. Scoring of Severity and Extent of Human Health Effects," 8; Industry environmental analyst to Environment Canada Project coordinator, Conservation & Protection/Environmental Protection/Regulatory Affairs economist, and Conference Board senior research associate, memo of August 17, 1993, "Socio-Economic Chapter draft..."; "Environment Canada - Priority Setting Exercise - Phase 1: Scoring and Ranking Socio-economic Consequences of an Environmental Issue. Report of the Working Group"; Environment Canada Project coordinator to Industry environmental analyst, Conservation & Protection/Environmental Protection/Regulatory Affairs economist, and Conference Board senior research associate, memo of August 19, 1993, "My comments"; Environment Canada Project coordinator, "Socioeconomic Criteria"; Industry environmental analyst to Environment Canada Project coordinator, memo of August 20, 1993, "[The Conference Board senior research associate] and I..."; Industry environmental analyst, "Environment

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<sup>17</sup> Conservation & Protection/Environmental Protection/Regulatory Affairs advisor, annotated agenda of sixth Advisory Committee on Environmental Protection meeting of September 8-9, 1993; Advisory Committee on Environmental Protection, agenda of sixth meeting of September 8-9, 1993; third Canadian Petroleum Products Institute senior director, draft overheads for sixth Advisory Committee on Environmental Protection meeting of September 9, 1993, "Environmental Priority Setting"; Canadian Petroleum Products Institute manager to second Petro-Canada senior manager and third Petro-Canada senior manager, Conservation & Protection/Environmental Protection director general, and Environmental Protection/Industrial Programs chief, memo of August 18, 1993, "Presentation for ACEP"; Conservation & Protection/Environmental Protection/Industrial Programs chief, notes of August 19, 1993, "She will advise..."; Resource Futures facilitator to Conservation & Protection/Ecosystem Sciences/Conservation senior analyst, memo of August 19, 1993, "Attached is a..."; Resource Futures facilitator to Environment Canada Project manager, memo of August 19, 1993, "Attached is a..."; Conservation & Protection/Ecosystem Sciences/Conservation senior analyst to Environment Canada Project manager, memo of August 19, 1993, "ACEP - Preparatory Meeting, Chateau Laurier, Gatineau Room, September 8, 1:00."

<sup>18</sup> Conservation & Protection/Environmental Protection/Industrial Programs chief to Environmental Protection director general.

<sup>19</sup> Conservation & Protection/Ecosystem Sciences/Conservation, "Environmental Issue Ranking," 47-49; Conservation & Protection/Ecosystem Sciences director general to Director General Steering Committee, memo of August 27, 1993, "Agenda and Documents for August 30, 1993 Meeting of Director Generals' Steering Committee," 1; Environment Canada Project manager, overheads for second Director General Steering Committee meeting of August 30, 1993, "Priority Setting Project"; Environment Canada Project manager to Core Director Working Group, memo of August 27, 1993, "Priority Setting Report and Director Generals Steering Committee," 1-2; Director General Steering Committee, minutes of second meeting of August 30, 1993; List of attendees of second Director General Steering Committee meeting of August 30, 1993; Director General Steering Committee, draft agenda of second meeting of August 30, 1993; Conservation & Protection/Ecosystem Sciences/Conservation senior analyst to Pembina Institute executive manager, letter of September 16, 1993, "Since [the Environment Canada Project manager] was...." 2; Natural Resources/Energy director to Conservation & Protection/Ecosystem Sciences director general, memo of August 30, 1993, "My apologies..."

<sup>20</sup> Environmental Priorities Working Group co-chairs to Colleague, letter of October 13, 1993, "You are invited..."; Environmental Priorities Working Group, "Environmental Priority Setting Methodology," August 1993; Conservation & Protection/Environmental Protection/Industrial Programs chief to third Canadian Petroleum Products Institute senior director, memo of September 1, 1993, "ACEP meeting"; Conservation & Protection/Environmental Protection/Industrial Programs chief, "Talking Points"; agenda of Conservation & Protection/Environmental Protection director general meeting of September 1, 1993.

<sup>21</sup> "ESED Members," August 1993; Conservation & Protection/Ecosystem Sciences/Conservation senior analyst to Environment Canada Project coordinator, memo, "ENGO Workshop - September 10"; Resource Futures facilitator to Environment Canada Project manager, memo of September 2, 1993, "Workshop on Ranking Environmental Issues"; "Environment Canada Workshop on Ranking Environmental Issues: September 10, 1993: Participants"; Environment Canada Project manager to Core Project Team,

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<sup>22</sup> Facilitator's Guide for Priority Setting: Discussion Groups"; Advisory Committee on Environmental Protection, action items of sixth meeting of September 8-9, 1993, 1-3; Advisory Committee on Environmental Protection, minutes of sixth meeting of September 8-9, 1993, 1, 4-6; Advisory Committee on Environmental Protection, agenda for sixth meeting of September 8-9, 1993; third Canadian Petroleum Products Institute senior director to Environmental Priorities Working Group, memo of September 9, 1993, "Please see attached..."; Conservation & Protection/Environmental Protection director general and third Canadian Petroleum Products Institute senior director, overheads for sixth Advisory Committee on Environmental Protection meeting of September 9-10, 1993, "Environmental Priority Setting"; Conservation & Protection/Environmental Protection director general and third Canadian Petroleum Products Institute senior director; notes of sixth Advisory Committee on Environmental Protection meeting of September 8-9, 1993; Advisory Committee on Environmental Protection, draft minutes of sixth meeting of September 8-9, 1993; Conservation & Protection/Environmental Protection/Regulatory Affairs advisor; Conservation & Protection/Ecosystem Sciences/Conservation senior analyst to Core Project Team, memo of September 17, 1993, "FYI & internal..."; Environment Canada Project manager to Conservation & Protection/Ecosystem Sciences director general, memo of September 11, 1993, "Priority Setting Exercise - ACEP and ENGO Workshop Results"; Environment Canada Project manager, notes of sixth Advisory Committee on Environmental Protection meeting of September 9-10, 1993; Conservation & Protection/Ecosystem Sciences director general to Director General Steering Committee, memo of September 27, 1993, "Feedback Received from ACEP and ENGOs on the Draft Priority Setting Methodology," 2; third Canadian Petroleum Products Institute senior director to Environmental Priorities Working Group.

## CHAPTER 6

### FORMULATION OF THE REVISED ENVIRONMENT CANADA PROJECT PLAN

In this chapter, I discuss the influence that government experts had in the *third* process of re-establishing the Environment Canada Project as a priority for Environment and other federal departments, and the *fifth* process of re-establishing it for Environment. The third process began in September 1993 and ended in October 1993 when the Director General Steering Committee approved Draft 2 of the Project report. And the fifth process began in October 1993 and ended in December 1993 when the Environmental Protection assistant deputy minister (formerly the Conservation & Protection assistant deputy minister) approved the revised Project plan (to develop the Environment Canada process).

During this three and a half month period, several other processes of determining environmental priorities occurred. The process of not establishing the Expanded Environment Canada-Canadian Petroleum Products Institute Project for Environment and other federal departments continued. I also discuss in this chapter the influence that government experts had in this process.

I show that the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis economist, Industry economist, and Health/Health Protection statistician seemed to have a minor influence on the decision by the Director General Steering Committee to re-establish the Environment Canada Project for Environment and other federal departments. The Agriculture economist and former Conservation & Protection/Policy economist seemed to have a major (deciding) influence. And other government experts seemed to have no influence. I suggest that the Ecosystem Risk Analysis and Industry economists, and statistician had only a minor influence because although they offered advice to the Committee, they were not asked for it by them. The Agriculture and Policy economists had a major influence because basically they were asked by the Committee and offered it to them. And other government experts had no influence because either they were not asked or did not offer. I also suggest that the minor influence of the Ecosystem Risk Analysis and Industry economists, and statistician did not make a significant difference to determining "good" environmental priorities because the Committee - including the Agriculture and Policy economists - knew more than they did about the science of deciding priorities (and the administration and policy of it). The major influence of the Agriculture and

Policy economists did not make a significant difference because the Committee knew as much as they did about the science. And the lack of influence by other government experts did not make a significant difference because the Committee knew as much as (or more than) they did about the science.

Finally, I show that government experts seemed to have no influence on the decision by the Environmental Protection assistant deputy minister to re-establish the Project for Environment. I suggest that they had no influence because either they were not asked for advice or did not offer it. I also suggest that their lack of influence did not make a significant difference because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities.

#### Director General Steering Committee Approval of the Report (Draft 2)

In this section, the third process of re-establishing the Environment Canada Project as a priority for Environment and other federal departments began and ended. Several other processes of determining environmental priorities intersected with this one, including establishing and re-establishing the Environment Canada, Expanded Environment Canada-Canadian Petroleum Products Institute, Environment Canada-Canadian Petroleum Products Institute, Canadian Petroleum Products Institute, and Legislative Framework on Pollution Prevention projects for the Environmental Law Centre, Environment, other federal departments, Health, the National Research Council, Canadian Environmental Protection Act/Federal Provincial Advisory Committee, and National Air Issues Coordinating Committee.

Specifically, environmental groups argued that they should not establish the Environment Canada Project, but advised the Core Project Team - including the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis socioeconomic risk analyst and ecological risk analyst - and the Industry environmental analyst to continue making it a priority. The Environmental Law Centre staff counsel did not establish it for the Centre. The Environment Canada Project manager questioned whether the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established. The Rawson Academy executive director argued to the Team (via the Ecosystem Risk Analysis senior advisor) that the Environment Canada Project should be re-established. The Team questioned whether the Environment Canada-Canadian Petroleum Products Institute and Expanded Environment Canada-

Canadian Petroleum Products Institute project should be established. The Canadian Petroleum Products Institute advised Environment and Health to re-establish the Canadian Petroleum Products Institute Project. The Conservation & Protection/Environmental Protection/Industrial Programs chief questioned whether the Environment Canada-Canadian Petroleum Products Institute Project should be established, and advised Environment and Health to re-establish the Canadian Petroleum Products Institute Project. The Canadian Labour Congress secretary-treasurer advised the Advisory Committee on Environmental Protection to re-establish the Environment Canada Project and Legislative Framework on Pollution Prevention Project (to develop a law-based process to determine federal government pollution priorities). The Conservation & Protection assistant deputy minister advised the National Research Council vice-president to establish the Environment Canada Project. Environment advised the Canadian Environmental Protection Act/Federal Provincial Advisory Committee to establish the Expanded Environment Canada-Canadian Petroleum Products Institute Project. And Environment advised the National Air Issues Coordinating Committee to establish it. Then Conservation & Protection re-established the Canadian Petroleum Products Institute Project for Environment.

The Ecosystem Sciences director general advised the Director General Steering Committee to re-establish the Environment Canada Project. And the Team - including the socioeconomic risk analyst, environmental analyst, and Health/Health Protection biostatistician - advised the Steering Committee (via the manager) to re-establish it (equal to establishing the Expanded Environment Canada-Canadian Petroleum Products Institute Project). Then the Steering Committee - including the Agriculture senior environmental analyst and former Conservation & Protection/Policy analyst - re-established it for Environment and other federal departments (develop the Environment Canada process), but questioned whether the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established.

During these processes of determining environmental priorities, several arguments emerged about whether a project itself should be a priority, who should be involved in deciding priorities more generally, how they should be involved, the scope of a process for determining priorities, and the process itself. First, the environmental groups argued to the Team - including the socioeconomic risk analyst and ecological risk analyst - and the Industry environmental analyst that environmental groups should not establish the Environment Canada Project as a priority because the Environment

Canada process should be further developed. Second, the executive director argued to the Team - including the socioeconomic risk analyst, environmental analyst, and biostatistician - and a second Canadian Environmental Network senior representative that it should be re-established because more time should be allocated to develop and use the process. Finally, the secretary-treasurer argued to the Advisory Committee that the process should be further developed before wider consultation, and it should not include a socioeconomic factor.

At this point, the environmental groups resolved the argument about themselves establishing the Environment Canada Project. They decided to determine this later. And the Team (including the socioeconomic risk analyst, environmental analyst, and biostatistician) resolved the arguments about re-establishing the Project because more time should be allocated to develop and use the Environment Canada process, further developing it before wider consultation, and it not including a socioeconomic factor. They advised the Project should be re-established because more time should be allocated to develop *not use* the process, did not recommend further developing it before wider consultation, and recommended it include a socioeconomic factor. The other arguments were not resolved during this period, September 1993 to October 1993.

#### Evidence

In early September 1993, the Environment Canada Project continued as Conservation & Protection proceeded to implement Phase 1 of the Project plan, led by Conservation & Protection/Ecosystem Sciences.

The International Joint Commission senior environmental advisor sent his comments on Draft 1 of the Environment Canada Project report (discussed below).<sup>1</sup>

*The Environment Canada and Canadian Petroleum Products Institute projects.* A joint Canadian Petroleum Products Institute-Environment workshop was being scheduled for late October.<sup>2</sup>

*The Environment Canada Project.* The Environmental Group Workshop was held the day after the Advisory Committee on Environmental Protection meeting. **At the Workshop, environmental groups argued that they should not establish the Environment Canada Project as a priority because the Environment Canada**

**process should be further developed, as shown below by excerpts from the Workshop report, an Environment Canada Project coordinator's memo, and an Environment Canada Project manager's memo. Also shown, the environmental groups resolved the argument. They decided to determine this later. The environmental groups advised the Core Project Team to continue making the Project a priority. The Environmental Law Centre staff counsel did not establish it for the Centre.**

The one day Workshop for Ranking Environmental Issues was held to test and refine Environment's proposed method for ranking environmental issues. Of the 16 environmental group senior representatives that by now had been invited, ten confirmed their attendance and seven "from across Canada" participated. Two were Advisory Committee members (Environmental Law Centre and Canadian Nature Federation), and one was a member of the Petroleum Products Industry Task Force and Environmental Priorities Working Group (Society to Overcome Pollution). An eighth, a second Canadian Environmental Network senior representative, did not attend in the afternoon. Eight Environment and Industry representatives, including the Team, first Atmospheric Environment director, Industry environmental analyst, and Rawson Academy executive director, attended as resources "to present the draft methodology and respond to questions about the evolution of the methodology and plans for ongoing development." Conservation & Protection/Ecosystem Sciences/Conservation contracted the executive director.

At the workshop, environmental group representatives expressed concern about participating for the following reasons:

- They perceived that the paradigm and framework in which the methodology is being developed do not encompass what is currently known about sustainability, ultimate causes of environmental issues and global economics.
- The goal appears to be "triage" and not prevention.
- The potential applications to decision-making, and resulting consequences, of this methodology are not well enough understood.

"Triage" meant "deal with immediate and serious issues" and "prevention" meant "address emerging issues at the earliest possible stages."

Participants volunteered to address these concerns by discussing either the paradigm and context of the methodology (Group 1) or testing the methodology by applying the Ultraviolet-B Radiation case study to the Comparative Risk Ranking method (Group 2).



Group 1 recommended:

- Establish prevention as the goal and assess what impact this will have on the methodology (eg. definition and identification of issues, scoring, order in which criteria are listed)
- Expand the scope of concerns to include ultimate causes
- Shift the paradigm of the economic factor from growth as reflected in the [gross national product], to a paradigm that reflects "limits to growth."

And Group 2 recommended:

- The... Network... should undertake, in collaboration with Environment..., to express concerns of the [environmental group] community and to consider opportunities for participation
- Environment... to prepare a strategy to obtain further input from [environmental groups] into the development of the methodology
- Focus the methodology on emerging issues.
- Identify, within the methodology, the objectives and assumptions for each of the users
- Require users to identify a rationale for scoring so the results can be tracked by others.
- Establish independent multi-stakeholder panels (government, industry, [environmental groups] and subject experts) to score the issues. Separate this process from government budgetary processes....
- Ensure sufficient resources to complete the process for developing a methodology.

Before the group work, some environmental groups asked that names be attached to comments in the workshop report and participants be sent a draft for comment before broader circulation.

The manager then presented the Environment Canada process from a conceptual perspective, and coordinator presented it by applying a case study on smog. An outline of their presentation follows.

The purpose of environmental priority setting is to allocate resources and effort in a manner which is proportionate to the potential reduction or risk. The goal of this project is to development a transparent method...

....There is need to integrate existing priority setting activities within a common framework....

Far more issues present themselves than can be dealt with effectively in any time period so that it is essential to determine the significance of the issues and its relevance to the departmental mandate before proceeding further.... ...There is a need to focus data collection efforts and to avoid collecting unnecessary information.... ...A systematic set of risk-based indicators of sustainability to characterize any issue will highlight gaps in knowledge....

....Scoring summarizes the state of knowledge about the range of effects and evolution of an issue....

The priority assigned to an issue must be scientifically defensible....

...The ranking process should contribute to the justification for subsequent resource allocation decisions....

The resulting priority setting process does not aim to replace mandated decision-making processes nor supplant scientifically valid screening and assessment protocols. It is meant to bridge the gap between the initial onset of an issue and the time when a full scale scientific assessment of an issue has been made.... ...It could become an important part of the planning, accountability and reporting process with time. The iterative process could lead to visible but defensible shifts in the focus of [Environment] activities....

...Low scoring issues require scientific research to reduce the uncertainties and unknowns involved. In-between issues are more difficult to call.... What is lacking at this time, is a process for incorporating multi-stakeholder... decision-making into the priority setting processes.

...Input and recommendations regarding all aspects of the... methodology... is sought. [Environmental groups] are invited to take an ongoing part in the testing and revising of the methodology and they will be kept informed of opportunities to do so.

Participants focussed on four areas. Feedback regarding the need for a new paradigm in which to continue to develop the methodology included:

Referring to a working paper, "Environmentally Sustainable Economic Development: Building on Brundtland," by Robert Goodland, Herman Daly and Salah El Serafy, [the Alliance for Public Wildlife senior representative] strongly promoted the need for a fundamental shift in the paradigm on which economics is developed in the methodology....

[The Ecology Action Centre senior representative] spoke on behalf of many participants regarding the use of "ecosystem integrity" as the sole factor for priority setting and the relegation of health and socio-economics factors to that of subsets within it. He felt that this would eliminate the implicit weighting of anthropogenic concerns reflected in the current equal status of the three factors....

[The Sierra Club senior representative] described the methodology as reductionist. She recommended an approach that addressed zero discharge, life cycle accounting and life cycle responsibility... She... promoted the need for a methodology that would encourage action in the absence of crisis. ...It should take an ecosystem approach. Another comment was made regarding the replacement of inherently reactive methods, such as environmental impact assessment, with ecological-based planning.

...[Group 1] discussed the possibility of parallel methodologies, one for "triage"... and one for prevention.

Feedback regarding the goal of setting priorities included:

...Participants were in agreement that the goal of the methodology should be one of prevention and not triage for budgetary purposes....

[The staff counsel] saw the methodology as a valuable process for bringing underlying assumptions to the surface in government decision-making rather than identifying a list of high, medium and low ranking issues. The quality and quantity of data on any issue and flags that are raised are more important. He would not buy into the list and does not expect it to become the basis for decision-making.

Feedback regarding the application and impact of the methodology included:

There was general concern that the methodology itself and the ranking of environmental issues would be misused. [The Manitoba Environmentalists senior representative] said that the implication of the methodology is where to remove effort... There are fears about a ranking system that creates "tops and bottoms" and that those on the bottom will be dropped. He also expressed concern with how prioritization would affect existing processes, beside the budget, such as regulation, environmental assessment and prosecution.

There were a number of questions about the variety of users of this methodology.... [The executive director] recommended that the methodology explain who the stakeholders are at each stage and what their roles are....

All participants wanted to know how the process and its results would be integrated into existing decision-making procedures. ...[The Manitoba Environmentalists senior representative] stated that although there is current agreement not to add the scores of each factor, he suggested that, in practice, this would be done. He suggested that ranking implies knowledge, and we do not have a great deal of knowledge on many of the current concerns. He wanted to make sure that the reader would not be misled when serious non-quantifiable indicators are overlooked in the presence of less serious quantifiable ones.

[The Society senior representative] suggested that this methodology is being developed for issue management, not for long-term decision-making. He also said that this methodology could not be used for a current concern because, in most cases, the data is not available. [The executive director] agreed that this is a short-term planning tool and that long-range plans have to deal with ecosystem integrity. He added that this methodology could pre-empt some problems but could not address the economic system. [The Manitoba Environmentalists representative]... recommended that a schedule for updating the status of issues and concerns be developed.

And feedback regarding considerations for involvement in the ongoing development of the methodology included:

A number of participants suggested that the development of this priority setting process be done gradually, not only to build comfort but to allow for what could be significant changes in the focus and application of the methodology.

Group 2 recommended that [the Network], in collaboration with [Environment], undertake to discuss [environmental group] concerns... [The executive director] agreed to work with [the second Network senior representative] to facilitate communication among [environmental groups] on this issue.

It may be assumed that, should independent multi-stakeholder panels be established to apply concerns to a revised methodology, representatives from the [environmental group] community would participate....

[The manager] outlined the next steps in the development... and invited [environmental groups] to take part.... He will send copies of Draft 2 to all participants.... He announced that there is a joint [Canadian Petroleum Products Institute-Environment] workshop being scheduled... and that it may be possible to have representation from [environmental groups] at that time. He also agreed to

facilitate communication with and among [environmental groups] to develop the methodology.

In summary:

There are strong recommendations to realign the methodology within a more explicit sustainability-ecosystem integrity paradigm, with a goal of prevention, a focus on emerging issues, and an application to long-term planning.

[The environmental groups] expressed interest in collaborating with government to discuss ongoing involvement with the process.

As shown above, one environmental group senior representative questioned if environmental impact assessors (vs ecological planners) should help decide Environment's priorities.

After the workshop, the Resource Futures facilitator drafted a four-page report on the workshop, and sent it and an annex for the Environment working team of detailed comments specific to the methodology (not attached to the report) to the senior advisor and coordinator for comments. The report did not include the outline of the manager and coordinator's presentation. The facilitator suggested sending additional material such as the Canadian Petroleum Products Institute Project report when the draft report was sent to participants for comments.<sup>3</sup>

By the next day, Conservation & Protection/Ecosystem Sciences/Conservation revised the draft detailed Environment Canada Project plan, i.e., the next steps. They included: the Environment Canada Project manager asking the Conservation senior analyst to collaborate with the Resource Futures facilitator to draft a short note from the Ecosystem Sciences director general to the Director General Steering Committee on the Advisory Committee on Environmental Protection meeting and Environmental Group Workshop as soon as possible, seeking the help of issue managers in Environment to help develop more case studies, having Draft 2 of the Project report and additional case studies available by early October, and continuing to work with the Canadian Petroleum Products Institute to confirm the common workshop dates.

**In mid-September, the manager updated the director general on the Advisory Committee meeting, Environmental Group Workshop, and Environment Canada Project, and questioned whether the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established as a priority, as shown below by excerpts from a manager's memo.**

Regarding the Advisory Committee meeting, the manager wrote the director general:

...[The Committee] is very supportive of the progress we have made... and are satisfied that our environmental issue ranking scheme fits like a glove with the [Canadian Petroleum Products Institute] methodology. [The Institute] are very supportive and are committed to help us, as are the other industrial members of [the Committee].

While the [environmental groups] are supportive in principle and are intrigued with the concept, they are not willing to make a commitment to any priority setting methodology... because... if they announce or even commit to a buy-in before they see what the methodology would do to their favourite (or sole) agenda (environmental issue of concern to them), they could find that the methodology... suggests that their agenda... was of lesser or no significance, effectively relegating them to a trivial state. Because of this (and they have been frank about this) they are unwilling to be totally supportive at this time, or even totally committed to pursue the development of such a methodology. On the other hand, they do accept and have agreed to help us shape it.

[The Advisory Committee] is committing its members to pursue the prospect of a priority setting methodology which could be used in general and in the longer term, by taking the [Canadian Petroleum Products Institute] model as a base, and

- substituting [Environment] steps 1 to 3 for [the Institute's] steps 1 and 2;
- expanding [the Institute's] step 3 to cover not just pollutants contributing to issues but... all activities... (i.e. making it multi-sectoral...),
- running steps 4, 5, and 6 (which are sectorally prescribed and unique) as a series of parallel steps 4, 5 and 6 (one for each sector that would be identified for each activity...), and
- expanding [Canadian Petroleum Products Institute] step 7, as had been planned into a cross-sectoral, multi-issue action analysis.

The concept is clear, the techniques are known, but the data acquisition to make it work is the problem.

...The first step recommended by [the Advisory Committee] is that [Environment] and [the Institute] jointly host a national workshop... It was presumed that the majority of the invitees to either, would be the same, and we should collaborate.

A tentative date suggested for the Workshop was late October but I think early to mid November would be the best... to ensure that we... have a good draft methodology in place with adequate case studies developed, and not be rushed, as we have been so far. I... urge you to use your influence on this point, although I think [the Conservation & Protection/Environmental Protection director general] would agree.

[The Advisory Committee] is also urging [the Canadian Council of Ministers of the Environment] to come on board... [The Environmental Protection director general] is expected to apprise [the Council/Environmental Protection Committee] of this and solicit the provinces to join in the developmental process.

(The Institute was not an Advisory Committee member.) The Environmental Protection director general represented the federal government on the Environmental Protection Committee.

Regarding the Environmental Group Workshop, the manager wrote the Ecosystem Sciences director general:

We had nine [environmental groups] with us..., and had some interesting times to start out with, ranging from cautious support, doubt about its use (budget cutting rather than budget management) to statements of a revolutionary nature - e.g. that environmental issues will only be handled when we have controlled population, changed human psyche (greed and selfishness) and thrown out all our current economic principles and goals. This latter view was expressed repeatedly and eventually ticked off everyone in the room including the other [environmental groups]!

...This time was needed to bring them into the dialogue, open up the topic, and get some degree of comfort that we were not autocratic ogres! After a couple of hours, we got back on to schedule... Useful comments were received that will be reflected in Draft 2....

They have committed to help us, after they get to see draft 2... (in which we... presumably will have shown good faith by reflecting their concerns over draft 1).

The same day, the Pembina Institute executive manager wrote the manager:

...The Institute has worked closely with other sectors in... developing environmental priority setting strategies. We intend to continue making a contribution to this important work.... Note also that I have not received any follow-up information on that workshop, as I requested....

...Please provide me with the results of that meeting... and let me know about any next steps to be taken by the Environment... Priority Setting Project.

The senior analyst replied to the executive manager, on behalf of the manager who was going to be away. She sent him Draft 1 of the Environment Canada Project report, and wrote him:

....I assure you that this workshop is not 'the beginning and the end' of our consultations with the [environmental group] community. [Environmental groups] are represented on the Advisory Committee... ...Some [environmental groups] have been involved in the priority setting process being developed by the Canadian Chemical Producers Institute [sic].... A [Environment-Institute] workshop will be held in late fall or early winter and we will suggest that [environmental groups] be invited to participate. ...We are prepared to work with the [environmental group] community through [the Network].

A few days later, the coordinator sent his three pages of comments on the draft Environmental Group Workshop report, including an outline of his presentation, to the senior analyst (and copied the first Atmospheric Environment director, International Joint Commission senior environmental advisor, and facilitator). He wrote her:

Our (the government side's) participation in this workshop must be reflected in the... minutes.

The [environmental groups'] participation... was to provide input not to buy in to the methodology.

Opinions and points of view must not be stated as fact! ...Most of the [environmental groups'] outbursts of righteous indignation occurred prior to any of the presentations or discussion of the issues. ...I do not want her to imply that the points of view expressed are necessarily in opposition to our own.

...Sustainability-ecosystem integrity has already been accepted as the paradigm upon which priority setting should be based and the only challenge is to make it so!

The method can be used for both current (residual) and prevention of future risks...

...The goal of the project is to develop a method for setting priorities not a list of priorities....

I object to the use of the term triage because it implies that we are going to dump significant issues....

....I think that what Group 2 was trying to say is that... more emphasis should be placed on new and emerging issues. A public panel and multistakeholder process would be the most suitable means for shaping the public agenda. That is not to say that our methodology would not also play a role in internal strategic planning and budgetary processes.

The outline was added to the draft report. The phrase "they perceived that" was added to the executive summary. No other significant changes were made.

The facilitator sent the six-page revised draft report to the Environmental Group Workshop participants for comment. No comments were sent. At the end of September, she sent the final report and additional material (not the Canadian Petroleum Products Institute Project report) to participants and three environmental group senior representatives "who were unable to attend and who expressed an interest in being kept informed" (including the executive manager).

In mid-September, the manager thanked a United States Environmental Protection Agency director for the Agency chief's presentation and participation at the National Workshop. He wrote him, "We are still in an early and formative stage of developing a suitable approach for Canada but will keep you advised of our progress."<sup>4</sup>

*The Environment Canada and Canadian Petroleum Products Institute projects.* A short presentation on the "priority setting project" was made to Canadian Council of Ministers of the Environment/Environmental Protection Committee. Documents describing Environment's draft Environmental Issue Definition and Ranking Methodology were tabled at the meeting but time did not permit review and discussion. The provinces "expressed an interest" in the proposed approaches and wished to be updated on future developments.<sup>5</sup>

*The Environment Canada Project.* The Environment Canada Project coordinator sent a draft report on the 1993-94 Conservation & Protection/Ecosystem Sciences/Conservation Project Planning & Review Project to the Environment Canada Project manager and wrote him:

...The Priority Setting Project was used... not only for project related expenditures but also for bulk commitments. Before we undertook the [Environmental Group] workshop... my free balance would have been about... You undertook to obtain whatever supplementary funds were necessary to cover this workshop and subsequent undertakings. I can not meet my current commitments and am asking you to provide immediately an additional... to cover the cost of the Workshop.

Conservation & Protection established the Project Planning & Review Project as a priority for Environment by now. The draft report included the Environment Ecosystem Risk Exposure Methodology & Framework Project (the Environment Canada Project). The deliverables and milestones were "publish first draft of a [Environment] Priority Setting Guideline" by November 1993, and "complete a spatial ecosystem risk exposure framework and regional socio-economic indicators, for incorporation into second draft" by March 1994. The planned financial resources total was \$113,500 (\$73,100 to date); and planned human resources total was 135 person weeks (102 to date). The progress to date was, "Additional funds are required to meet current and project commitments."

The report included several other projects established as priorities for Environment, and their progress, including the Contribution to Acid Rain Progress Report - start must be postponed because "Priority Setting Project/Nitro-Assessment" must be completed before January, Preliminary Assessment of Nitrogen Deposition - no progress from July to September due to time devoted to "Priority Setting," and UNB Sulphate/Nitrate Loading Model - on target.

From early to mid-September, twelve reviewers sent their comments on Draft 1 of the Environment Canada Project report, as shown on pages 266 to 276. Three fourths of the reviewers were from Environment and other federal departments (Heritage/Parks, formerly Environment/Parks). The rest were from an industry association (Mining), two consulting companies (Rawson Academy, CanTox), and a university (Simon Fraser). The Conservation/Ecosystem Risk Analysis senior advisor compiled the comments, and sent them and his comments on the comments to the Core Project Team for review (seven pages). His comments on the comments are in italics. The manager's comments on the comments, sent to the senior advisor and written on the memos and letters, are in bold italics.



In early September, before the Advisory Committee on Environmental Protection meeting, the second Mining Association senior director (a National Workshop participant) wrote the manager, and the senior advisor commented:

Below is my immediate reaction to the report. I may have additional comments later, particularly from some of my members....

...I am very impressed at how the package was pulled together. ...I would encourage you to have it edited before public release. The language of the report is technical and sophisticated and may be obscure to the lay person who has not participated in all the discussion. In this vein, the final version should focus on explaining what it recommends, rather than recording the historical development of thinking on the issue. Below are some further, minor, comments:

- I am uncomfortable with the statement "The criteria were designed to be simple enough to allow 'non experts' to understand them and to require little technical information to be effectively used..." Lack of depth in the analysis and a poor information base will lead to nonsense ranking. It would be less ambiguous to say that the methodology relies on aggregate or summary technical information, not scientific detail. *[agree - we should re-phrase]*
- Related to this... is my concern that scientific uncertainty and controversy are still insufficiently recognized by the methodology. In particular, I am concerned that a natural propensity to use "worst case" scenarios will override the substance of many issues. *[consensus of mixed team]*
- To reiterate my statements at the workshop, I am uncomfortable with weighting the three factors (health, ecosystem, socio-economic). Quantification should clarify rather than obscure the substance of the analysis. A simple numerical score is open to abuse. *[will probably not be weighting]*
- The explanation of incidence and exposure... is not clear, and not in line with discussions at the workshop. I find it difficult to envisage how population exposed could be linked to levels of severity. *[yes - but this is an ideal]* It appears clear to ask what proportion of the population is likely to suffer a certain severity of effect. *[ok]*
- I do not agree with the proposal to separate cancer from non-cancer outcomes. This would unnecessarily complicate what is meant to be a generic, broad-brush methodology. As well, I could imagine a good case being made... for further separation of health effects. ...Our society puts particular emphasis on impacts on children... *[yes - but could flag?]*
- Table 9... [the ecological factor scores for the case studies] appears to have some errors. ...Why is global extent given a score of 4? Is the severity (not extent) of ozone depletion effect on ecosystems really much greater than that of contaminated sites? *[check]*
- The case studies should receive additional attention, since they will be a key determinant in how people will receive the report.

The Conservation & Protection/Environmental Protection/Pollution Prevention senior engineering advisor (a Project Team member and National Workshop participant) wrote the manager:

I want to commend the team for putting the draft together. Given the range of options for several of the elements, it was a daunting task. My comments are primarily editorial....

...A comment on who might do this [the scanning and scoping] and how frequently is needed....

....Scoring for "not applicable" and "unknown" of zero will reject an issue....

...For scoring health, will there be another work group to recommend a method? Especially how to combine various elements of severity-extent....

...I see this methodology as a means of ranking issues, not for priority-setting. This was also noted by workshop participants. This may be a first step towards priority-setting.

...Testing this methodology on [Accelerated Reduction/Elimination of Toxics] would test its ability to rank individual substances on the basis of relative risk. Is this an appropriate test for a system designed to rank issues?...

Again, kudos to the group that pulled this together.

The manager replied to the senior engineering advisor, "There is still a lot to be done over the next 3 weeks - Draft 2 is due all too soon."

After the Advisory Committee on Environmental Protection meeting, the International Joint Commission senior environmental advisor (a Project Team member and National Workshop participant) wrote the manager and coordinator, and the senior advisor commented:

The following [statements from Draft 1 and] comments are a mixture of editorial trivia and some more fundamental concerns.

- [The federal partners include the following departments... The International Joint Commission has been an active participant in the developmental process] This makes me uncomfortable because I don't speak for the Commission and I doubt that the others speak for their departments. I would argue that we were all working in a personal and professional capacity. *[Do we agree with this interpretation?]*
- ...We need to decide whether we are opting for a stress-exposure-response... or a stress-exposure-response-adapt... paradigm. I am more convinced than ever that we should be adopting a [stress-exposure-response-adapt] paradigm.... *[It is causing others confusion as well]*
- [For both government and industry the financial requirements and the resources to address all environmental issues are prohibitive in light of current fiscal restraints and economic conditions] This bothers me because it is self evident that no government could ever address all environmental issues let alone address, adequately, all the important ones....
- [Informed and responsible decision-making requires reliable and accurate information and must be based on good science.] I don't think this is the way to emphasize the need for good science. I would feel more comfortable if you replaced "must ... science" with "a holistic understanding of the nature, extent and significance of the issue being addressed"....
- [It is the role of science and economics to measure the degree to which these characteristics have been impaired, damaged or lost.] This... raises a question. Is

economics a science?... *[I don't want to touch this one although I would agree it is but still very much in its descriptive phase.]*

- [Two representations of the paradigm were used during the workshop, the first the schematic conceptual diagram of...] I am flattered but uncomfortable with my name being used here.
- [The section on scoring] I confess to having a lot of trouble with the scoring system(s) and I feel that there is a real need to develop the conceptual linkages between sustainable development or sustainability and the screening and scoring criteria. For example, "recovery time" seems to me to be absolutely critical... yet we don't give it a score.

At best, I think our scoring system will be arbitrary but it shouldn't be capricious and the more we can link it, explicitly, to sustainability... the more it will be seen as a coherent package.

Even after two readings..., I found it difficult to follow. The treatment of "recovery time" clearly needs another look....

I would argue that one of the most important tasks yet to be done is to develop the linkages between the criteria to be scored and sustainability. Until that is made explicit we won't have any way of really assessing whether or not the package holds together.

All in all, this is a very commendable effort, but... I think... a lot still remains to be done to make a compelling case that can be sold to both the managers and the experts.

In mid-September, after the Environmental Group Workshop, the Ecosystem Sciences/Hydrology Research director wrote the manager (and copied the Ecosystem Sciences director general), and the manager commented:

I always have trouble with priority setting exercises in the abstract. And this is no exception.

Priority signifies precedence which in turn implies choices of alternatives and therefore a set of criteria... which are used to decide. My feeling is we'd be better to use terms like Programme Direction Choices and deal with priorities as action items within a broader framework.

Thus we have... at [Hydrology Research] a hierarchy.

[Ecosystem Sciences]: Directions - Do Hydrological Science at Saskatoon

[Hydrology Research]: Direction - Ecosystems approach

Direction - Hydrological Cycle

Direction - Groundwater as essential element of cycle

Priorities - Abbotsford etc.

As for setting priorities, one must look to the goals of the organisation to see what can be usefully achieved. For example, if we were to use the Vision Statement of [Environment], recently reenumerated by the [deputy minister], one could test projects against statements as [sic]:

- How well will the project help people to make responsible decisions about the environment?
- How well will this project assist or enable the implementation of sustainable development concepts?

Priorities do not become a factor until action choices... are required. It may also be deduced... that setting priorities across various directions is not obviously feasible.

Concepts of stressors, exposure and response... could be used to amplify the evaluation of projects against the Vision Statement. Technically however, it is not always easy to establish that a perceived stressor, will have an observable effect... or even if an observed effect has a determinable cause...

Other concepts to test proposals can be formulated... For example, does the project contribute to a Green Plan goal, ...to a larger goal (e.g. [the Canadian Environmental Protection Act's] list of chemicals) etc?

When making choices for R&D work, a strong influence is the potential that the work will provide future benefits... If no potential benefits to the goal of better information or capabilities are identified, then it's no go. Research is focused on... future knowledge which will be needed rather than on current issues. Urgent issues... can be addressed by researchers who are able to apply up-to-date knowledge and expertise to the problems. *[to file only]*<sup>6</sup>

The Heritage ecosystem manager (a Project Team member and National Workshop participant) wrote the manager (and copied the Heritage director and forest ecologist), and the senior advisor and manager commented:

...The opportunity of participation... gave me a firsthand appreciation of the considerable effort involved. The report is a well-documented summation of the numerous working sessions.

The [section on] Scope and Approach states... that the methodology is designed for pollution related issues but that the more holistic concern for environmental sustainability is the ultimate target of this ongoing developmental exercise. To this end the methodology should... give higher... priority to concerns that encourage sustainability and the ecological basis of economic activity, that is to say, that link the environment and the economy in a positive manner. This seems a bit unclear...

The [section on] Goals/Principles... does refer to the... linkage and makes a passing, but unequivocal, reference to the overarching environmental concern, namely, "greater competition for shrinking resources." ...The priority to get population and consumption under control and down to sustainable levels needs to be spelled out. This report needs to put the environmental crisis in an historical context and to provide an evaluation of the current situation and anticipated trends. The priority setting exercise... lacks an holistic perspective on the environment and human activity and also lacks the promise of a strategic approach to dealing with the unsustainable mining of our one-and-only natural resource.

...I would like to provide a small, nit-picking, partisan example... Table 9... compares several environmental issues... Although I may be taking this example somewhat out of context, wilderness and its exploitation is seen as a minor, local concern because "parks are local in nature or represent 1-10% of Canadian ecosystems." The very rarity of relatively undisturbed natural ecosystems is, however, cause for the greatest alarm. Human-dominated ecosystems have no demonstrable longterm sustainability... Loss of natural... ecosystems on a global scale is the environmental concern. *[Perhaps we could flag the rare undominated, natural ecosystems as a special case.]*

...I feel that the participants in general and your group in particular have made a serious first cut at an enormous and virtually intractable problem and I look forward to subsequent iterations. **[to... incorporate]**

The first Ecosystem Sciences/Eco-Health environmental quality guidelines specialist (a Project Team member and National Workshop participant) wrote the senior advisor, and the senior advisor commented:

I realize... a number of my concerns will be addressed by further editing.

The discussion on ecosystems and ecosystem integrity in [the section on methodology] is not accurate. I suggest including something along the following lines... [of a definition from The State of Canada's Environment report].

The stress-exposure-response model needs clarification.... Since the... framework is key to the priority setting method, care must be given to explain precisely what it is and how it is used.

[The section on scanning and scoping] draws heavily on the work done by the Rawson Academy... yet there is no mention... that there is a document available... The description of the method must provide a complete discussion on how issues are scanned and, in particular, how they are obtained in the first place. *[this section depends on the Cantox document, the... Academy [document] and some original development at [Conservation & Protection] - all faced similar problems and came up with similar solutions but I agree better discussion is indicated and care to avoid criticism of plagiarism is good advice.]*

Overall, the... document is lacking in clarity. The logic tends to break down in places making it difficult of the reader to follow, particularly the uninitiated reader. For a new undertaking it is vital that every step be articulated plainly and succinctly.

The Ecosystem Sciences/Strategic Planning chief (a National Workshop participant) wrote the manager, and the manager commented:

I offer the following points as possible problems with the methodology...:

- Most of the scoring/weighting criteria would require a scenario to exist wherein the pollution problem was already palpably affecting our natural environment or the health and well-being of the Canadian (or possibly global) population... Surely that is far too late for the government to be attending to the issue. Will the scoring/weighting criteria stand up if the only data we have available is speculative?
- In... Table 9, ...[ultraviolet-B] radiation effects is scored as an eight-times greater issue than the ecological and human health effects of toxic contamination from contaminated sites. Yet we see the federal government spending millions on site cleanup, research etc. Would the scoring for [ultraviolet-B] then mean that governments should be spending eight times as much on that problem as on contaminated sites?

...Hydroelectric development is scored as 16, half as significant as [ultraviolet-B]... and yet hydroelectric generation is a relatively clean source of power... and might in fact contribute more to achieving sustainable development than other sources... The habitat destruction associated with the northern Quebec developments, for example, is more a socio-political issue than an environmental

one, some would argue, and has more to do with our notions of human rights than it has with strictly ecological severity. Therefore... is not the scoring subjective, depending on your point of view?

- The selection of environmental issues may also be significantly subjective...  
..."Access to wilderness" is listed as an... issue, and hunting and fishing are referenced as... stressors. However, ...a sizeable population... would consider loss of quality hunting and fishing opportunities to be one of the biggest environmental calamities of our time. The... associated... industries must order in the billions of dollars in North America, and must surely be a factor in addressing the relative importance of the issue. Therefore... would the selection of issues be objective, or would the selection differ based on who we asked? *[to... incorporate]*

**The Rawson Academy executive director (an Environmental Group Workshop participant) sent his comments (three pages plus attachments) to the senior advisor (copied to the coordinator and second Canadian Environmental Network senior representative), and argued that the Environment Canada Project should be re-established as a priority because more time should be allocated to develop and use the Environment Canada process, as shown below.**

The executive director wrote the senior advisor, and the senior advisor commented:

As the document is presented to new audiences, the comments the environmentalists made about setting context and... how the scan would address issues of ultimate cause will be increasingly important.... Currently, there is no context... The section written by [the first Atmospheric Environment director] certainly helps to set that context. However, I... suggest two additions. ...sections of the... Academy's... report... ...a section outlining why Environment... has embarked on a priority setting exercise. Integrating... these... into a single section... would help increase the acceptability of the method. *[Do we need a context section?]*

...The document does not clearly establish inputs at the scanning end... nor does it establish involvement in the... priority setting process. It seems to me... the outputs at each stage should be objectively questioned. ...Defining a role for external groups (eg. [the Advisory Committee on Environmental Protection]) in this review would improve its objectivity and would enhance its political acceptability. However, ...critical to the public acceptance of the method is a discussion of stakeholder involvement.... In particular, as it now reads... Environment... managers will simply fill in the blanks... and may in fact use the priority setting method as a way to promote their own projects and priorities. My own preference would be that adopted by the Academy in its scanning exercise; ...a survey approach which is heavily biased towards those in the Canadian population with sensitivity to environmental change. These would include environmental scientists (within and outside of all governments), and environmentalists. I have attached a copy of the revised survey we developed for... our scan... I have also defined what I feel are necessary points of objective intervention (see attachment...).

...The document appears to place human health on a level playing field with maintaining ecosystem integrity. I share some of the other perspectives around the table that ecosystem integrity is of highest importance. There is increasingly literature... to support this view. I have enclosed an article on "Environmental Change and Violent Conflict".... ...I think that ecosystem integrity should rank higher some how and... it should be presented first...

....The priorities appear to be human health then socioeconomic health then ecosystem integrity. These should be presented in reverse order to send a strong signal that ecosystem health is of paramount importance.

I don't like the terms used in the document and... find Figure 2 [the activity-stress-exposure-response-adapt model] very confusing, for example, human activities are stresses... To my mind, there is a three step causal chain that starts with pressure on ecosystems, which results in exposure which in turn results in a response.... Elaborating the complexity of any specific environmental problem involves applying science to elaborate the causal links. [The senior environmental advisor] and I have spoken about this. I have presented this view below...

...I have had some difficulty with the questions or steps in the method. ...There is some repetition and poor ordering.... I have presented a sample of how I would do this below (attachment...).

I would be willing to revise the entire method if someone was interested.

As mentioned at the workshop, I think that the timeline for development and use of the method is too tight. I... highly recommend that it be adjusted and lengthened regardless of [Environment's] need to realign its budget.

I think there should be a clear discussion of the role of judgement in the method and how it will be applied. For example, in terms of using scientific information, ...a weight of evidence approach should be adopted. A discussion of this will help to elaborate the role of values in the method.

I would like to see a comprehensive list of potential management actions or decisions taken as a result of the priority setting exercise. This would also help to set appropriate expectations about how the method will be used to promote sustainable decision-making in government.

I am quite concerned about the use of absolute numbers and... lean towards characterization of outputs (or issues) as high, medium or low priority... Without this, someone will inevitably fund research on an issue with a ranking of 245 but cut off funding of issues 244 or lower. I don't think the method is that accurate.

The CanTox program manager (a National Workshop participant) sent her and the CanTox toxicologist's (a National Workshop participant and former Core Project Team member) comments to the coordinator. They wrote him:

We found the report to be very comprehensive and it incorporated all the major comments and recommendations made at the workshop. We feel this version is an excellent working document and should be used for an in-depth testing session to score and rank a number of issues.

We felt that a few modifications would improve the report....:

- Although the use of geometric scales for... scoring... both severity and extent provides equivalence between issues, there is a danger that the resolution of the issues may be compromised and all the issues will receive similar scores. We recommend that a comparative testing of scoring severity and extent using

geometric scales only versus a combination of geometric and arithmetic scales should be completed on a list of issues to determine which scoring method generates better resolution....

- The use of weighting factors to determine the relative importance of the three categories (health, ecological and socioeconomic) is still unclear. We feel that the use of weighting factors would create an inherent bias in the scoring system and may incorrectly eliminate important environmental issues, especially in the initial ranking of issues. ... The total score and the scores of each of the three categories should be listed to allow the user to see the individual components that result in the final score.

Later, if further resolution is necessary, the scorer can make a value judgement on the relative importance of each category but this should be completed only after an initial ranking has been completed to obtain a manageable number of issues.... This value judgement could incorporate the use of weighting factors....

- The scoring of extent in the area of human health seems to be a bit arbitrary.... The use of incidence would appear to be a more satisfactory way... Consideration may also be given to scoring... in the same manner as ecological...
- With respect to dealing with multiple health effects... we feel that... averaging the scores, to obtain a composite score would be the best unbiased alternative. Please note that... [the United States Environmental Protection Agency] in their "Unfinished Business" report scored cancer and non-cancer effects separately.
- We recommend that the extent factor in the ecological section be scored using the global, national, regional and local criteria rather than percent of population affected. We feel that this qualitative approach provides a more realistic representation... and is easier for people to understand.
- With respect to the Issue Profile... the issue definition still does not seem clear. Issues should be defined in terms of the valued ecosystem component....  
....The report was well written [and] informative.

The Simon Fraser University research associate (a National Workshop participant, me) wrote the manager, and the manager commented:

More discussion of the linkages between the methodology, ecosystem integrity, and sustainable development is required....

...The meaning of [Information for all options should be available to ensure that each option is reviewed thoroughly before a decision is reached] is unclear.

...Given the constraints within which the document was produced, it is a reasonable first effort. However, I think that the next draft must discuss the question of how the priority setting methodology fits into environmental decision-making in the Federal government. From this question many other questions follow, such as who is going to do the scanning, screening, scoring and ranking, and how would they do it. I believe I can make a valuable contribution towards suggesting ways in which to address some of these "process" issues. **[to... incorporate]**

(The day before, the coordinator asked me to send comments.)

The Corporate Policy economist (a Project Team member and National Workshop participant) wrote the coordinator:



Aside from a general comment about the way priority setting is referred to in the text, most of the comments listed here are of editorial nature. The document is a good compendium of the work that has been done during the workshop and will be a useful tool for enhancing priority setting within Environment....

There has been considerable effort to make a distinction between environmental issue ranking and setting priorities for action. The following list... indicates where this distinction could still be clarified... or where "priority setting framework" could be replaced by "issue ranking method."

...It is not clear why "Priority Setting Methodology" should be part of the title if there has been agreement to use "Environmental Issue Ranking" instead...

...It would be useful to state... that environmental issue ranking is an essential step to help evaluate the benefits of environmental risk reductions. Ranking alone does not guarantee the most efficient allocation of resources....

...Has the name... "National Priority Setting Workshop" been accepted?...

It is not clear whether there are 3 or 4 factors to consider [health, ecological, socioeconomic, cultural]. We do not favour one approach over the other as long as it does not affect the validity of the criteria used for assessing the severity of the factors....

....Since there is often substantial uncertainty about the trend of the stressors, it would be preferable to flag such information rather than including it as a component of the risk....

...The examples used to illustrate the difference between stress and activity are not very clear (why is clearcut logging a stress and pesticide application an activity?).

The Environmental Protection/Industrial Programs chief (a Project Team member) wrote and the senior advisor commented:

Prevention of problems, issues and concerns not given enough prominence in the general discussion or method. Thus all the decisions aided by this process will be curative and after the damage has occurred. *[This might be the place to discuss other strategies such as protective, supportive as well as preventive and curative or restorative.]*

Others mentioned are current policy priorities such as the Green Plan initiatives; the terms and conditions of international agreements. *[This is [the chief's] view actually considered under the ownership flag but could get more prominence.]*

The terms and conditions of fed-prov. agreements and the same applies.

The stage of development of an environmental issue-research, control or development stage, (?) private sector response stage

Current budgets, workplans and resources constraints

Finally, the coordinator sent six pages of input to Draft 2, an elaborated outline of his Environmental Group Workshop presentation, to the Core Project Team - including the manager, coordinator, senior advisor, Ecosystem Risk Analysis socioeconomic risk analyst, Ecosystem Risk Analysis ecological risk analyst, Conservation senior analyst, first Atmospheric Environment director, senior environmental advisor, Industry environmental analyst, Health/Health Protection biostatistician, and executive director - (but not the senior advisor). He wrote the Team:

An early consensus must be reached about decisions which can be taken in spite of scientific uncertainty while knowledge gaps are filled.... Science, public values and economic self interest will all contribute to priority setting.

Sustainability requires the empowerment of decision-makers, the use of judgement (qualitative knowledge and understanding), the acceptance of uncertainty, and the commitment to involve partners, stakeholders and public interest groups.

The checklist for significance includes:

- objective criteria:
  - health consequences
  - ecological effects
  - socioeconomic impacts
- subjective criteria:
  - implications for future generations
  - public concern
  - mandate or role

....I... suggest that you consider the [Pulp & Paper Research Institute senior director - Conference Board senior research associate] approach to scoring..., ...all available information be scored and... the (health ecological and socioeconomic) factors not be added together.... Concurrently higher scores reflect a greater degree of certainty about the effects versus lower scoring issues where the effects are limited, uncertain or unknown.

....There are several approaches to presenting the data which should be considered:

- use raw scores....
- normalize scores....
- establish breakpoints (hi-md-lo),
- use ordered combinations...
  - ...nine sets of... hi-md-lo... for the three factors

By late September, the ecological risk analyst was developing about 20 case studies with the help of his colleagues. He was "progressing well and on schedule."

A Core Project Team meeting was held. **At the meeting, the Team questioned whether the Environment Canada-Canadian Petroleum Products Institute and Expanded Environment Canada-Canadian Petroleum Products Institute projects should be established as priorities, as shown below by excerpts from the meeting notes.**

The Team met to prepare Draft 2 of the Environment Canada Project report. The coordinator and ecological risk analyst did not attend.

The Team discussed how to proceed to Draft 2:

- [Canadian Petroleum Products Institute-Environment] Workshop is proposed for early December....
- Make certain that the case studies are a necessary part of draft 2 as a separate document

- [Health Protection] through [the biostatistician] provided a revised health ranking method - will review... and assess... and possibly fuse... with the methodology outlined in draft 1
- Need to define... the purpose of the Environmental Issue Ranking Document - it was felt that the mandate was expanded too far and limits needed to be set.
- [The Advisory Committee on Environmental Protection] wants to merge [the Environment Canada] and [Canadian Petroleum Products Institute] methodology - the [Director General Steering Committee] will make this decision.
- Reviewers want an expanded mandate in order to define purpose and scope - we are to ask [the Steering Committee] and [Core Director Working Group] for direction...
- Need to make it clear that Priority Setting is designed for 1) Environment... 2) [the Canadian Council of Ministers of the Environment] 3) the federal government in general.
- Need to address the fundamental issue of how this is going to be used eg. in the planning process, in the planning cycle, in dealing with fundamental issues to be addressed etc.
- Context to be based on the principles of sustainability.
- Reorder scoring system...
- Only the ecosystem will be scored - all else will be flagged having all issues being examined from an ecosystem point of view.
- The next step would involve scoring and ranking human health consequences, socio-economic consequences, ability to manage and public perception.
- The EcSCAN portion is to be strengthened...
- Since it is difficult to score emerging issues, alternatives could include... flag emerging issues or... use the same approach but phrase it as "possible" or "probable health effects are..."
- To define context and sustainability, merge [the coordinator's and first Atmospheric Environment director's] submissions...
- The introduction should be pragmatic - like a briefing note.

The Team agreed that the first Atmospheric Environment director and environmental analyst were to revise the sections on context and methodological basis, and the remaining sections were to be the responsibility of Conservation. The revisions were due by the end of September.

As a result of their meeting, the Team now had a revised table of contents for the report, including a suggested separate Case Studies Workbook. The section on methodological basis was to include "the [Canadian Petroleum Products Institute] link." The section on methodology was to be basically the same as the previous draft.

After the meeting, the manager sent the table of contents and meeting notes to the Core Project Team (but not the coordinator and ecological risk analyst) for review.<sup>7</sup>

*The Canadian Petroleum Products Institute and Environment Canada projects.*

By now:

[The Canadian Petroleum Products Institute] wishes to do a trial run of their methodology before [late October] and perhaps as early as [early October]. They wish to assemble a multidisciplinary team to test and develop the process details of the methodology; a validation exercise of the method rather than trying to rank issues - much as [Environment] has done at the workshop.

A meeting between the Institute and Environment was held. **At the meeting, the Institute advised Environment and Health to re-establish the Canadian Petroleum Products Institute Project as a priority, as shown below by excerpts from an Environmental Protection/Industrial Programs chief's briefing note. Also shown, the chief questioned whether the Environment Canada-Canadian Petroleum Products Institute Project should be established, and advised Environment and Health to re-establish the Canadian Petroleum Products Institute Project.**

The Institute and Environment met to discuss the proposed trial run of the Canadian Petroleum Products Institute process.

After the meeting, the chief wrote:

It was decided that there would be no point in testing steps 1 & 2 again at this next meeting as the two methods would eventually merge, but instead concentrate on testing [Canadian Petroleum Products Institute] steps 3 thru 7.

The process could start with a number of issues arbitrarily given the same ranking or score so that they enter the [Institute] or industry contribution and test this section... without... getting caught up in step 1 and 2...

It is evident that [the Institute] and some individuals from [Environment] are not interested in a preventive approach but only in a curative one and only when "sufficient" proof is available. This philosophical difference will have to be addressed eventually or the two methods will never merge.

The steps were:

- validate steps 3-7 of the [Canadian Petroleum Products Institute] report.
- retesting [Environment Canada] steps 1 and 2 after revised draft #2 available
- combining of the two methods and testing at a national workshop... in January 1994.

Regarding identification of test issues, the chief wrote:

[The Institute] wishes to have copies of the... issues that [Environment] is collecting for its own use e.g. [nitrogen oxides] and [volatile organic compounds].

[The Institute] will... provide [Environment] with some issues and issue material.

Thus further identification and collation of information will be necessary. Issues which have a health component will require information from [Health]... [The Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk

Analysis senior advisor] will discuss with [the Health/Health Protection biostatistician].

The output was "recommendations on the [Canadian Petroleum Products Institute] methodology and how to deal with the gaps."

The chief recommended:

- steps 1 and 2: [Environment] team, [senior advisor, Ecosystem Risk Analysis ecological risk analyst, and Environment Canada Project manager].
- steps 3-7: multidisciplinary team, [Environment] [chief and Industrial Programs senior engineer] and [Health] [senior advisor and biostatistician] will bring necessary data to the table prior to the validation exercise.

The chief copied his note to the manager, ecological risk analyst, Ecosystem Risk Analysis socioeconomic risk analyst, and biostatistician.<sup>8</sup>

*The Environment Canada Project.* The Core Project Team continued revising Draft 1 of the Environment Canada Project report. The Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis socioeconomic risk analyst wrote on the first Atmospheric Environment director's section on methodological basis, "Who's 'we'? I thought our job is to just design a method." The International Joint Commission senior environmental advisor wrote the Environment Canada Project coordinator, Ecosystem Risk Analysis senior advisor, socioeconomic risk analyst, and director:

I remain somewhat uneasy about the linkages between sustainability and the criteria used for scoring/ranking etc. It seems to me that we will need to rationalize - explicitly - the linkages between a set of sustainability principles and the scoring criteria. Otherwise it will seem arbitrary and lip service to the overall goal. I feel that sustainability dimensions are a significant part of criteria as now used - but the connection could be more transparent.

The Environment Canada Project manager drafted a section on possible measures of public concern.

The Ecosystem Sciences director general updated the Director General Steering Committee on the feedback from the Advisory Committee on Environmental Protection and environmental groups on the draft "priority setting methodology." (His three-page memo was basically a summary of the Advisory Committee minutes and the Environmental Group Workshop report.) The director general wrote the Steering Committee, "I would like to schedule the next meeting for [mid-October] to review Draft 2

and to discuss next steps in light of [the Advisory Committee's] recommendations to accelerate and expand the process of developing a method for priority setting."<sup>9</sup>

*The Canadian Petroleum Products Institute and Environment Canada projects.*

At the end of September, as requested by a Natural Resources representative, the Conservation & Protection/Environmental Protection/Industrial Programs chief drafted notes (an information note and note for the annotated agenda) for the luncheon presentation on "priority setting" at the mid-October National Air Issues Coordinating Committee meeting. He wrote:

The result of the two processes is an Environmental Priority Setting methodology with the [Environment] work forming a compatible, detailed component of the [Canadian Petroleum Products Institute] methodological framework. Work is underway to assemble sufficient background information and expertise to test-run the methodology.

....[The Advisory Committee on Environmental Protection] strongly supported the priority setting work.

This agenda item is to inform and obtain feedback... on work that is proceeding at [Environment] in conjunction with industry ([the Canadian Petroleum Products Institute]) to develop and test a science based environmental priority setting methodology.

[The Advisory Committee] has recommended that one environmental priority methodology be developed and that [the Canadian Council of Ministers of the Environment] and provinces become involved in the testing and use of the methodology.

Decision sought: The [Coordinating] committee is asked to endorse the priority setting work and support co-operative federal/provincial/industry/[environmental group] involvement in refining and applying the methodology.

The chief sent the notes "which can be used to develop the annotated agenda for the [Coordinating Committee] meeting" to the representative (and copied the Environment Canada Project manager, Environmental Protection/Air Issues director, and third Institute senior director).<sup>10</sup>

***The Environment (and Canadian Petroleum Products Institute) projects. The Canadian Labour Congress secretary-treasurer (an Advisory Committee on Environmental Protection member) advised the Committee (via the Secretariat, Resource Futures) to re-establish the Environment Canada and Legislative Framework on Pollution Prevention projects as priorities, as shown below. Also shown, he argued that the Environment Canada process should be further***

**developed before wider consultation, and it should not include a socioeconomic factor.**

The secretary-treasurer wrote the Resource Futures representative (and copied the Memorandum of Understanding Steering Committee, Pollution Probe Foundation executive director, Citizen's Environmental Alliance senior representative, and first Canadian Chemical Producers Association senior director):

I would like to express the views of the [Congress] on the priority setting project, as it arose from the [Advisory Committee] meeting of [early September]. I hope you will circulate this letter to all members of [the Committee] as soon as feasible.

We sympathize with the motives and the rationale for priority setting, within the limitations of the scheme as they were set out by [the senior director]... We are prepared to see the scheme go forward. Only if there is widespread support among [environmental groups] and a strong commitment by provincial governments will the scheme be useful, and justify the time and effort invested in it.

However, we have a number of reservations which... should be dealt with before the scheme goes forward for wider consultation. They concern, principally, the methodology... ..The scheme is ambitious, with a large number of assumptions in comparing different types of environmental detriment. These... conceal problems which gave rise to the... scheme in the first place.

Second, each individual detriment... may score quite low... leaving the collective national problem of pollutants untouched. It is not scientific to deny that there is a problem with pollutants generally.

Thirdly, there are serious methodological problems with trying to incorporate socio-economic analysis into a scoring system. Socio-economic analysis implies policy evaluations which cannot be addressed in a neutral, scientific fashion, as with the other parameters considered. It is highly regrettable that other scoring systems, e.g., those developed by the Ontario Ministry of the Environment and built upon in the Accelerated Reduction and Elimination of Toxic Substances... were not considered in the [Committee] priority setting project. Not only does this imply an attempt to reinvent the wheel in areas where there is already a high degree of consensus, but there is an attempt to depart from the existing schemes in some controversial and doubtful ways. In all of the existing schemes, socio-economic analysis is a separate and subsequent policy stage... I believe that this is the correct procedure and that to do otherwise will leave the [Committee] priority setting scheme subject to methodological ridicule.

Finally... a number of ventures... could and should be undertaken right away since they do not require... detailed, quantified policy analysis. One example is a national, legislated pollution prevention scheme... already... under the auspices of [the Committee].

At the beginning of October, the Conservation & Protection/Environmental Protection director general sent the secretary-treasurer's letter to the Environmental Protection/Industrial Programs chief and Environment Canada Project manager. He wrote them, "Please work together in developing a rationale/explanation/substantiation to the points raised... [The Conservation & Protection assistant deputy minister] and I

will want to discuss." (Conservation & Protection and Industry did not reply to the secretary-treasurer until mid-November.)<sup>11</sup>

*The Environment Canada Project.* **The Conservation & Protection assistant deputy minister advised the National Research Council vice-president (an Advisory Committee on Environmental Protection member) to establish the Environment Canada Project as a priority, as shown below.**

The assistant deputy minister sent the Director General Steering Committee and Core Director Working Group member lists to the vice-president and invited the Council to join the Project. He wrote the vice-president:

[The Environment Canada Project manager]... had an opportunity to talk with [a Council representative], who attended the [early] September [Advisory Committee] meeting on your behalf. [The representative] indicated that it would be of mutual benefit to both of our organizations to have representation from your agency on the [Environment] led... Steering Committee and the... Group. I certainly endorse this view.<sup>12</sup>

*The Environment Canada and Canadian Petroleum Products Institute projects.* **In early October, at the Canadian Environmental Protection Act/Federal Provincial Advisory Committee meeting, Environment advised the Committee to establish the Expanded Environment Canada-Canadian Petroleum Products Institute Project as a priority, as shown below by excerpts from a Conservation & Protection/Ecosystem Sciences director general's memo. Also shown, in mid-October, at the National Air Issues Coordinating Committee meeting, in the (end of September) Committee information note, Environment advised the Committee to establish it.**

Short presentations on the "priority setting project" were made that were similar to the early September Advisory Committee on Environmental Protection presentation. The provinces "expressed an interest" in the proposed approaches and wished to be updated on future developments. The committees suggested a number of modifications.

Meanwhile, in early October, the Canadian Petroleum Products Institute Workshop (also called Validation Exercise of Priority Setting Methodology) was scheduled for the beginning of November. The Conservation & Protection/Environmental Protection/Pollution Prevention director was now on executive interchange at the Institute and the contact person for the Canadian Petroleum Products



Institute Project. She drafted a list of Workshop participants, including the Canadian Petroleum Products Institute, government (Environment, Finance, Natural Resources, Health, and Industry), and other (Canadian Chemical Producers Association, Pembina Institute, and Society to Overcome Pollution). The Canadian Petroleum Products Institute included Imperial Oil, and the Shell senior manager, formerly on exchange as the first Health/Health Protection director. Government included the Environment Canada Project manager, Natural Resources/Energy senior economist, and Health Protection biostatistician.

**Conservation & Protection re-established the Canadian Petroleum Products Institute Project as a priority for Environment, as shown below by excerpts from an Environmental Priorities Working Group co-chairs' letter.**

The second Petro-Canada senior manager and Environmental Protection director general invited the participants to the one and a half day workshop to validate the methodology for "setting environmental priorities" for industry sectors. The co-chairs wrote them:

The sector methodology determines the priority of issues and sector response actions. The purpose of the workshop is to identify problem areas in the methodology by testing it against several issues and recommend improvements; it is not to prioritize these issues and the results will not be used as such. It will also provide an opportunity to compare the revised Environment... process for issue ranking with the sector approach.

The Ecosystem Sciences/Conservation/Ecosystem Risk Analysis socioeconomic risk analyst sent the letter to the Environment Canada Project coordinator and wrote him, "I don't know how much you know about this but here is something you might not have rec'd yet. [The contact] would like to meet to see what information needs to be gathered to have this meeting."<sup>13</sup>

*The Environment Canada Project.* Conservation & Protection/Ecosystem Sciences/Conservation revised the draft table of contents for Draft 2 of the Environment Canada Project report.

**The Conservation/Ecosystem Risk Analysis ecological risk analyst finished Draft 1 of the Case Studies Workbook, including a matrix summarizing the preliminary scoring and ranking of 15 issues (based on Draft 1 of the Project report).** The matrix is shown in Appendix 1. Environment and Fisheries each scored acid rain, differently; and the ecological risk analyst, Conservation &

Protection/Environmental Protection/Industrial Programs, and the Health/Health Protection biostatistician each scored smog, differently. They scored the other issues similarly. "The scores reflect the views of individuals compiling the case study material, which at this time have not been validated by the contemplated consultative process."

The Ecosystem Sciences director general sent to the Director General Steering Committee the draft agenda for the mid-October Committee meeting, the table of contents for Draft 2 of the Project report and Draft 1 of the Workbook (the Committee were to receive copies when they were distributed for general comment), and the end of August Committee meeting minutes for final approval. **The director general updated the Committee on the Environment Canada and Canadian Petroleum Products Institute projects, and advised them to re-establish the Environment Canada Project as a priority, as shown below.**

Conservation & Protection/State of Environment Reporting was now represented by the senior economic advisor.

The director general wrote the Committee:

[The Canadian Petroleum Products Institute] have indicated that they will hold an internal Workshop to validate their methodology and have invited members of the project team to participate which we will.

We propose to hold a small workshop in late November to review and validate the data in the Case Study Book... and to test more comprehensively the methodology as developed to the Draft 2 level.

Both of these will be followed by the proposed joint [Environment-Institute] Workshop in early January 1994 to assess how the methods might be merged.

**The Core Project Team finished Draft 2 of the Environment Canada Project report. They resolved the arguments about re-establishing the Project because more time should be allocated to develop and use the Environment Canada process, further developing it before wider consultation, and it not including a socioeconomic factor. They were to advise that the Project should be re-established because more time should be allocated to develop *not* use the process, did not recommend developing it before wider consultation, and recommended it include a socioeconomic factor, as shown below by excerpts from the report.**

Draft 2, now called Environmental Issue Definition and Ranking, was 46 pages long, not including the 11 annexes (45 pages). The statement about the International Joint Commission being an active participant was removed.

General conclusions now included:

...There has been a considerable opportunity to expand the number and range of organizations that have considered the task set to the Environment Canada project team. The response... has, without exception, been supportive of the need, and variously supportive (cautious to strongly positive) of the methodology being considered and the direction of development.

Hesitation as to its potential validity is tempered by two oft-repeated questions, which, at this point, cannot be answered...:

- How will the issues actually be ranked or clustered... (i.e., will my pet issue survive)?
- How will this be used within the Department (or by others who might find it attractive)?

There is sufficient support, though, to conclude that this is likely to be as good a methodology as could be developed given the time frame and the resources available, and one which is certainly more comprehensive than others used elsewhere.

Further, there is nothing discovered to date that suggests that the development of the methodology should be stopped or drastically re-directed.

Specific conclusions for further development of the methodology included:

- Ecosystem sustainability must become, and remain, the primary focus... tempered and supported by human health and socio-economic concerns.
- The risk ranking methodology should ensure that no environmental issue is "dropped off the table", rather it should be used to direct all issues to the "right" table.
- The [stress-exposure-response-adapt] framework appears to provide an appropriate framework for defining environmental issues within the concept of a cascading series of issues and sub-issues from the global/national level down to the regional and local levels and can adequately handle stresses and responses from the generic to the specific.
- The aspects of issue characterization for scoring and flagging purposes appear to be comprehensive, non-overlapping and appropriate to the decision-makers' needs, although further development and refinement is required.
- Development and validation of additional and existing case studies remains essential.

Other specific conclusions concerning the process to be followed included:

- [The Canadian Petroleum Products Institute] and the Environment Canada methodologies need to be integrated into one single methodology that can handle the... original questions:
  - What is an environmental issue?
  - How would you rank one such issue in comparison with the others?
  - How do you respond to the prioritized [sic] environmental issues?
  - How do you obtain the maximum environmental benefit, over all response or control strategies for any given level of investment?

This would essentially mean expanding [Canadian Petroleum Products Institute] steps 3 to 7 to cover all activities (as well as all pollutants) contributing to environmental issues and to all potential sectors.

- [The Advisory Committee on Environmental Protection's] recommendation that the Department should develop and report on a fully prioritized [sic] list of environmental issues... [by September 1994].
- The pace of development of the methodology should be slowed and the time frame for development stretched to ensure adequate opportunity for consultation, consideration, consolidation, and calibration...
- The process of development should be open to a broader range of stakeholders and partners including [environmental groups].

The Team recommended:

- ...The Second Draft Report, should be circulated widely for comment.
- The Third Draft should... be expanded to cover the additional steps required to deal with the third and fourth questions. If possible this... should be prepared for discussion in principle in January 1994.
- The joint [Environment-Institute] Workshop should proceed, as suggested, in mid-January 1994, with time set aside... to deal with...:
  - issue definition and ranking (i.e., the contents of this report)
  - the... [Canadian Petroleum Products Institute] methodology (steps 3 to 7), and
  - the initial scope and methodology for integrating both methodologies.

The annexes now included the Environmental Group Workshop report. The list of Director General Steering Committee and Core Director Working Group members was removed.<sup>14</sup>

*The Environment Canada Integration Project.* **Conservation & Protection was split into two: Environmental Protection and Environmental Conservation.** The Environmental Protection assistant deputy minister was the former Conservation & Protection assistant deputy minister. Environmental Protection were to include the former Conservation & Protection/Environmental Protection and some Conservation & Protection/Ecosystem Sciences staff, including the Environment Canada Project manager and Environment Canada Project coordinator. Environmental Conservation were to include the former Conservation & Protection/Wildlife, Conservation & Protection/Science Advisor, and some Ecosystem Sciences staff.<sup>15</sup>

*The Environment Canada Project.* **At the third Director General Steering Committee meeting, in Draft 2 of the Environment Canada Project report, the Core Project Team advised the Committee (via the Environment Canada Project manager) to re-establish the Environment Canada Project (equal to establishing**

**the Expanded Environment Canada-Canadian Petroleum Products Institute Project) as a priority. As shown below by excerpts from the meeting minutes, the Committee re-established the Environment Canada Project for Environment and other federal departments (develop the Environment Canada process), but questioned whether the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established.**

The Steering Committee met to receive overviews of Draft 2, and Draft 1 of the Case Studies Workbook, and to consider the advice received from the Advisory Committee on Environmental Protection meeting and Environmental Group Workshop. With the exceptions of Atmospheric Environment, Natural Resources/Energy, Transport, and Finance, all director generals attended or were represented. The former Conservation & Protection/Policy director general was represented by the former Policy analyst. Agriculture was represented by the Agriculture senior environmental analyst. The Environmental Protection/Response Assessment director general, formerly the first Conservation & Protection/Environmental Protection/Industrial Programs director, also attended.

The Environment Canada Project manager reported on progress, and gave an overview of Draft 2. Regarding the end of August meeting decisions, he told the Steering Committee:

- the purpose of the project was clarified;
- the goal of sustainability was reflected;
- the health criteria options were partially resolved - a new alternative was suggested;
- the ecological and socioeconomic extent criteria were partially resolved - they required testing;
- the cultural factor was resolved - it was handled by a flag and comments;
- the emerging issue problem was resolved - it was handled by a flag and modification of criteria from actual to probable;
- the scoring was partially tested - as criteria change, testing must continue;
- the case studies were successfully tested to confirm their resolving power; and
- a public discussion document was not prepared - Draft 3 was the appropriate draft.

[The manager] and the Project Team were commended on progress achieved to date. It was agreed that the proposed methodology had excellent promise for providing senior decision-makers with a transparent and systematic method for ranking and clustering environmental issues.

It was recommended that the proposed process for applying the methodology in house, i.e., the establishment of multi stakeholder panels to rank environmental issues on a cyclical basis, should be reviewed by [Environment] "policy shops." This could be initiated through the Core Directors Working Group. The matter of how often the issue ranking cycle would be carried out i.e., every 2 or 4 years or some other option, was discussed but not resolved.

There was general agreement that the proposed conceptual model for the overall decision-making framework for environmental risk assessment and management had merit, was compatible with the [Canadian Petroleum Products Institute] model and could provide a template for merging the [Environment] and a broadened, multi-sectoral [Canadian Petroleum Products Institute] methodology.

The Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis ecological risk analyst gave an overview of Draft 1 of the Case Studies Workbook and accompanying matrix.

The... Book and... matrix demonstrate that the scoring process has resolving power. It was noted that scoring was dependent on the composition of the panel and information base made available to them. It was suggested that uncertainty about socio-economic data or impacts should be noted as well as uncertainty about scientific information base [sic]. The Steering Committee concurred that the [late] November workshop was essential for further validation of the case studies and refining the... Matrix.

It was suggested that there may be several scoring levels/operations. For example, at the first level, scoring would be on the basis of risk to the ecosystem. At the next level, issues would be scored and prioritized [sic] on the basis of research and/or action required. These priorities would then serve to guide sectoral priorities and associated investment decisions.

The Steering Committee discussed the Advisory Committee and environmental group recommendations (including the expectations being created, the timeframe, resources requirements, and the role of the Steering Committee).

It was agreed that [the manager] would discuss with the... Working Group how the three key initiatives which relate to the development of an overall priority setting and risk management framework and methodology might be co-managed. These include the [Environment] and [Institute] components as well as the [Environmental Protection] Strategic Options initiative. From a methodological point of view it is not difficult to satisfy [the Advisory Committee's] recommendation to merge the [Environment] and [Institute] priority setting methods. However, concern was expressed that the [Canadian Petroleum Products Institute] methodology may not be sufficiently developed to undertake this step in the near future. The [Institute] validation workshop... will provide an indication... Their state of readiness including availability of costing data on alternative interventions, will largely determine the time frame.

[Environmental group] and [Advisory Committee] recommendations to focus on the sustainability of ecosystem integrity and sensitize fine-tune the methodology to identify emerging issues has been addressed in Draft 2...

It was agreed that the consultation process would be broadened to include a wider range of stakeholders at the joint [Environment-Institute] Workshop and in the events leading up to and following it. Draft 2 will be widely circulated to the provinces, [Canadian Environmental Network], and industrial stakeholders - the Friday Club.

**Conservation & Protection established the Strategic Options Project (to develop and use a process to determine federal government pollution priorities) as a priority for Environment by now.** The Response Assessment director general was responsible for the Project. (A pilot Project for the aluminum industry was underway by May 1993.)

The Friday Club (or Group) was an informal working group on environmental issues. They included two Advisory Committee members - the Mining Association and Canadian Chemical Producers Association - and the Institute, Business Council on National Issues, Canadian Electrical Association, Canadian Pulp & Paper Association, Canadian Chamber of Commerce, and Canadian Vehicle Manufacturers' Association.

The manager presented the next steps. They included: distribution of Draft 2, including the Case Studies Workbook, the case studies workshop, review of Draft 3 by the Working Group and Steering Committee in mid-December, the five-day Institute-Environment Workshop, and a Steering Committee meeting in late January.

The Steering Committee agreed to the first step, with distribution at the end of October, and the second step. In other words, they approved Draft 2 of the Environment Canada Project report.<sup>16</sup>

#### Environmental Protection Assistant Deputy Minister Approval of the Revised Plan

In this section, the fifth process of re-establishing the Environment Canada Project as a priority for Environment began and ended. Several other processes of determining environmental priorities intersected with this one, including establishing and re-establishing the Expanded Environment Canada-Canadian Petroleum Products Institute, Environment Canada-Canadian Petroleum Products Institute, and Environment Canada projects for Environment, the Canadian Petroleum Products Institute, Health, and Industry.

Specifically, the Institute Workshop - including the Conservation & Protection/Environmental Protection/Industrial Programs senior engineer and Health/Health Protection biostatistician - argued to the Environmental Priorities Working

Group - including the Natural Resources/Energy senior economist, and biostatistician - and Industry Coordinating Group that Environment, the Institute, and Health should establish the Expanded Environment Canada-Canadian Petroleum Products Institute Project, and advised the Institute to advise other sectors and the provinces to establish it. Some Working Group members questioned whether the Institute should establish the Environment Canada-Canadian Petroleum Products Institute Project. The Environment Canada Project manager questioned whether the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established, and advised the Environmental Protection/Response Assessment director general (now the Environment Canada Project lead) to advise the Environmental Protection assistant deputy minister (formerly the Conservation & Protection assistant deputy minister), Environmental Conservation assistant deputy minister, and Industry assistant deputy minister, if not Environment management board to re-establish the Environment Canada Project. The manager and Canadian Petroleum Products Institute Project contact advised the director general to re-establish it, and to establish the Environment Canada-Canadian Petroleum Products Institute Project. The manager and contact questioned whether the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be. The director general (and manager and contact) advised the Environmental Protection assistant deputy minister to re-establish the Environment Canada Project, and establish the Environment Canada-Canadian Petroleum Products Institute Project. And she questioned whether the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be. Then the Environmental Protection assistant deputy minister re-established the Environment Canada Project (develop the Environment Canada process) and established the Environment Canada-Canadian Petroleum Products Institute Project (develop the Environment Canada-Canadian Petroleum Products Institute process) for Environment.

During these processes of determining environmental priorities, a few arguments continued and emerged about whether a project itself should be a priority, who should be involved in deciding priorities more generally, and the scope of a process for determining them. Specifically, Institute Workshop participants argued to the Working Group and Coordinating Group that the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established because one (the Expanded Environment Canada-Canadian Petroleum Products Institute) process should determine



national environmental priorities, and other sectors and the provinces should help decide them.

At this point, the Environmental Protection assistant deputy minister resolved the arguments about Environment and Industry advising the Canadian Council of Ministers of the Environment to establish the Environment Canada Project because one (the Environment Canada) process should determine national environmental priorities in 1994. He decided that Environment were to advise them, but to help develop *not use* the Environment Canada and Canadian Petroleum Products Institute processes. The other arguments were not resolved during this period, October 1993 to December 1993.

### Evidence

In mid-October 1993, the Environment Canada Project continued as Conservation & Protection proceeded to implement Phase 1 of the Project plan, led by Conservation & Protection/Ecosystem Sciences.

#### *The Environment Canada and Canadian Petroleum Products Institute projects.*

The same day as the Director General Steering Committee meeting, the Canadian Labour Congress secretary-treasurer proposed to the Advisory Committee on Environmental Protection labour and environmental group representatives that they set up "an explicit labour-environment caucus." He wrote them:

There are signs that the Advisory Committee... is about to become much more important as a policy advisory body. For instance, serious work is at last being done on economic instruments for environmental protection. Also, the employers are becoming much more organized, for instance on the matter of environmental priority setting (see the letter attached).

On priority setting, we have so far been outmanoeuvred. When the matter was raised initially by Environment... we took priority setting to be a policy matter and expressed scepticism as to whether [the Advisory Committee] was the right forum in which it should be discussed. ...We had in mind... something like the Green Plan. We said that the government already had a policy, at least on paper, and that it was the elected government's job to set policy, not a body such as [the Committee], which could (certainly) help to implement general directions of policy once they had been delineated. So the labour movement expressed no interest in participating.

As it transpired, the initiative had emanated from the business representatives, not from Environment... Its aim, it seems, is to try to impose some order on the government's regulatory agenda and to cut down on the mountain of consultation... sponsored by Environment... The latter part of the agenda is well taken; but the former part is likely to be some form of deregulation in thin disguise. At any event,

business sat down with government to work out the priority-setting scheme in which (as usual) they were aided by some environmentalists, co-opted for the occasion and, no doubt, ignorant of the political game that they had been asked to play. ...We now have the outline of a pseudo-scientific priority-setting scheme, which has already and characteristically gone out for consultation with the wider environmental movement, long before the scheme has been properly articulated. We will have a hard job ensuring that the priority-setting scheme serves a proper public purpose rather than the business agenda.

In consequence, I am proposing that we set up an explicit... caucus with proper caucus discipline and meetings before each [Advisory Committee] session... We have already strongly requested that [the Committee] include more representation from the industrial manufacturing sector, ... the environmental movement, municipalities and provincial governments. But our first job is to get our own act together. One difficulty... is that the government sends [the Committee] meeting materials to principals and not to alternates, who on paper have no status on [the Committee]. This makes caucusing difficult. And I must ask labour and environmental principals to ensure that materials get to the relevant alternates in good time.

Please let me know in writing whether you will participate in such a caucus.<sup>17</sup>

(The letter referred to by the secretary-treasurer was not attached.) The secretary-treasurer's letter was not in the Environment Canada Project file.

*The Environment Canada Integration and Environment Canada projects.* The Chretien Liberals ended the Election project as a priority for the federal government in late October. They won a majority government.

By now, the Environment Canada Project coordinator (formerly the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis head) was the Environmental Protection/Response Assessment senior advisor and no longer the coordinator.<sup>18</sup>

*The Environment Canada Project.* In late October and early November, Draft 2 of the Environment Canada Project report was distributed to over 100 recipients, including the provinces, Canadian Environmental Network, and industry (Friday Club) for review and comment by the beginning of December. The Case Studies Workbook was not included.

The Environment Canada Project manager wrote recipients:

The attached report... is being prepared in response to suggestions made by stakeholders and partners, as well as from internal recognition that the environmental agenda is very crowded and that some measure of prioritization [sic] and ranking must be made.

The report... will continue to evolve. It is planned that a more formal public consultation will take place in 1994, perhaps through a National Workshop, when some of the methodological wrinkles and still unanswered questions have been answered.

He asked for their help in doing so, and for them to inform him of their interest in participating in the workshop which could be held in late January.<sup>19</sup>

*The Canadian Petroleum Products Institute and Expanded Environment Canada-Canadian Petroleum Products Institute projects.* Meanwhile, in late October, the Canadian Petroleum Products Institute Project contact sent a summary of the Canadian Petroleum Products Institute Project report and Draft 2 of the Environment Canada Project report to the Canadian Petroleum Products Institute Workshop participants. She wrote them, "To the extent possible, background information on the test issues will be faxed from [Environment] and [the Institute].... We look forward to some challenging discussions."

The Environmental Priorities Working Group determined the Canadian Petroleum Products Institute issues based on the Green Plan. They included acid rain, smog, climate change, contaminated sites, and hazardous air pollutants.

**In early November, at the Workshop, participants argued to the Working Group and Industry Coordinating Group that Environment, the Institute, and Health should establish the Expanded Environment Canada-Canadian Petroleum Products Institute Project as a priority because one (the Expanded Environment Canada-Canadian Petroleum Products Institute) process should determine national environmental priorities, and other sectors and provinces should help decide them, as shown below by excerpts from the contact's summary report and memo. Also shown, they advised the Institute to advise other sectors and the provinces to establish the Project. Some Working Group members questioned whether the Institute should establish the Environment Canada-Canadian Petroleum Products Institute Project.** (The Workshop documents were not in the Environment Canada Project file.)

The Workshop was held to test run issues through the "environmental priority setting methodology" developed for the Petroleum Products Industry Task Force. About 22 participants attended. About half were Working Group members, including Industry, Transport, the Environment Canada Project manager, Environmental Protection/Response Assessment senior advisor, Health/Health Protection

biostatistician, and Society to Overcome Pollution. The Conservation & Protection/Environmental Protection director general (the Working Group co-chair), Natural Resources/Energy, and Pembina Institute did not attend.

About one third of the participants were from industry (including the Institute, Imperial Oil, and Canadian Chemical Producers Association). About one third were from Environment (including the Environmental Protection/Industrial Programs senior engineer) and other federal departments (including Finance but not the Working Group member). The Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis ecological risk analyst did not attend. A consulting company (Rawson Academy) also attended.

The second Petro-Canada senior manager (the Working Group co-chair) gave the introductory and closing remarks. The third Institute senior director, and manager gave a review of the Canadian Petroleum Products Institute and Environment Canada methodologies. The Canadian Petroleum Products Institute Project contact, and manager led a test run of acid rain (in the plenary session). One group reviewed the Canadian Petroleum Products Institute and Environment Canada steps 1-2, led by the president (but not the ecological risk analyst, as planned). Two other groups reviewed Canadian Petroleum Products Institute steps 3-7, led by the senior director and senior engineer, and by the contact and Industrial Programs chief, respectively.

General problems and comments included "need to stand back and look at significance of the numbers and not get lost in the numbers." Success criteria included "different groups and individuals will score issue same way from same facts." Steps forward were:

- Test [Environment Canada] and [Canadian Petroleum Products Institute] processes within 30 days by [Environment], [the Institute], and Health... ....Move to common system.
- Possible joint workshop in January to finalize Steps 1&2.
- Develop critical path to have set of issue priorities for Canada by next fall.
- Promote one system among other sectors and provinces.

Specific points for Step 1 included "science versus values - can we clarify? Public risk acceptability?" and "how to include benefits in the evaluation risk [sic]?" Specific points for the comparison of the Environment Canada and Canadian Petroleum Products Institute Steps 1-2 included "generally both systems deliver what is needed."

To highlight the results, it was agreed that a critical path should be developed outlining the steps to identify the issue priorities to [the Advisory Committee on Environmental Protection]... next September. This will start with the integration of Steps 1 and 2 of the original model developed for [the Institute] and [Environment's] expanded version within the next month and possibly a further workshop to complete the integration. At the same time, efforts will continue to involve other industry sectors and provinces in developing a common methodology and terminology for setting priorities for action.

In sum, the meeting was useful in identifying problems with the model and did broaden understanding of the process, which was considered a sensible approach.

After the workshop, the contact sent a three-page summary report to the participants, Working Group, and Coordinating Group. The Coordinating Group included the Institute, Novacor Chemicals, Imperial Oil, Chevron Canada, Shell, Sunoco, Petro-Canada, and Husky Oil.

The manager and contact wrote in mid-December, "The Workshop recommended merging the two methodologies (under the lead of Environment...) and testing it more fully against the case studies (under the joint leadership of [the Institute] and [Environment]) in December."

The senior advisor wrote in a late January briefing note, and told the Director General Steering Committee in mid-January, respectively:

During the plenary, the following concerns were also raised. Participants felt that issues should not only be ranked solely on a scientific or factual basis but public risk perception or acceptability should also be factored-in. As well, they felt that there should be some consideration of risk versus benefits: potential costs with and without a program; tradeoffs between potential gains from product/substances and adverse side effects. The need to choose a common reference point for characterizing or scoring issues was also noted: worst case, most likely or current level of exposure.

...The highlight of the workshop was that the participants

- felt there should be strong lobbying to develop and use a single methodology across the country;
- recommended the integration of the two methodologies;
- strongly recommended the inclusion of additional stakeholders in the activity (particularly other sectors and the provinces) and saw a distinct role for [the Institute] in this respect;
- noted that there were many scanning processes underway and that these should be tapped into to determine what are the "issues" to be considered; and
- proposed a national workshop should be held on the methodology.

And the (by then former) manager wrote in late January, "The... Workshop... requested that the two methodologies be compared against... a set of case studies as

some of the [Institute] task group [the Working Group] considered the [Environment] methodology too complex for [Institute] use."<sup>20</sup>

*The Environment Canada Project.* In early November, the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis senior advisor wrote the Environment Canada Project manager:

Draft 2 is a much superior product in every way and several favourable comments have been received. In view of the demands placed on staff and the extra effort by all, I am recalling your pledge to ensure those involved would receive a commendation from the Deputy Minister. In these changing, uncertain times such a gesture would mean a great deal to staff, and management should ensure a citation is placed on the personal records of employees.<sup>21</sup>

*The Federal Government Restructuring Project.* Industry & Science was now Industry.<sup>22</sup>

*The Environment Canada and Canadian Petroleum Products Institute projects.* The Environmental Protection/Response Assessment senior advisor followed up on the Canadian Petroleum Products Institute Workshop with the Canadian Petroleum Products Institute Project contact, and drafted notes. Regarding Integration Process: Possible Response to Advisory Committee on Environmental Protection Challenge, he wrote:

Issue ranking....

- submit proposal by XMAS and finalize by March

Source apportionment ([Canadian Petroleum Products Institute] Step 3)

- ...[Institute] approach is only suitable for chemicals and we need an approach which will also address issues such as biodiversity...
- submit report by next March

Sector contribution to issue/cross-sectoral action plans ([Canadian Petroleum Products Institute] Steps 4-7)

- [Institute] wants to sell their method to industry sector associations (has blessing of Friday Club)
- prefer one-on-one approach to workshop presentation - could involve both [Environment] & [Industry]....
- submit proposed approach by late December (possible [Industry] lead) and finalize report by March

Submit joint [Environment-Institute] proposal to [Canadian Council of Ministers of the Environment] asking for:

- provincial agreement in principal to pursue goal of common method - industry groups will not want government using different methods and will want an opportunity to convey their point of view to any government who thinks differently

- provincial contribution to issue scan
- either [Council/Environmental Protection Committee] or [Council/Strategic Planning Committee] by January

Environmental issue scan

- should start at once (based on [Environment Canada] Step 1 and 2) and we should review [Council] Environmental Scan, [Conservation & Protection/Ecosystem Sciences] Ecoscan, and Departmental processes; request input from partners and stakeholders (eg [Advisory Committee] members, [Canadian Environmental Network])
- after proposal tabled with [Council] scan should incorporate consultation with provinces - at minimum Ontario, Alberta, BC and Quebec
- draft issue list circulated by May
- candidate issue list submitted for [Advisory Committee] approval by Sept

**The Environment Canada Project manager drafted a revised plan for the Environment Canada Project (a four-page urgent memo on the Environmental Issue Ranking Project), and sent it to the Response Assessment director general (and copied the second Environmental Protection/Regulatory Affairs director and Ecosystem Sciences director general). He questioned whether the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established as a priority, and advised her to advise the Environmental Protection, Environmental Conservation, and Industry assistant deputy ministers, if not Environment management board, to re-establish the Environment Canada Project, as shown below.**

The manager wrote the Response Assessment director general:

I want to set out for you in broad terms, the tasks and some of the stages that are or might be before us in bringing this project to completion. [The senior advisor] and I will be working on a detailed critical path, setting out also the resource levels that we feel will be needed to complete the task successfully.

I am giving this note to you... because it is important in the transitional phase that we are going through... in which clear decisions have to be made relatively soon.

There are three basic tasks:

1. finalize the methodology for defining and ranking environmental issues (original mandate given to the [Director General] Steering Committee and the project team...;
2. develop a full dossier of environmental issues and rank them ([deputy minister's] request and [Advisory Committee on Environmental Protection] recommendation); and
3. integrate the methodology (task 1) with the [Canadian Petroleum Products Institute] methodology ([Advisory Committee] recommendation).

Factors that need to be taken into account include:

- the Department has not yet accepted the challenges of [the Advisory Committee];

- [the Canadian Petroleum Products Institute] are acting as if we have... and is suggesting a series of presentations to the Friday Club (as gleaned by [the senior advisor] who has had conversations with the [contact]....)
- [the Canadian Council of Ministers of the Environment] and the [environmental groups] (significant potential partners) have not bought in;
- re-organization has cast in some doubt the resources and organizational structures that might carry on whatever... tasks are selected, and in any case the old [Ecosystem Sciences/Conservation] budget allocated to this project is exhausted.

Initial plans for Task 1 could include:

- receiving comments on Draft 2 of the report [on the Environment Canada Project] and preparing Draft 3... with Draft 3 being published in... early January [1994];
- validating the initial 15 or so issues in a small workshop in late November [1993] and including the Case Book... in the distribution of Draft 3;
- developing a more refined proposal for how the methodology and process might be functionally applied within the Department (by January 1994);
- formally circulating Draft 3 to the provinces through [the Council] and having a national workshop (with or without [the Institute]) in... February to work through the methodology and receive critical comments...; and
- preparing Draft 4 or a formal (translated) [Environment] discussion paper for circulation broadly in... April.

This can be accomplished under the present mandate of the... Steering Committee, and would require that the current interdepartmental project team be maintained and would be required to work perhaps 20% of their time [to the end of March]. (Core members... would have to work more intensively but not full time). A budget of... \$100k (depending on the costs of the workshop) would be required.

Initial plans for Task 2 could include:

- all components of the Department would have to provide assistance in writing up mini-profile sheets on all concerns, problems, events, and issues currently identified by [the end of December 1993];
- a small interdepartmental group of scientific, technical and other staff would have to screen the mini-profile information, establish probable issues and seek more detailed information from the original contributors (and perhaps other sources) in order to develop the issue profile sheets perhaps by May 1994; and
- an initial screening workshop could be held in June to rank the probable issues against the methodology and provide the prioritized list for [the Advisory Committee] in September... and for the start of the Departments 1995-96 planning cycle.

This, I feel can be accomplished under an expanded mandate for the... Steering Committee, but would require very senior level commitment to... obtain the time of... other components of the Department to complete the information generation and reporting needs... Staff resource requirements... presumably... could include all the spare time of the core project team members... [to the end of March] plus some time from additional scientific staff of the Department. It could also be convenient to incorporate some inputs from or through [the Council], to make sure that the dossier reflects other perspectives. Funding requirements would... be... \$100k (depending on the costs of the Workshop).



And initial plans for Task 3 could include:

- establish a small interdepartmental and industry team to merge... the two methodologies into a single... document by [the end of January] 1994;
- develop representative case studies to calibrate the integrated methodology by [the end of January]...;
- distribute the document and case studies, and hold a workshop to test the integrated methodology in March...

This could be accomplished in concert with task 1, but not if task 2 were to be run simultaneously - it would result in an impossible work load on present staff unless additional staff resources or consultants were applied. The integration is not difficult conceptually, but the range of case studies available to test the methodology... and covering a variety of other sectors and non-pollutant issues would present problems. In addition, the integration... requires that the [Canadian Petroleum Products Institute] methodology... be expanded to include all sectors' expenditures, plus the public sector... - this presents a data acquisition and analysis problem of significantly greater proportions. Funding requirements... have not been considered.

The manager also wrote:

There is... a fourth task, which would be to develop a full dossier of environmental issues and rank them under the integrated methodologies. This is a logical step and... might be the full expectation of... [the Advisory Committee] and the Department. Collecting the data and information for all issues, for all sectors (all private sectors and the public sector) is not a trivial task.

...There is a need for us to... consider these points and to develop a proposal which I think would have to be presented to both [Environment assistant deputy ministers] and those at least of Industry..., if not to [Environmental Management Committee] for decision.

"Both [Environment assistant deputy ministers]" referred to the Environmental Protection and Environmental Conservation assistant deputy ministers. "Environmental Management Committee" is another name for the Environment management board.<sup>23</sup>

*The Environment Canada Project.* The Environmental Protection/Response Assessment senior advisor contracted Simon Fraser University, under the direction of a professor, to advise Environment on the best approach for incorporating risk communication considerations into the environmental issue ranking process. In addition, the University research director (me) was to attend the Society for Risk Analysis annual meeting in early December and provide Environment with a review of the proceedings on ecological risk assessment and risk communication.<sup>24</sup>

*The Environment Canada and Canadian Petroleum Products Institute projects.*

In mid-November, the second Conservation & Protection/Environmental Protection/Regulatory Affairs, and Industry directors replied to the Canadian Labour Congress secretary-treasurer's end of September letter to the Advisory Committee on Environmental Protection. (The Environment Canada Project manager helped draft the reply.)

The directors wrote the "executive [vice-president]" (and copied the Memorandum of Understanding Steering Committee, Pollution Probe executive director, Citizen's Environmental Alliance, and first Canadian Chemical Producers Association senior director) (three pages):

In your letter, you indicated that "there is a need for a strong support among [environmental groups] and the provincial governments in order to get their buy-in to the priority setting methodology." We are committed to providing ample opportunity for involvement of all groups in order to obtain widespread support and acceptance. In fact, ...[Environment] hosted a special workshop for 10 [environmental groups]....

The current work with... [the Canadian Petroleum Products Institute] is to make the parties aware of the process and to promote understanding of the [Canadian Petroleum Products Institute] and the [Environment Canada] methodology. Care will obviously be taken to make the process open and transparent. Detailed plans for using the methodology, including expert involvement from all groups including industry, labour, [environmental groups], provincial and federal representatives will be organized in the next few months.

...You have indicated some reservations with the methodologies... It would be helpful if you could elaborate specifically on the areas of concern so that we could continue discussions on an item by item basis.

Before developing our model in coordination with [the Institute], we looked at a number of other existing scoring systems including the system developed for the Accelerated Reduction and Elimination of Toxic... program. However, the system developed for the... program was used to establish a candidate list of substances for action and not necessarily to prioritize issues or actions.... ...Some pollutants will score low, however, this does not imply a lack of commitment in dealing with the collective problem.... You have stressed the importance of dealing with the national problem of pollution and we feel that is an integral part of the [Environment Canada-Canadian Petroleum Products Institute] methodologies.

The [Environment Canada] and [Canadian Petroleum Products Institute] processes include adverse socio-economic impacts... It is well documented that when using a risk-based approach to priority setting, there are three types of risk which should be considered: ...risk to human health; ...risk to ecosystems and ...risk to 'quality of life' or socio-economic risk. The types of socio-economic impacts contemplated include... Including this category... was not meant to imply that socio-economic cost and benefit analysis or policy evaluations be done in order to prioritize environmental issues.

The current Environment... initiative... does not endeavour to address the risk management component... What is being developed is... a ranking of environmental problems according to the risk they pose. Once a ranking has been achieved, the

socio-economic and political considerations associated with... the risk management stage... would be taken into account.

[Environment] and [Industry] agree that the priority setting process should not impede progress on the current environmental agenda. It should be used as one tool to aid in decision-making for future action.

We hope that this clarifies the position of Environment... and Industry.

The secretary-treasurer's letter and the directors' response were sent to the Advisory Committee.<sup>25</sup>

*The Environment Canada Project.* In late November, the Environmental Conservation/Ecosystem Conservation/Evaluation & Interpretation (formerly the first Conservation & Protection/Ecosystem Sciences/Eco-Health) environmental quality guidelines specialist sent her comments on Draft 2 of the Environment Canada Project report (discussed below).

Environment's November 1993 Environmental Consultations Calendar included the "Environmental Priority Setting Project." It was described as "development of a generic, ecosystem based methodology to be applied by federal decision-makers in defining and ranking environmental issues (priority setting)." Its status included "A national joint [Environment-Canadian Petroleum Products Institute] workshop expected in January, 1994 to review respective methodologies." (The Calendar or an excerpt from it was not in the Environment Canada Project file.)

The preface of the Calendar stated:

This document was developed during a period of transition for the government. A new government and Minister may influence the direction, timing and importance of certain initiatives as new priorities are identified. The... Calendar does not reflect those decisions and is being published now to ensure that information is disseminated in a timely fashion.<sup>26</sup>

*The Environment Canada and Canadian Petroleum Products Institute projects.* At the beginning of December, Environment-Advisory Committee on Environmental Protection Priority Setting was on the agenda of the Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting in late January as a follow-up. The Conservation & Protection/Environmental Protection director general was to present "a planning and priority setting process developed for [the Advisory Committee]." By mid-December, the item was revised to Environment-Canadian Petroleum Products Institute Priority Setting.<sup>27</sup>

*The Environment Canada Project.* By mid-December, four sets of comments on Draft 2 of the Environment Canada Project report had been received. The deadline was the beginning of December. Only one set, from the Environmental Conservation//Ecosystem Conservation/Evaluation & Interpretation environmental quality guidelines specialist, was to be included in the Environment Canada Project file. She wrote the Environment Canada Project manager in late November:

I have reviewed the... document and made specific comments within it. The following are general comments...

- The document still lacks in clarity. Awkward wording in many sections makes it difficult to follow the logic of the method.
- Use precise language. The overuse of words such as "possible" and "potential" weakens the presentation. A word such as "proposed" is much more effective.
- The discussion of tests for "emerging issues"... is not clear....

I do not have any major concerns with the method... There is, however, a real need for an editor to review this document. Although it is somewhat better than the previous draft it still needs work. Because this is a new initiative it is crucial that the ideas be communicated clearly and succinctly.

In mid-December, the status of the Project included preparing and publishing Draft 3 by early January 1994, and the Environmental Protection/Response Assessment senior advisor (currently on holiday) and Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis ecological risk analyst revising the Case Studies Workbook. It was to be formally issued with Draft 3.<sup>28</sup>

*The Environment Canada Integration and Environment Canada projects.* The Environment Canada Project manager left Environment under early retirement provisions to work for the Major Industrial Accidents Council as a director in late December. The Conservation & Protection/Ecosystem Sciences director general, now the Environmental Protection/Enforcement & Compliance director general, was no longer involved in the Environment Canada Project.<sup>29</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* The day before the Environment Canada Project manager left Environment, he updated the Core Director Working Group on the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects. He wrote them, "A considerable time has passed since I last sent you a memorandum on

the status of the Priority Setting Project and I thought it especially necessary to write... now as a number of structural and organizational changes have been made within [Environment]."

Regarding the changes, the manager wrote:

Responsibility for the project has changed... to [the Environmental Protection/Response Assessment director general]... I am leaving the department tomorrow... [The Major Industrial Accidents Council] may be assuming some responsibility for the development and finalization of the Methodology... [The former Environment Canada Project coordinator] and his staff are mostly moving to report directly to [the director general].

(Back in January 1993, one of the options for Phase 2 of the Environment Canada Project was to ask the Council to lead a wider consultation.)

Regarding the status of the projects, the manager wrote:

...I am not expecting many more comments [on Draft 2 of the Environment Canada Project report]....

We are committed, I think to combining Draft 3 and the [Canadian Petroleum Products Institute] methodology into a second, single (but parallel document to Draft 3) again,... sometime in January.

There is consideration being given to positioning the Priority Setting Methodology within an overall departmental decision-making process, but work on that is not necessarily underway.

The thought of a combined [Canadian Petroleum Products Institute-Environment] national workshop in January now seems to be off, there just is not time to do so, but it could take place later.

As soon as things become more definite, I will write again.... Thanks for the pleasure of working with you on this task... I... am very much committed to it and want to see it through.

The manager also wrote on the distribution list, "I suspect some of you have changed too!"<sup>30</sup>

*The Environment Canada and Canadian Petroleum Products Institute projects.* By now, the Environment Canada and Canadian Petroleum Products Institute projects had been "exposed to... some individual members of the Friday Club." Progress reports "would be expected" at the Advisory Committee on Environmental Protection meeting at the beginning of February, and the "[Canadian Petroleum Products Institute] Advisory Committee - Petroleum Products Industry Advisory Committee" (the Petroleum Products Consultative Mechanism) meeting in late February.<sup>31</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* **The Environment Canada Project manager, in collaboration with the Canadian Petroleum Products Institute Project contact, drafted a second revised plan for the Environment Canada Project, i.e., a nine-page paper on "priority setting," for the Environmental Protection/Response Assessment director general. They updated her on the Environment Canada and Canadian Petroleum Products Institute projects, including the Canadian Petroleum Products Institute Workshop, and advised her to re-establish the Environment Canada Project, and to establish the Environment Canada-Canadian Petroleum Products Institute Project as priorities, as shown below by excerpts from the plan. Also shown, they questioned whether the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established.**

Regarding background, the manager and contact wrote, "All stakeholders are concerned that the provinces should be part of the process, should accept its key elements and potentially use the system with the goal of determining a consistent and harmonized federal and provincial set of priorities."

Regarding analysis of project endpoints and uses, the manager and contact wrote:

The conceptual endpoint of the two projects when combined would be

- the preparation of a multi-sector, multi-pollutant/activity matrix...; and
- arrive at an overall ranking of priority issues (pollutants and activities) and actions....

While such a multi-variate optimization scheme is possible mathematically,

- the lack of accurate and reliable data (including perhaps the most difficult of all - the valuations of benefit) to perform it, and
- the extensive existence of non-quantifiable factors suggest that at best, all that can be delivered to decision-makers is a relatively coarse grid of data that might be of benefit in the decision-making process, but it will not be of a deterministic quality.

Regarding established and relevant future dates, the manager and contact wrote:

"In view of the... external meetings, a meeting of the Environment... Directors General Steering Committee should take place in the second week of January to confirm positions and presentations to be made." They also wrote:

[The Institute] would like to ensure that [the Canadian Council of Ministers of the Environment/Environmental Protection Committee]: buys into the need for the priority setting process and its key elements; agrees that a national list of priority issues is identified as requested by [the Advisory Committee on Environmental Protection]; and that they contribute to the development of a mechanism to do so.

Regarding likely Environment and Institute needs, products: Firm Environment needs included "develop for consideration, a draft proposal for the application and use of the Environment Canada framework and methodology within Environment..., including linkages to the Strategic Options... Process." Firm joint Environment-Institute needs included "the Pilot Strategic Options [Project] for the Petroleum Refining Industry.... ...Data for all 7 steps of the [Canadian Petroleum Products Institute] methodology is required but only for those issues relevant to the petroleum products sector." Regarding likely Environment and Institute needs, process and partnerships: "Both Environment... and [the Institute] need to ensure the greatest possible input and advice from stakeholders, and their support and confidence in the methodology. These include:... the provinces;... [environmental groups]; and... other industrial sectors."

Regarding Environment and Institute partnerships in meeting the product needs, the manager and contact wrote:

Environment... may be able to use contractors... The contractors may also partially assist [the Institute]... Some activities though, have to be carried out almost entirely within the Department as it is the major relevant source of expertise and data, i.e. case book development. Other activities must be carried out by [the Institute] alone or in partnership with Environment..., i.e. case book data for the options analysis steps....

...It is also considered that every effort will be made to expand the range of stakeholders who are participating in the process, and in particular, that:

- [the Institute] and Environment... will endeavour to reach the industrial (pollutant related) sectors;
- Environment... and other federal departments will endeavour to reach other (activity related) industrial sectors;
- [the Institute] and other sectors will endeavour to reach the provinces although Environment... will continue to have relationships in this matter through... [the Environmental Protection Committee]; and
- both parties will endeavour to reach the [environmental group] community.

"The interest of the [Council/Strategic Planning Committee] should also be raised.... because it may relate to the harmonization question."

Regarding time frame, the manager and contact suggested:

[mid-January]

- completion of Draft 3 of the [Environment Canada] Methodology (including review by the [Director General] Steering Committee)
- completion of the [Environment Canada] Case Book... for (10) issues
- draft report on the... place of [Environment Canada] Methodology in the... Strategic Options Framework...

- Draft 1 of the Integrated [Canadian Petroleum Products Institute-Environment Canada] Methodology...
  - Draft 2 of the Integrated [Canadian Petroleum Products Institute-Environment Canada] Case Book for 5 issues... at least for steps 1 to 4
- [end of March]
- revision of Draft 3 of the [Environment Canada] Methodology... and publication...
  - completion and validation through expert panels of the [Environment Canada] Case Book... for 10 issues...
  - Report on the place of [Environment Canada] Methodology in... Strategic Options Framework...
  - Draft 2 of the Integrated [Canadian Petroleum Products Institute-Environment Canada] Methodology...
  - Draft 2 of the Integrated [Canadian Petroleum Products Institute-Environment Canada] Case Book...
- [mid-June, three days]
- National Workshop on Environmental Issue Ranking and Priority Setting
- To be scheduled:
- ...Steering Committee meeting...
  - [assistant deputy minister] briefings for... [the Environmental Protection Committee], [Advisory Committee on Environmental Protection] and [Petroleum Products Industry Advisory Committee]
  - discussions with [other federal departments], [environmental groups] and provinces as required

(In contrast to the early November revised plan, there were now to be expert panels, not a workshop; and 10 Environment Canada and five Environment Canada-Canadian Petroleum Products Institute issues, not 15 Environment Canada ones.)

After the Environment Canada Project manager left Environment, the Environmental Protection/Intergovernmental Harmonization (formerly the Conservation & Protection/Environmental Protection/Regulatory Affairs) officer sent the draft agenda for the late January Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting to the manager (and others) and wrote them:

As usual, short briefing notes and/or speaking notes are required for [the Environmental Protection/Pollution Prevention, formerly Conservation & Protection/Environmental Protection, director general's] use... explaining the background, issue and recommended federal position.

The notes were due by mid-January. Then a three-hour briefing session was to be held.

**The Response Assessment director general sent the second revised Project plan to the Environmental Protection assistant deputy minister, and advised him to re-establish the Environment Canada Project, and establish the Environment Canada-Canadian Petroleum Products Institute Project as priorities,**



**as shown below by excerpts from an Environment Canada Project manager's suggested memo. Also shown, she questioned whether the Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established.**

The director general wrote the assistant deputy minister:

I have attached a lengthy but comprehensive paper on the status of the priority setting project and where we go from here...

Basically... four streams of work needed [sic] to be accomplished:

1. ...Completion of the [Environment Canada] Framework and its integration with [the Canadian Petroleum Products Institute's], which... are considered as two separate projects for the near future.
2. ...Collection and validation of sufficient data to validate the two... products..., some of the data in the data sets needed... are the same, but the sets are... different in scope and depth.
3. ...[Environmental groups] have challenged the Department to place the priority setting methodology in the departmental decision-making process, which is the Strategic Options... Process.
4. ...[The Advisory Committee on Environmental Protection] challenged the Department to produce a comprehensive list of prioritized environmental issues... (...September 1994).

I have particular concerns over the last stream of work, and even if the Department should accept that challenge, it will require ideally, provincial consensus and support, as well it assumes that the methodology for doing so is finished and that the data is at hand.

In respect to Stream 1, I believe that we can contract [the Major Industrial Accidents Council] to lead the completion of the two projects, and we should have final documents by the end of March. [The Major Industrial Accidents Council] would... assist us to produce the materials to brief [the Canadian Council of Ministers of the Environment/Environmental Protection Committee], [Advisory Committee on Environmental Protection] and [Petroleum Products Industry Advisory Committee] as necessary. ...It may be appropriate to hold a National Workshop on Priority Setting in June 1994, and [the Major Industrial Accidents Council] could organize that event and... others that may be necessary...

In respect to Stream 2, we will handle this in house using the remaining members of the Priority Setting Team... Most of the data is held in the Department anyway, and that which is necessary from industry, we will (endeavour to) collect through [the Institute] and other Sectoral [non-government organizations] if they have it (one of my concerns about the [Canadian Petroleum Products Institute] methodology is that the data necessary to complete... steps 5, 6 and 7 may not be readily available or be released from industry sources).

In respect to Stream 3, we will prepare this in house and develop documents proposing how priority setting can fit into the overall Strategic Options... Process being developed under the Pilot Strategic Options [Project] for the Petroleum Refining Industry.

I propose to ask [the Major Industrial Accidents Council] to submit a proposal... for their involvement in Stream 1 on my return from travel, and to finalize this over the XMAS period.

May we discuss this.

(The Response Assessment senior advisor thought the manager had gone directly to the assistant deputy minister with the revised Project plan.)

**The Environmental Protection assistant deputy minister re-established the Environment Canada Project (develop the Environment Canada process), and established the Environment Canada-Canadian Petroleum Products Institute Project as priorities for Environment, as shown below by excerpts from a Major Industrial Accidents Council director's draft contract and draft briefing note. Also shown, the assistant deputy minister resolved the arguments about Environment and Industry advising the Canadian Council of Ministers of the Environment to establish the Environment Canada Project because one (the Environment Canada) process should determine national environmental priorities in 1994. He decided that Environment were to advise them, but to develop *not use* the Environment Canada and Canadian Petroleum Products Institute processes.**

**The director was to be contracted to finish the Environment Canada Project report and draft the Environment Canada-Canadian Petroleum Products Institute Project report, but not to organize a National Workshop.**

[The Major Industrial Accidents Council] shall perform the following work:

- review all comments... on Draft 2 of the... framework and methodology and prepare and circulate a third draft... for review by [Environment's] stakeholders and partners;
- prepare a final document... based on comments received;
- prepare,... with staff of [the Canadian Petroleum Products Institute], the first draft of the integrated environmental priority setting methodology, and circulate it for comments to stakeholders and partners;
- prepare,... with staff of [the Institute], a subsequent (or final) draft of the integrated methodology;
- prepare briefing materials for Departmental and other staff as necessary, and make presentations as required by Environment... to stakeholders and partners on the framework and methodology;
- coordinate these activities with those of Environment... respecting the collection and assembly of data... for the development of... Case Books;
- organize, if required, a national workshop on environmental issue definition, ranking and response prioritization; and
- prepare an overall final report on the exercise

The director wrote at the end of December in a draft briefing note for the late January Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting, regarding background, "Environment... has not, at this time,

decided to accept the second [Advisory Committee on Environmental Protection] challenge of providing a full list of ranked environmental issues by the Fall of 1994." He recommended that the Environmental Protection Committee "support in principle the activities underway" and "designate staff from their respective administrations to participate actively in the further development activities," "subject to further review at the Fall meeting of the Committee of progress."

In other words, the assistant deputy minister approved the revised plan for the Environment Canada Project (develop the Environment Canada process) and Environment Canada-Canadian Petroleum Products Institute Project (develop the Environment Canada-Canadian Petroleum Products Institute process).<sup>32</sup>

### Discussion

#### The Environment Canada Project

*Re-establishing it for Environment and other federal departments.* During the third process of re-establishing the Environment Canada Project as a priority for Environment and other federal departments, the Core Project Team - including the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis economist, Industry economist, and Health/Health Protection statistician - advised the Director General Steering Committee - including the Agriculture economist and former Conservation & Protection/Policy economist - to allocate more time to this Project (equal to time to the Expanded Environment Canada-Canadian Petroleum Products Institute Project). Then the Committee - the interim decision-maker for this Project - decided to allocate some more time, so the Ecosystem Risk Analysis and Industry economists, and statistician seemed to have a minor influence on the decision, and the Agriculture and Policy economists seemed to have a major influence. Other government experts did not offer advice, so they seemed to have no influence.

In this process, dissimilar to the first process of re-establishing this Project for Environment and other federal departments but similar to the second (discussed in Chapters 4 and 5), the Ecosystem Risk Analysis and Industry economists, and statistician seemed to be asked by the Team, and to offer it to them; the Team were not asked for advice, but offered it to the Committee; the Agriculture and Policy economists seemed to be asked by the Committee (via the Agriculture and former Policy director

generals, respectively), and to offer it to them; and other government experts did not seem to be asked, or to offer. So perhaps the Ecosystem Risk Analysis and Industry economists, and statistician had only a minor influence on the decision because *although they offered advice to the Committee, they were not asked for it by them*. The Agriculture and Policy economists had a major influence because *basically they were asked by the Committee and offered it to them*. And other government experts had no influence because *either they were not asked or did not offer*. But why were the economists and statistician asked (by anyone), and why did they offer? And why were other government experts not asked, and why did they not offer? In the process to be developed and used in this Project - the Environment Canada process - government and non-government experts were to be asked by Environment.

Like government experts, the other Committee members were public servants, but unlike them, they were managers (Environment, Industry, Health Protection, and other federal department), not experts, although they had expertise, e.g., the Ecosystem Sciences, Environmental Protection, and Corporate Policy director generals in natural science, natural science, and economics, respectively. So perhaps the minor influence of the Ecosystem Risk Analysis and Industry economists, and statistician did not make a significant difference because the Committee knew more than they did about the science of deciding priorities. The major influence of the Agriculture and Policy economists did not make a significant difference because the Committee knew as much as they did about the science. And the lack of influence by other government experts did not make a significant difference because the Committee knew as much as (or more than) they did about the science. Yet, the other Team members from Environment and the International Joint Commission had expertise in sociology, economics, natural science, and engineering. Still, they and the other participants - including an Environment senior manager with expertise in engineering - did not question if this Project should be re-established, with the major exceptions of one environmental group senior representative who did not establish it or the Canadian Petroleum Products Institute and Expanded Environment Canada-Canadian Petroleum Products Institute projects, and the Environmental Law Centre staff counsel (an Advisory Committee on Environmental Protection member) who did not establish this Project. In particular, after the Memorandum of Understanding Steering Committee (the Conservation & Protection and Industry assistant deputy ministers) re-established it, the Advisory Committee established it; the Rawson Academy executive director (also a Team member) argued to

the Team to re-establish it; the Canadian Labour Congress secretary-treasurer advised the Advisory Committee to re-establish it and to establish the Legislative Framework for Pollution Prevention project. But what did other government experts know?

*Re-establishing it for Environment.* During the fifth process of re-establishing the Environment Canada Project for Environment, the Environmental Protection assistant deputy minister - the final decision-maker for this Project - decided to allocate more time to it (and resources to the Environment Canada-Canadian Petroleum Products Institute Project). Government experts did not offer advice, so they seemed to have no influence on the decision.

In this process, similar to the first through fourth processes of re-establishing this Project for Environment (discussed in Chapters 3 to 5), government experts were not asked for advice, and did not offer it. So perhaps they had no influence on the decision because *either they were not asked or did not offer*. But why were they not asked, and why did they not offer? In the process that was to be developed and used in this Project - the Environment Canada process - government and non-government experts were to be asked by Environment and other federal departments.

Like government experts, the assistant deputy minister was a public servant, but unlike them, he was a manager (Environment senior), not an expert, although he had expertise in engineering. So perhaps the lack of influence by government experts did not make a significant difference because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities. Also, the other participants - including Environment and other federal department managers with expertise in natural science, economics, and engineering - did not question if this Project should be re-established. In particular, after the Director General Steering Committee (including the Agriculture and former Conservation & Protection/Policy economists) re-established it and the Environment Canada-Canadian Petroleum Products Institute Project, and did not establish the Expanded Environment Canada-Canadian Petroleum Products Institute Project; the Environmental Protection/Response Assessment director general advised the assistant deputy minister to re-establish it and to establish the Environment Canada-Canadian Petroleum Products Institute Project. But what did government experts know?

It is important to note that some participants in the Environment Canada and other projects continued to question if experts in certain disciplines should be involved in determining environmental priorities. One environmental group senior representative questioned the Core Project Team - including the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis economist and natural scientist - if environmental impact assessors (vs ecological planners) should help decide Environment's priorities.

Generally, however, the participants all still seemed to agree that at least some experts (not environmental impact assessors) knew best about the science of deciding priorities.

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#### NOTES

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<sup>3</sup> Resource Futures facilitator, "Ranking Environmental Issues"; "ESED: Members," August 1993; Environment Canada Project coordinator to Environment Canada Project manager, memo of September 15, 1993, "Priority Setting - Budget Allotment"; "Services, Construction or Repairs Contract"; "Comparative Risk Ranking Method: Smog Case Study;" 1-5; "EC Workshop on Ranking Environmental Issues: September 10, 1993: Working Groups"; Environment Canada Project manager and Environment Canada Project coordinator, overheads for Environmental Group Workshop of September 10, 1993, "Assessment of Feasibility [sic]..."; Resource Futures facilitator to Conservation & Protection/Ecosystem Sciences/Conservation senior analyst and Environment Canada Project coordinator, memo of September 11, 1993, "Draft Report for September 10 Workshop on Priority Setting"; Resource Futures facilitator, "Draft Report on Workshop for Ranking Environmental Issues, September 10, 1993."

<sup>4</sup> Environment Canada Project manager to Conservation & Protection/Ecosystem Sciences director general, memo of September 11, 1993, "Priority Setting Exercise - ACEP and ENGO Workshop Results", copied to Core Project Team; Pembina Institute executive manager to Environment Canada Project manager, letter of September 13, 1993, "It is with..."; Conservation & Protection/Ecosystem Sciences/Conservation senior analyst to Pembina Institute executive manager, letter of September 16, 1993, "Since [the Environment Canada Project manager] was..."; Environment Canada Project coordinator to Conservation & Protection/Ecosystem Sciences/Conservation senior analyst, memo of September 15, 1993, "Comments: RFI [facilitator] Notes on September 10 ENGO Workshop," 1; Environment Canada Project coordinator to first Atmospheric Environment director, International Joint Commission senior environmental advisor, and Resource Futures facilitator, fax of September 15, 1993; Resource Futures facilitator, "Draft Report on Workshop for Ranking Environmental Issues, September 10, 1993"; Resource Futures facilitator to Environmental Group Workshop participants, memo of September 20, 1993, "As requested, a..."; Resource Futures facilitator to Environmental Group Workshop participants, memo of September 28, 1993, "Attached is a..." copied to Citizen's Environmental Alliance senior representative, Canadian Public Health Association senior representative, and Pembina Institute executive manager; Environment Canada Project manager to US Environmental Protection Agency director, letter of September 15, 1993, "US EPA's Experience with Environmental Priority Setting."

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<sup>7</sup> Heritage ecosystem manager to Environment Canada Project manager, memo of September 31, 1993, "Draft Report on Environmental Issue Ranking," copied to Heritage director and Heritage forest ecologist; first Conservation & Protection/Ecosystem Sciences/Eco-Health environmental quality guidelines specialist to Ecosystem Sciences/Conservation/Ecosystem Risk Analysis senior advisor, memo of September 14, 1993, "Environmental Issue Ranking - Review"; Conservation & Protection/Ecosystem Sciences/Strategic Planning chief to Environment Canada Project manager, memo of September 15, 1993, "Report on Environmental Issue Ranking - A Proposed Methodology for Environment Canada," 1-2; Rawson Academy executive director to Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis senior advisor, memo of September 17, 1993, "Comments On Draft," copied to Environment Canada Project manager and second Canadian Environmental Network senior representative; CanTox program manager to Environment Canada Project coordinator, letter of September 17, 1993, "[The CanTox toxicologist] and I..."; Simon Fraser University research director to Environment Canada Project manager, memo of September 17, 1993, "Thank you for..."; Corporate Policy economist to Environment Canada Project coordinator, memo of September 20, 1993, "Comments on the draft report on Environmental Issue Ranking - A Proposed Priority Setting Methodology for Environment Canada"; Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis senior advisor; Environment Canada Project coordinator to Priority Setting Team, memo of September 20, 1993, "Input to Draft Two: Environmental Issue Ranking report," 2-5; Environment Canada Project manager to Core Project Team, memo of September 20, 1993, "Revised Format for Draft 2 of the Environmental Issues Ranking Report"; "Meeting to Prepare Draft 2 of the Environmental Issue Ranking Report," September 22, 1993; "Report: Environmental Issue Ranking."

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<sup>10</sup> Conservation & Protection/Environmental Protection/Industrial Programs chief to Natural Resources representative, memo of September 28, 1993, "NAICC Meeting - Priority Setting," copied to Environment Canada Project manager, second Environmental Protection/Industrial Programs director, and third Canadian Petroleum Products Institute senior director; Conservation & Protection/Environmental Protection/Industrial Programs chief, information note of NAICC meeting of October 13, 1993, "DOE has been...", September 28, 1993; Conservation & Protection/Environmental Protection/Industrial Programs chief, note for annotated agenda of NAICC meeting of October 13, 1993, "This agenda item...", September 28, 1993.

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<sup>12</sup> Conservation & Protection assistant deputy minister to National Research Council vice-president, letter of October 1, 1993, "I am inviting..." 1-2.

<sup>13</sup> Conservation & Protection/Ecosystem Sciences director general to Director General Steering Committee, memo of October 15, 1993, 2; Conservation & Protection/Environmental Protection/Industrial Programs chief, information note of National Air Issues Coordinating Committee meeting of October 13, 1993; Major Industrial Accidents Council director, 2; Canadian Petroleum Products Institute Project contact, "Participants in Validation Exercise of Priority Setting Methodology," October 8, 1993; Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis socioeconomic risk analyst to Environment Canada Project coordinator, memo, "I don't know..."; Canadian Petroleum Products Institute Project contact, "Participants in Validation Exercise of Priority Setting Methodology"; Environmental Priorities Working Group co-chairs to Colleague, letter of October 13, 1993, "You are invited..."

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<sup>25</sup> Conservation & Protection/Environmental Protection/Regulatory Affairs director and Industry director to Canadian Labour Congress executive vice-president, letter of November 12, 1993, "Thank you for...", copied to Memorandum of Understanding Steering Committee, Pollution Probe executive director, Citizen's Environmental Alliance senior representative, and first Canadian Chemical Producers Association senior director, 1-3; Canadian Labour Congress secretary-treasurer to Resource Futures representative; Conservation & Protection/Environmental Protection/Regulatory Affairs director and Industry director to Canadian Labour Congress executive vice-president, 1-3.

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<sup>29</sup> Environment Canada Project manager to Core Director Working Group, 1; Environmental Protection/Response Assessment senior advisor, notes of December 23, 1993, "[Major Industrial Accidents Council director]..."

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**PART III**  
**SCIENCE-BASED DECISION-MAKING IN THE DETERMINATION OF**  
**ENVIRONMENTAL PRIORITIES**

**CHAPTER 7**  
**IMPLEMENTATION OF THE REVISED ENVIRONMENT CANADA PROJECT PLAN**

In this chapter, I discuss the influence that government experts had in the *fourth* process of re-establishing the Environment Canada Project as a priority for Environment and other federal departments, and the *sixth* process of re-establishing it as a priority for Environment. The fourth process began in December 1993 and ended in January 1994 when the Director General Steering Committee approved Draft 3 of the Project report. And the sixth process began in January 1994 and ended in February 1994 when the Environmental Protection assistant deputy minister re-approved the revised Project plan.

During this one and a half month period, several other processes of determining environmental priorities occurred. The process of not establishing the Expanded Environment Canada-Canadian Petroleum Products Institute Project for Environment and other federal departments ended. I also discuss in this chapter the influence that government experts had in this process.

I show that government experts seemed to have no influence on the decision by the Director General Steering Committee to re-establish the Environment Canada Project for Environment and other federal departments. I suggest that they had no influence because either they were not asked for advice or did not offer it. I also suggest that their lack of influence did not make a significant difference to determining "good" environmental priorities because the Committee knew as much as (or more than) they did about the science of deciding priorities (and the administration and policy of it).

Secondly, I show that the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis economist, Industry economist, and Health/Health Protection statistician seemed to have no influence on the decision by the Committee not to establish the Expanded Environment Canada-Canadian Petroleum Products Institute Project for Environment and other federal departments. The statistician and Conservation & Protection/Environmental Protection/Industrial Programs engineer seemed to have no influence. And other government experts seemed to have no influence. I suggest that the economists and statistician had no influence because

although they offered advice to the Committee, they were not asked for it by them. I also suggest that the lack of influence by the economists, statistician, and engineer did not make a significant difference because the Committee knew more than they did about the science of deciding priorities.

Finally, I show that government experts seemed to have no influence on the decision by the Environmental Protection assistant deputy minister to re-establish the Environment Canada Project for Environment. I suggest that they had no influence because they were not asked for advice and did not offer it. I also suggest that their lack of influence did not make a significant difference because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities.

#### Director General Steering Committee Approval of the Report (Draft 3)

In this section, the fourth process of re-establishing the Environment Canada Project as a priority for Environment and other federal departments began and ended. Several other processes of determining environmental priorities intersected with this one, including establishing and re-establishing the Environment Canada, Expanded Environment Canada-Canadian Petroleum Products Institute, and Environment Canada-Canadian Petroleum Products Institute projects for Environment, other federal departments, and the Canadian Petroleum Products Institute.

Specifically, the Environmental Protection/Response Assessment senior advisor advised the Response Assessment director general to re-establish the Environment Canada Project. And the senior advisor advised the director general again. Then the director general seemed to re-establish it for Environment.

The Institute advised Environment to establish the Expanded Environment Canada-Canadian Petroleum Products Institute Project, and that Industry and Health should also. And the Major Industrial Accidents Council director advised the Director General Steering Committee to re-establish the Environment Canada Project; and Environment director generals to re-establish the Environment Canada-Canadian Petroleum Products Institute Project, and other federal department director generals to establish it. Then the Committee re-established and established the projects for Environment and other federal departments.

The senior advisor advised that Environment should re-establish the Environment Canada Project. Then the Committee did not establish the Expanded

Environment Canada-Canadian Petroleum Products Institute Project for Environment and other federal departments, and advised that the Institute should be advised to re-establish the Environment Canada-Canadian Petroleum Products Institute Project.

During these processes of determining environmental priorities, the Committee resolved the arguments about establishing the Expanded Environment Canada-Canadian Petroleum Products Institute Project because one (the Expanded Environment Canada-Canadian Petroleum Products Institute) process should determine national environmental priorities, and other sectors and provinces should decide them. They did not establish the Project for Environment and other federal departments; and decided that other sectors and provinces were not to decide the priorities in the Expanded Environment Canada-Canadian Petroleum Products Institute process, and one process could not determine the priorities. The other arguments were not resolved during this period, December 1993 to January 1994.

#### Evidence

In mid-December 1993, the Environment Canada Project continued as Environmental Protection started to implement the revised Project plan, led by the Major Industrial Accidents Council.

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* In late December, the Environmental Protection/Response Assessment senior advisor wrote in his notes:

[Major Industrial Accidents Council director] role

- method
  - draft #3 by [early January]...
  - produce an integrated version of [Environment Canada] + [Canadian Petroleum Products Institute] methods of issue ranking
- briefing notes
  - ...[Director General] Steering Committee
- organize a National Workshop
  - focus is on validation of the method
  - reproducibility of results

Our role

- Casebook
  - issue profiles necessary to validate Integrated method

By now, the Response Assessment director general asked the Major Industrial Accidents Council director to draft a briefing note for the late January Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting. The Environmental Protection/Intergovernmental Harmonization officer sent the draft meeting agenda and example notes to the director.

By the end of December, the director drafted the Environmental Protection Committee briefing note called Environment-Canadian Petroleum Products Institute Priority Setting. Regarding the objective, he wrote, "To provide an opportunity for the Committee to learn more of the Priority Setting Exercise being undertaken in collaboration with the... Institute." The director wrote on the note, "Spin: - Alta [Environment] Council... Ont.... You're aware... now can you engage in it... to make it useful/rational... consistent with any other existing approach... compatibility... predictable/transparent process."

The Mining Association asked that a presentation on "priority setting" be made to their Environment Committee at their meeting in early February. The director general asked the director to make it and he agreed.<sup>1</sup>

*The Environment Canada Project.* By now, comments on Draft 2 of the Project report were received from two more reviewers, for a total of six sets. (Draft 2 was circulated to about 100 recipients.)

The Major Industrial Accidents Council director was assembling and collating the comments. He was trying to obtain the distribution list so he could contact recipients for comments, but the former Conservation & Protection/Ecosystem Sciences/Conservation secretary was on leave and the list could not be found.

There were relatively few comments received... which came mainly from the departmental and industrial stakeholders, with none from [environmental groups].

The comments related more to the details of the text describing the methodology and not to the overall methodology and its components.... Although no specific comments for alternative decision-making frameworks were received, there is still interest in resolving how and when the methodology might be used within the Department and what clustering system might be proposed.<sup>2</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* The Major Industrial Accidents Council director sent the draft Canadian Council of Ministers of the Environment/Environmental Protection Committee

briefing note to the Environmental Protection/Response Assessment director general (required by the Committee Secretariat by early January) and updated her on the Environment Canada Project. He wrote:

You also suggested we should get together between Xmas and New Years to discuss the contract with [the Major Industrial Accidents Council] - I await your call.... We also have to decide whether you want to proceed with a [Director General] Steering Committee Meeting [in mid-January].

The director drafted an information note for the beginning of February Advisory Committee on Environmental Protection meeting. Regarding current Canadian Petroleum Products Institute-Environment plans, he wrote, "[Environment] has not, at this time, decided to accept the second [Committee] challenge of providing a full list of ranked environmental issues by the Fall of 1994." The director sent the note to the Response Assessment/Stakeholder Relations (formerly Conservation & Protection/Environmental Protection/Regulatory Affairs) advisor for review.

By early January, the director had sent the former Conservation & Protection/Ecosystem Sciences/Conservation overheads for the standard presentation on "priority setting" to the former first Conservation & Protection/Policy analyst, in case the Environmental Protection/Program Integration director general (formerly the Conservation & Protection/Environmental Protection/Regulatory Affairs director) had to brief the assistant deputy ministers (the Memorandum of Understanding Steering Committee). The analyst was to return them to the director for updating. The director was working on Draft 3 of the Environment Canada Project report and the integration of the Environment Canada-Canadian Petroleum Products Institute methodologies. He expected to have them ready early the following week.

The director updated the Response Assessment director general on the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects. He wrote her, "Assuming that my attendance will not be required at the [Advisory Committee on Environmental Protection] meeting.... Would you confirm... that you still would like me to go to the [Mining Association/Environment Committee] meeting." (The meetings were to be held on the same day.) The director also wrote:

I have not had any communication from you as to the [Director General] Steering Committee meeting... but feel at this stage it may no longer be possible, even if it is necessary - perhaps it would be sufficient to send to them the [Advisory Committee] Information Note.

The Response Assessment director general told the director that the Director General Steering Committee meeting was already scheduled for mid-January, and asked him to meet with her a few days before then. She also asked the director to draft terms of reference for the Major Industrial Accidents Council contract. The director drafted an agenda for the director general meeting and terms of reference (four pages), and estimated the costs of finalizing the methodologies and organizing and running a national workshop. The director sent the terms of reference to the director general and wrote her, "I have split the activity... on the grounds that it might be best to separate the two, and in any case [the Canadian Petroleum Products Institute] or others ([Canadian Council of Ministers of the Environment]?) might want to co-fund (co-host) a workshop."

The Resource Futures facilitator (the Advisory Committee on Environmental Protection Secretariat) sent to the director the revised information note (on "Priority Setting") to the Committee and wrote him, "As I mentioned, it's a good example of how [the Committee] and government work together and will be in our discussions about [Committee] effectiveness." She congratulated the director on his new appointment and also wrote, "I'm pleased to hear there will be continuity in the [Environment] methodology work... I'd be very interested in working with you again." (The director's draft information note was split into an information note for the Advisory Committee and a briefing note for the Memorandum of Understanding Steering Committee.)

A few days later, the draft Canadian Council of Ministers of the Environment/Environmental Protection Committee briefing note was revised. The objective was now "to develop an understanding of the priority setting methodologies that are under development in order to ensure that the methodologies are compatible with issue identification and ranking processes used in other organizations and/or jurisdictions."

The background included:

Environment... is leading the development of an Environmental Issues Identification and Ranking methodology that... could be used by other organizations and/or jurisdictions.... The [Canadian Petroleum Products Institute] Priority Setting methodology.... should be a useful tool to guide the decision-making within the petroleum products sector.

The status included:

...A third draft of the Environmental Issues Identification and Ranking methodology will be distributed... Provided there is adequate interest in seeking a national



consensus on this methodology, a workshop could be held in June to finalize the document....

Environment... and [the Institute] have been discussing the draft methodologies with... industry, provincial governments and the environmental community to better understand what mechanisms are already being used... to set priorities and to what degree the draft methodologies are compatible and appropriate for use by other organizations and/or jurisdictions as well as to gauge the level of interest in working cooperatively to further develop the methodologies.

The recommendations were that the Environmental Protection Committee "support in principle the ranking of environmental issues and prioritization of actions as an important element in decision-making" and "nominate staff from their respective administrations to participate actively in the development of the draft methodologies."

The note and executive summary from Draft 3 of the Environment Canada Project report were sent to the Environmental Protection Committee as background to their agenda item on Environment-Institute Priority Setting. The item on the annotated agenda included:

**Objective**

Receive a presentation on a planning and priority-setting process developed by the [Institute] and under consideration by the federal Advisory Committee on Environmental Protection....

**Issue for discussion**

[The Canadian Council of Ministers of the Environment] has established a priority-setting and issue-ranking process for its use, which was developed under the Strategic Planning Committee. The [Canadian Petroleum Products Institute] process is more detailed and complex, and also might be of use to individual jurisdictions. Discussion of the [Canadian Petroleum Products Institute] methodology might be a natural fit with the [Strategic Planning Committee] mandate....

**Recommendation**

[The Environmental Protection Committee] should consider involving [the Strategic Planning Committee] in discussion of the [Canadian Petroleum Products Institute] priority-setting and issue-ranking methodology.<sup>3</sup>

*The Canadian Petroleum Products Institute Project.* By mid-January, the Canadian Petroleum Products Institute Project contact drafted a presentation on the Canadian Petroleum Products Institute Project for the Canadian Council of Ministers of the Environment's mid-January Strategic Planning Committee meeting or late January Environmental Protection Committee meeting (to be made by the Environmental Protection/Intergovernmental Harmonization, formerly Atmospheric Sciences, director general; or second Petro-Canada senior manager; respectively), early February Mining

Association meeting (to be made by the contact and Major Industrial Accidents Council director), and "others - provinces, associations etc." She wrote (her notes, written on the outline, are in italics):

History....

- consultations - [Advisory Committee on Environmental Protection], [Canadian Environmental Protection Act/Federal Provincial Advisory Committee], [National Air Issues Coordinating Committee], etc. (Rxn +ve, 1 approach)
- harmonization need (Environmental Protection Regulatory Review; Sustainable Energy & Mineral Development, House of Commons Standing Committee on Energy Mines & Resources; [Canadian Council of Ministers of the Environment])

Why Prioritize

- heavy agenda
- finite resources
- direct/focus action for greatest societal benefits
- reduce delaying tactics....

Principles....

- common language/approach for comparison
- predictability, durability of priorities....

Summary

- prioritization [sic]
  - = greater certainty (national list of priorities plus regional ones) so increased commitment to action
  - = increased efficiency
- [Canadian Council of Ministers of the Environment] leadership need for harmonizing approaches [*facilitating [federal/provincial] rationalization of envtl actions*] (implying use of Harmonization Committee of Strategic Planning Committee of [Council] rather than [Environmental Protection Committee])
- Willing to present to [deputy ministers] [*Request opportunity to present?*] [*Initial [Canadian Petroleum Products Institute] work a start for comparison to provincial methodologies*] [*? Role [Canadian Chemical Producers Association], rep*] [*? Role fed govt] - support during & after present*]

The contact sent the outline to the Environmental Protection/Response Assessment director general in an urgent memo and wrote her, "For use in preparation of your [Environmental Protection Committee] note."<sup>4</sup>

*The Environment Canada-Canadian Petroleum Products Institute Project. The Major Industrial Accidents Council director finished Draft 1 of the Environment Canada-Canadian Petroleum Products Institute Project report. The report, now called Environmental Priority Setting: A Proposed Methodology, was 36 pages long, not*

including the appendices (seven pages). Conclusions/next steps, similar to the Canadian Petroleum Products Institute Project report, included:

At this stage of development of the integrated model (as well as those of the others), the next steps would be to:

- obtain wider review, assessment and comment by the stakeholders and partners, and
- develop case studies of data and information for use in the testing and calibration of the model.<sup>5</sup>

*The Environment Canada Project.* **By the end of January, the Major Industrial Accidents Council director finished Draft 3 of the Environment Canada Project report.** Modifications were made largely for the purposes of clarification. Emphasis was placed on confirming and clarifying the purpose of the methodology (to "set Environment's priorities"), potentially using it within the developing Strategic Options process, and proposing a clustering method for it.

The proposal now made... for clustering is to:

- group issues by their ecological effect scores into three sets - high, medium and low - based on an (arbitrary) division, at this time, of: less than 30, 31 to 90 and 91 or greater; and to
- treat the health and socio-economic scores as flags (although grouped in the same manner);

while permitting through the interdepartmental consultation process that medium and low scoring ecological issues flagged as having high or medium health or socio-economic effects be raised to a higher cluster level based on interventions from the stakeholders concerned with health or socio-economic effects.

Draft 3 was 47 pages long, not including the annexes (46 pages). In the annex including the Environmental Group Workshop report, the environmental groups' affiliations were added, and "buy" was changed to "accept."

General conclusions, basically the same as Draft 2, included:

...An expanding number and range of organizations have considered the task being undertaken by Environment... The response... has, without exception, been supportive of the need, and variously supportive (cautious to strongly positive) of the framework and methodology being further refined and the direction and process of development.

Hesitation concerning its potential validity remains reflected in the two oft-repeated questions, which, at this point, still cannot be answered:

- How will the issues actually be ranked or clustered... (i.e., will my pet issue survive as an important issue)?
- How will this be used within the Department (or by others who might find it attractive)?

The broad conclusion remains: that there is a need for such a methodology and that this methodology is likely to be as good as any other that might be developed, and certainly more comprehensive and fair than any currently known.

Further nothing has been discovered to date that suggests that the development of the methodology should not be pursued as being impossible or drastically re-directed.

Specific conclusions for further development of the methodology, the same as Draft 2, included:

- Ecosystem sustainability must be and remain the primary focus... tempered and supported by human health and socio-economic concerns (in that order).
- The risk ranking methodology should ensure that no environmental issue is "dropped off the table"; rather it should be used to direct all issues to the "right" table.
- The [stress-exposure-response-adapt] framework appears to provide an appropriate framework for defining environmental issues within the concept of a cascading series of issues and sub-issues from the global/national level down to the regional and local levels and can adequately handle stresses and responses from the generic to the specific.
- The aspects of issue characterization for scoring and flagging purposes appear to be comprehensive, non-overlapping and appropriate to the decision-makers' needs, although further development and refinement could be pursued.
- Development and validation of additional and existing case studies remain essential.

Other specific conclusions concerning the process to be followed, basically the same as Draft 2, included:

- The Environment Canada methodology needs to be integrated into the [Canadian Petroleum Products Institute] methodology to handle the... original questions:
  - What is an environmental issue?
  - How would you rank one such issue in comparison with the others?
  - How do you respond to the prioritized [sic] environmental issues?
  - How do you obtain the maximum environmental benefit (from all response or control strategies for all issues) for any given level of investment?

This would essentially mean expanding [Canadian Petroleum Products Institute] steps 3 to 7 to cover all activities (as well as all pollutants) contributing to environmental issues and to all potential sectors.

...This activity is.... underway and will be issued as a companion document, along with the Case Studies book.
- While [the Advisory Committee on Environmental Protection] challenged the Department to develop and report on a fully prioritized [sic] list of environmental issues... [by September 1994], the Department has agreed to ensure that the pace of development of the methodology... be adjusted to allow adequate opportunity for consultation, consideration, consolidation, and calibration...
- The process of development should be open to a broader range of stakeholders and partners including [environmental groups].

The director recommended:

- ...The Third Draft... should be circulated widely for comment.
- The Case Book... should be circulated as soon as possible.
- Support should be given to groups of recipients to conduct small workshops for the purposes of understanding and commenting on the framework and methodology.
- The integrated [Canadian Petroleum Products Institute-Environment Canada] methodology should be similarly circulated, with appropriate case studies and small... workshops supported as may be proposed....
- Pending... consideration of comments from the immediate next phase, a national workshop on the subject be held in the... fall of 1994.<sup>6</sup>

*The Environment (and Environment Canada-Canadian Petroleum Products Institute) projects.* **The Environmental Protection/Response Assessment senior advisor advised the Response Assessment director general to re-establish the Environment Canada Project as a priority, as shown below by excerpts from his notes (three pages).** Excerpts from the notes he wrote after he met with the director general are in italics.

[Director General Steering Committee] meeting....

- my role *[report - [Canadian Petroleum Products Institute]... Casebook]*

Use of [Priority Setting] method

- concerns about report
  - how savings are made
  - [life cycle approach] - prevention
  - perceived fairness - public input
  - uncertainty - consequence of error
  - innovation & economic incentives
  - use of ecosystem perspective
  - sustainability of goal
- use in multi-stakeholder decisions

*[[Environment Canada-Canadian Petroleum Products Institute] integration... Team approach... editor/author... sci/prof buyin... also [environmental group] concerns]*

- approach
  - brainstorming session
  - discussion paper - solicit comment
  - decision doc.
    - amend method
    - trial run

[United States Environmental Protection Agency] meeting [end of January]....

My role...

- assignment - expectations....
  - title...
  - \$...
  - access to info.

[Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis senior advisor]

- signoff of agreement
- extension

[Response Assessment/Economic Analysis]

- *director's position - option from outside nil*
  - *surplus EX-1 no one with strong background*
  - *self-directed team...*
  - *reason pilot new mgmt style*
  - *"workshop" too many layers*

**The senior advisor informed the director general about the Agency meeting on "priority setting, goals and indicators," and advised her to re-establish the Environment Canada Project as a priority, as shown below by excerpts from his briefing note. Also shown by an excerpt from a director general's note, she seemed to re-establish it for Environment.**

Regarding background, the senior advisor wrote that since 1987 "priority setting projects" had been done for the United States as a whole, all of the Agency's regional offices, over 25 states, by ten major cities, and several tribes. (Twenty-two overheads summarizing the Agency projects were attached to the note.) Regarding current status, he wrote:

More than 75 managers will be meeting... to review their experience with priority setting and to discuss its role in environmental planning and decision-making. The meeting will focus on how to stimulate public involvement in the process and the use of priority setting in strategic planning and budgetary decisions. The plenary session on goal setting... will be led by the [Agency's] Administrator... and will kick-off a national discussion of goals that will take place throughout the United States during 1994. The second phase of the meeting... will focus on the selection of a core set of environmental management indicators.

The senior advisor recommended, "[Response Assessment] should attend at least initial phase of the meeting."

The director general wrote on the note, "will require international travel." Written on the note in early February was "addition Program Travel - Response Assessment."<sup>7</sup>

*The Expanded Environment Canada-Canadian Petroleum Products Institute Project.* **By now, the Canadian Petroleum Products Institute advised Environment to establish the Expanded Environment Canada-Canadian Petroleum Products Institute Project as a priority, and that Industry and Health should also, as shown below by excerpts from the Environmental Protection/Response Assessment**

**senior advisor's speaking notes (for the mid-January Director General Steering Committee meeting).**

The Institute's position included:

- want [Environment] to pickup [Advisory Committee on Environmental Protection] challenges
  - develop a common approach to
    - ranking issues...
    - ranking actions...
  - a national set of priorities
- [Environment] needs to involve others in developing priority setting approach
  - provinces (min. Ont., Alta., B.C. & Que.) - use [Canadian Council of Ministers of the Environment]
  - other industrial sectors - use [Advisory Committee] & Friday Club
  - [environmental groups]
- want one approach for Canada - not eleven different approaches

The Institute's suggested approach included:

- Issue scan - get stakeholders input (eg. [Advisory Committee] members)
  - draft list - ok'd by decision table (eg. [Director General] Steering Committee) - May
  - issue profiles prepared by scientific panels - June
  - circulated for review by stakeholders - August
  - [Advisory Committee] review and approval - September mtg.
- Issue ranking - develop a common approach by March
  - task group - [Environment/Industry/Health] + [the Institute]
    - straightforward task to develop proposal
    - convene meeting on best approach
    - compare results - validate approach on cases using success criteria
- Ranking actions - [Environment] & [Industry] led - report back by March
  - task force - faced with significant challenges
  - need way of finding least cost path - ranking action plans for multi-stakeholder decision-making
- Multi-stakeholder priority setting workshop
  - by [November]<sup>8</sup>

*The Environment Canada Project.* The Environmental Protection/Response Assessment senior advisor drafted a briefing note on the Canadian Petroleum Products Institute Project, including the Canadian Petroleum Products Institute Workshop. He wrote, regarding background, "[The Institute] recently hosted a successful workshop... to which it invited its member companies, representatives of Environment..., and other government departments such as Health, Industry, Natural Resources, and Finance." The senior advisor did not mention the environmental group representative who had attended (Society to Overcome Pollution).

By now, Draft 1 of the (Environment Canada) Case Studies Workbook had been circulated for review. The final report was to be completed by the end of January. The Response Assessment (formerly Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis) ecological risk analyst drafted a briefing note on the workbook and wrote, "Subject matter experts have been approached for their input."

The draft agenda for the mid-January Director General Steering Committee meeting, the briefing notes on the Canadian Petroleum Products Institute Project and Case Studies Workbook, the Canadian Council of Ministers of the Environment/Environmental Protection Committee briefing note, and the Advisory Committee on Environmental Protection information note (the Major Industrial Accidents Council director's draft) were sent to the Steering Committee.

**At the fourth Steering Committee meeting, in Draft 3 of the Environment Canada Project report, the director advised the Committee to re-establish the Environment Canada Project as a priority; and Environment director generals to re-establish the Environment Canada-Canadian Petroleum Products Institute Project, and other federal department director generals to establish it. As shown below by excerpts from the meeting minutes, the Committee re-established and established the projects for Environment and other federal departments. Also shown by excerpts from the senior advisor's speaking notes, he advised that Environment should re-establish the Environment Canada Project. The Committee resolved the arguments about establishing the Expanded Environment Canada-Canadian Petroleum Products Institute Project because one (the Expanded Environment Canada-Canadian Petroleum Products Institute) process should determine national environmental priorities, and other sectors and provinces should decide them. They did not establish the Project for Environment and other federal departments, and decided that other sectors and provinces were not to decide the priorities in the Expanded Environment Canada-Canadian Petroleum Products Institute process, and one process could not determine the priorities. The Committee also advised that the Canadian Petroleum Products Institute should be advised to establish the Environment Canada-Canadian Petroleum Products Institute Project.**

The Steering Committee now included the Environmental Protection/Program Integration director general and no longer included the former Conservation &



Protection/Policy and Atmospheric Sciences director generals. With the exceptions of Industry, Natural Resources/Energy, Agriculture, and Finance, all director generals attended or were represented.

The Response Assessment director general told the Steering Committee that as a result of Environment's re-organization, and particularly Conservation & Protection's, she had been assigned to lead Environment's "Priority Setting Project." The other participants introduced themselves.

The Steering Committee noted that Environment was retaining the Major Industrial Accidents Council "to facilitate the finalization of the proposed methodology by application of its stakeholder consultation process." The Council was to circulate the drafts, pursue and consolidate the comments, and assist the project team in finalizing the report.

The director reported on the status of Draft 3. He told the Steering Committee, "The methodology... appears, therefore, to have been accepted as representing well, the information needed and a reasonable manner of handling and presenting it to decision-makers for their guidance."

The members present accepted this report on the highlights....

After some discussion of the [clustering] proposal, and recognizing that it was being put forward to provoke discussion, the members present supported the proposal....

The general and specific conclusions proposed for inclusion in Draft 3.... were reviewed and agreed to...

The... recommendations... were discussed and accepted:

- Draft 3 should be circulated widely by the end of January, with follow up to ensure response with the view to preparing Draft 4 by... early April;....
- Where reviewer groups proposed to hold small workshops to discuss the Draft within their communities, such workshops should be encouraged and supported by the attendance of project team members;
- The first draft of the Integrated [Canadian Petroleum Products Institute-Environment Canada] Methodology should be circulated to the two project teams for comment with the view to preparing a second draft by... early April;
- The Case Studies Workbook should be circulated with Draft 3...;
- A national workshop (intended to confirm a consensus view that: priority setting as a process is necessary; that the proposed methodology, as may be modified by the workshop, incorporates the national experience to date; and that it is likely to serve the general purpose of supporting decision-making in an open transparent and predictable manner, enabling consensus to be reached on the relative ranking of environmental issues) was to be included in the work plans for probably hosting in mid-June. It was agreed that the workshop should not be for the purposes of actually ranking environmental issues.

The Response Assessment director general reported on the linkage of the ranking methodology to strategic options analysis and decision-making.

The activities within... Environment... dealing with decision-making were described and discussed. It was noted that while there are a large number of specific processes in place that would in all likelihood be continued... as necessary to deal with specific programs ([Accelerated Reduction/Elimination of Toxics] for example), an attempt was being made to develop an overall Strategic Options... framework and process in which such processes would be used to deal with specific issues or sectors.

The Strategic Options Process would incorporate the issue ranking activity and carry the analysis to the point of addressing what options are or would be cost-effective for responding to the issues..., and which organization... would be most appropriate for leading the response program. The options analyzed would cover the full range from voluntary to regulated,... and the... organization analysis would take into account jurisdictional questions as well as levels of regional seriousness. ..

In answer to a... question, it was mentioned that while cross-issue option analysis is specifically contemplated within sectoral [Strategic Options Process] analyses (and has been successfully demonstrated in a number of cases), cross-sectoral analysis, because of its inherent complexity is still problematic and its place in [the Process] is uncertain.

A question concerning whether... it was expected that the Parliamentary Committee conducting the [Canadian Environmental Protection Act] Review might be briefed on the issue ranking or the [Strategic Options Process] activities and might be encouraged to mandate them by legislative amendment was asked. It was responded to by suggesting this was not known but the Department would probably want only that they be recognized as tools of administrative policy.

The members found this discussion useful as a context setting discussion, and asked to be kept informed of progress.

(The original plan was for the Environment Canada process to include the Accelerated Reduction/Elimination of Toxics process.)

The Response Assessment director general reported on the status of the Case Studies Workbook.

It was suggested that some of the case studies would require expert panels to be formed in the review period following circulation, and that other case studies could be developed in a scanning and scoping process in the same period, that would test the proposed expert panel process of issue profiling...

The committee noted these points and in the discussion it was also noted that by June, proposals for how the methodology would be implemented, including the... panels, would have to be firmed up.

The senior advisor reported on the Canadian Petroleum Products Institute Workshop and suggested the following shortlist of Environment responses:

- scan interested stakeholders to develop consensus about the issues

- profile extra issues, if needed, to get them on the table
- get feedback from subject matter experts - did we get the issues right?
- rank issues in a workshop setting

(The suggestions were limited to issue ranking.)

The members... suggested that while integration of the two methodologies would be undertaken, it was necessary to concentrate on achievable components of the overall scheme - i.e. that full cross-issue, cross-sectoral analysis and decision-making was almost certainly not achievable at this time, and further that the message should be returned that it was important to get into an anticipate-and-prevent mode of issue ranking so that the country can get out ahead of issues.

The director reported on the status of the Environment Canada-Canadian Petroleum Products Institute Project.

The first draft of an Integrated Methodology was tabled... It was noted that there were two distinct differences... that need to be resolved: that the [Canadian Petroleum Products Institute] methodology adds and weights... all the factor scores, while the [Environment Canada] methodology would rank only on the basis of ecological impact; and that [the Institute] formally incorporates public concern as a parallel analytical process throughout. It was thought a joint meeting of the task force and project team members might be beneficial to resolve any such differences.

It was agreed that this document should be circulated as a "not for public discussion" draft to the task force and project team members only to solicit their comments and to produce a formal draft.

The Response Assessment director general reported on strategy and policy with respect to the Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting.

The proposed strategy is clearly to solicit the provincial members interest in the development of a priority setting methodology for Environment... and not to indicate that this will be proposed for their use. Provincial advice will be sought on the methodologies they may use with the objective of incorporating appropriate methods and techniques in the one under consideration. If they feel comfortable with the proposed [Environment Canada] methodology, then it is expected that it would gain currency amongst the provinces if they see it would be useful to them.

It was not proposed to take this as a topic into the Strategic Planning Committee nor to link it at this time to the harmonization exercise, despite some obvious relationships. The methodology has to be developed and demonstrated as useful and reliable, before it is proposed for adoption or use in either of the [Canadian Council of Ministers of the Environment] fora.

The members supported this approach.

The Response Assessment director general reported on strategy and policy with respect to the Advisory Committee on Environmental Protection meeting. "It was noted

that Priority Setting is not on the agenda..., and therefore the topic is considered as... only an information item of progress to date. Draft 3 of the Report, and [Draft 2 of] the Case Studies Workbook, if ready as expected will be circulated." (The Workbook was not to be circulated.)

The Steering Committee discussed other business. "It was decided that the focus of the next meeting, to be called by the Chair tentatively for late March, would be the implementation plans for the methodology in order to prepare partially for the proposed national workshop."

In other words, the Steering Committee approved Draft 3 of the Environment Canada Project report, and Draft 1 of the Environment Canada-Canadian Petroleum Products Institute Project report.<sup>9</sup>

#### Environmental Protection Assistant Deputy Minister Re-Approval of the Revised Plan

In this section, the sixth process of re-establishing the Environment Canada Project as a priority for Environment began and ended. Several other processes of determining environmental priorities intersected with this one, including those establishing, re-establishing, and ending the Environment Canada-Canadian Petroleum Products Institute, Environment Canada-Canadian Petroleum Products Institute-Strategic Options, Environment Canada-Strategic Options, Environment Canada, Canadian Petroleum Products Institute, and Canadian Council of Ministers of the Environment Planning projects for the Canadian Petroleum Products Institute, Environment, Council, other federal departments, stakeholders, and environmental groups. Indeed, re-establishing the Environment Canada-Canadian Petroleum Products Institute Project collided with this process. Also, establishing the Canadian Petroleum Products Institute Project collided with ending the Canadian Council of Ministers of the Environment Planning Project.

Specifically, the Canadian Petroleum Products Institute Project contact questioned whether the Institute should establish the Environment Canada-Canadian Petroleum Products Institute Project. The Major Industrial Accidents Council director questioned whether Environment should establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project (to use the Environment Canada-Canadian Petroleum Products Institute and Strategic Options processes to determine federal government and petroleum products industry pollution priorities - the

Environment Canada-Canadian Petroleum Products Institute-Strategic Options process). The director questioned whether the Project should be established. The director questioned whether the Environment Canada-Strategic Options Project (to use the Environment Canada and Strategic Options processes to determine federal government pollution priorities) should be. Environment advised the Canadian Council of Ministers of the Environment/Environmental Protection Committee (via the Environmental Protection/Pollution Prevention director general) to establish the Environment Canada and Canadian Petroleum Products Institute projects. The Institute argued to the Environmental Protection Committee (via the contact) to advise the Canadian Council of Ministers of the Environment/Strategic Planning Committee to establish the Canadian Petroleum Products Institute Project (equal to ending the Canadian Council of Ministers of the Environment Planning Project). The Environmental Protection Committee argued that the Canadian Council of Ministers of the Environment should not establish the Canadian Petroleum Products Institute Project. The director, Environmental Protection/Response Assessment senior advisor, and contact advised the Response Assessment director general (via the director) to re-establish the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects, and questioned if Environment should re-establish the Environment Canada-Canadian Petroleum Products Institute Project (vs establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project). The senior advisor argued to the director that the Environment Canada Project should be re-established, and to advise Environment and other federal department director generals and stakeholders to re-establish and establish it. The senior advisor argued that the Environment Canada-Canadian Petroleum Products Institute Project should be ended and the Environment Canada Project re-established, and advised that the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project not be established. And the Core Environmental Priorities Working Group - including the Pollution Prevention/Industrial Sectors (formerly Conservation & Protection/Environmental Protection/Industrial Programs) senior engineer - advised the Response Assessment director general (via the manager) to re-establish the Environment Canada-Canadian Petroleum Products Institute Project, and establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project. Then the Canadian Council of Ministers of the Environment established the Environment Canada and Environment Canada-Canadian

Petroleum Products Institute projects, but not the Canadian Petroleum Products Institute Project, for themselves.

The first Canadian Chemical Producers Association senior director argued to the Advisory Committee on Environmental Protection to re-establish the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects. Then the Environmental Protection assistant deputy minister re-established them for Environment. Environmental groups did not establish them. A Canadian Forest Products senior manager advised the Advisory Committee to re-establish them.

During these processes of determining environmental priorities, several arguments continued and emerged about whether projects themselves should be priorities, who should be involved in deciding priorities more generally, how they should be involved, and the scope of a process for determining priorities. First, the Institute argued to the Environmental Protection Committee that the Canadian Petroleum Products Institute Project should be established (equal to ending the Canadian Council of Ministers of the Environment Council Planning Project) because one (the Canadian Petroleum Products Institute) process should determine national environmental priorities. Then the Environmental Protection Committee argued to the Institute and Environment that the Canadian Council of Ministers of the Environment should not establish the Canadian Petroleum Products Institute Project because one process should not determine them. Second, the senior advisor argued to the director that the Environment Canada Project should be re-established because more money and staff should be allocated to test (use) the Environment Canada process. Third, the senior advisor argued that the Environment Canada-Canadian Petroleum Products Institute Project should be ended and the Environment Canada Project re-established because the time and resources should be allocated to develop and test (use) the Environment Canada process (vs develop the Environment Canada-Canadian Petroleum Products Institute and Environment Canada-Canadian Petroleum Products Institute-Strategic Options processes). Finally, the Association president argued to the Advisory Committee that Environment should re-establish the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects because Environment should develop and test the Environment Canada and Environment Canada-Canadian Petroleum Products Institute processes.

At this point, the Canadian Council of Ministers of the Environment resolved the arguments about establishing the Canadian Petroleum Products Institute Project

because one (the Canadian Petroleum Products Institute) process should determine national environmental priorities in 1994. They did not establish the Project for themselves, and decided to help test the Environment Canada and Environment Canada-Canadian Petroleum Products Institute processes. And the Environmental Protection assistant deputy minister resolved the arguments about re-establishing the Environment Canada Project because more money and staff should be allocated to test the Environment Canada process, ending the Environment Canada-Canadian Petroleum Products Institute Project and re-establishing the Environment Canada Project because the time and resources should be allocated to develop and test the process, and re-establishing the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects because Environment should develop and test the Environment Canada and Environment Canada-Canadian Petroleum Products Institute processes. He re-established the projects for Environment, and allocated more time (not money and staff) to test the processes (by early May 1994). The other arguments were not resolved during this period, January 1994 to February 1994.

#### Evidence

In mid-January 1993, the Environment Canada Project continued as Environmental Protection proceeded to implement the revised Project plan, now led by Environmental Protection/Response Assessment.

The Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis senior advisor declined an extension of his secondment from Health/Northern Health.

The Environmental Protection/Intergovernmental Harmonization officer asked the Major Industrial Accidents Council director to draft speaking notes for the Environmental Protection/Pollution Prevention director general to use at the late January Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting. She sent him, in an urgent fax, the early January Committee agenda item on Environment-Canadian Petroleum Products Institute Priority Setting. The director drafted the notes and sent them to the officer. He wrote her:

I was going to prepare overheads too.

However... I met [the director general] at the [Canadian Standards Association] Reception and he indicated he definitely did not need overheads, and really did not need speaking notes.

I mentioned to him... that [the Environmental Protection/Response Assessment director general] was trying to get a particular message through to [the Committee], and that these notes reflected that:

- this is a methodology for [Environment's] use
- it is or could be the front end for a number of decision-making processes, including resource allocations
- [Environment] does not want to develop something that conflicts with other existing (perhaps provincial) methodologies, so we want to obtain their input and advice on such a system, and
- it is very much a work-in-progress and we want them to help shape it.<sup>10</sup>

*The Canadian Petroleum Products Institute Project.* By now, the Canadian Petroleum Products Institute Project contact revised the mid-January draft presentation on the Project for the late January Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting. She was now to make it. The contact wrote (similar to the September 1993 Advisory Committee on Environmental Protection presentation):

#### History

- Purvin and Gertz report....

#### Purpose

- work with governments to see how common approach can be developed

#### Results

- acceptance of need for prioritization [sic]
- commitment for joint work....

#### Principles of Prioritization [sic]....

- predictable
- durable

#### Public Perception Check

- identify and understand any gaps between public perception and scientific assessment of issue....
- develop plan to deal with perception gaps by
  - communication
  - risk assessment
- if necessary, modify priorities with a clear understanding of why

#### Use of Methodology

- requires knowledge and expertise....
- multi-stakeholder approach....

#### Summary

- industry wants to take action but needs consistency/stability across jurisdictions
- [Canadian Petroleum Products Institute] method a first step for modification by provincial methods....



- common method may facilitate current [Council] priority of harmonization/rationalization.

(Natural Resources/Energy were not listed as an Environmental Priorities Working Group member.)

The contact sent the presentation to the Environmental Protection/Intergovernmental Harmonization officer and, the next day, the officer sent it to the Major Industrial Accidents Council director.<sup>11</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* The Major Industrial Accidents Council director and Environmental Protection/Response Assessment senior advisor met. The director was to draft a three-page detailed revised plan for the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects, i.e., an outline of activities and time-lines, for discussion at a meeting with the Response Assessment director general and others in late January.

The same day, the director and Canadian Petroleum Products Institute Project contact met. **The contact questioned whether the Canadian Petroleum Products Institute should establish the Environment Canada-Canadian Petroleum Products Institute Project as a priority, as shown below by excerpts from a director's memo. Also shown, the director questioned whether Environment should establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project (to develop and use the Environment Canada-Canadian Petroleum Products Institute and Strategic Options processes to determine federal government and petroleum products industry pollution priorities).**

After the meeting, the director wrote the senior advisor:

[The contact's] point is that there is no concern about developing data for [Canadian Petroleum Products Institute] steps 3 to 7 at this point since the question to be answered before the end of February (which is when [the Petroleum Products Industry Advisory Committee] meets) is - should [the Institute] adopt [Environment Canada] steps 1 to 4 in place of [Canadian Petroleum Products Institute] steps 1 to 2?

If they do not adopt them, then there will be a different method of ranking issues, as I indicated [Environment] and its stakeholders (except presumably and possibly [the Institute]) were going along with the [Environment Canada] steps 1 to 4 as the ranking methodology, at least for the present.

If they do adopt them, then there remains the question - what does [Environment] do with [Canadian Petroleum Products Institute] steps 3 to 7 vis-a-vis the Strategic Options Process.

**By now, the director drafted the detailed revised plan for the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects, solicited in part from the contact and senior advisor. He questioned whether the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project should be established as a priority, as shown below.** His comments, written on the plan, are in italics.

The director wrote:

The following four activities are suggested as being necessary to present to [the Advisory Committee on Environmental Protection], a proposed Framework and Methodology for the Definition and Ranking of Environmental Issues:

Activity 1 - Development of Framework and Methodology... [by the end of March]

- pursuit of comments,
- provision of technical support to reviewer groups who request it,
- compilation and analysis of comments by the project team, and
- publication of proposed Framework and Methodology...

Activity 2 - Development of Case Studies... [by the end of March]

- pursuit of comments
- formation and conduct of "expert" panels where commentators recommend it
- compilation and analysis of comments by the project team, and
- publication of Case Studies Workbook.

Activity 3 - Conduct of a Trial Scanning and Scoping Exercise [by the end of March]

- formation of a stakeholder team and "expert" panels,...
- subjective assessment of significance by "expert" panels...

Activity 4 - Conduct of a National Workshop [by the end of July]

- confirmation of... Workshop,
- selection of participants to be invited,....
- ...publication of the Workshop Report and the Framework and Methodology

The director also wrote:

It appears that there are two activities... required to be performed, as follows, ideally before the Petroleum Products Industry Advisory Committee Meeting..., and before any further merging takes place:

Activity 5 - Develop case studies and Compare Methodologies... [by mid-February]

- compare methodologies in a small workshop of core group of [Institute] Task Force [Environmental Priorities Working Group]
- arrive at conclusion - is [Environment Canada] Framework and Methodology appropriate to [Institute] needs? and advise [the Committee]

Activity 6 - Review first draft of merged methodologies [by late February]

- circulate draft to core group of [Institute] Task Force and [Environment] Project Team,

- collect and compile comments (could be accomplished by setting a half day aside during the small workshop),... and
- circulate to [the Committee] and subsequently elsewhere as [the Committee] may suggest.

If the comparison... demonstrates the same ordinal ranking, then [the Institute] has one of two decisions to make: if the [Environment] system is considered satisfactory - merge the methodologies; if the [Environment] system is considered too complex, then decide what to do in the face of [Environment's] apparent decision (to be confirmed by the Workshop) to proceed with a ranking methodology different from the [Institute]. There is also the question as to "how do [Canadian Petroleum Products Institute] Steps 3 to 7 relate to the [Environment] Strategic Options Process now under development?" *[data gathering for [Canadian Petroleum Products Institute] Steps 3/4. how much help from [Environment]]*

Regarding timelines, the director wrote that they were suggested by the need to present documents to the Petroleum Products Industry Advisory Committee, the Director General Steering Committee early in April, and the Advisory Committee on Environmental Protection in September. Other Fall 1994 meetings to which reports could or should be made included the Canadian Council of Ministers of the Environment/Environmental Protection Committee, Council/Strategic Planning Committee, Council deputy ministers, Canadian Environmental Protection Act/Federal Provincial Advisory Committee, and National Air Issues Coordinating Committee.

The director sent the draft detailed revised plan to the senior advisor for their meeting the next day. He wrote him, "I have not received anything from you yet regarding the resource needs for Activity 3 - the Trial Run, but that is less important."

The director also sent the draft detailed revised plan to the contact for modifications and corrections.

By the next day, the senior advisor drafted an outline of Activity 3. He wrote:

- choose option for conducting scan
  - use existing [Canadian Council of Ministers of the Environment]/Departmental environmental scans
  - survey [Advisory Committee on Environmental Protection] and [Canadian Environmental Network] members
  - add extra case studies from [Strategic Options] or other processes
- redesign "mini" profile and pretest of [questions] (2 weeks)....
- survey stakeholders - goals,... contract (5 weeks)....
  - mobilize and encourage stakeholders to become involved....
- scope responses (2 weeks)....
- present screening report to stakeholder decision table (eg. [Director General] Steering Committee) (1 week)....
- stakeholder decision table selects subject matter panels -
  - options for selection of panels:
    - subject matter - aquatic, terrestrial or atmospheric

- discipline - health, ecology, socioeconomic
- issue by issue - as needed
- panels composition 3 sci/professionals, 1 public interest, and 1 stakeholder
- require from 5-15 persons to prepare 25-30 issues over 3-8 week period
- panels prepare issue profiles (6 weeks)
  - best data used - credibility
  - reasonable of [sic] assumptions
  - uncertainties adequately recognized and taken into account
- assemble draft issue profiles in form of workbook for circulation and review by stakeholder decision tables or workshop (2 weeks)

(Environment established the Departmental Scan project as a priority for Environment by now.)

The senior advisor sent the outline to the director for their meeting that day.

By now, the contact wanted to resolve "the [Canadian Petroleum Products Institute-Environment] comparison of methodologies question" at the end of January (and not mid-February as earlier planned) by having the Core Environmental Priorities Working Group (Environment, Health, Industry, and the Institute) meet to review a representative range and comparison of Institute related environmental issues.

The director and senior advisor met, and the senior advisor indicated that he would contact Health, Industry, and Pollution Prevention/Industrial Sectors (formerly Conservation & Protection/Environmental Protection/Industrial Programs) for attendees.

After the meeting, the director revised the detailed revised Environment Canada and Environment Canada-Canadian Petroleum Products Institute project plan. **He questioned whether the Environment Canada-Strategic Options Project (to use the Environment Canada and Strategic Options processes to determine federal government pollution priorities) should be establish as a priority, as shown below.**

The director now wrote (in four pages):

- regarding Activity 2, "formation and conduct of 'expert' panels where commentators recommend it to validate data";
- regarding Activity 3 (basically the same as outlined by the senior advisor), "choose option... for conducting scan" at the Response Assessment director general meeting and "issue profiles published as Work Book and circulated to decision-table and National Workshop" by the end of May;
- after Activity 4, "There is an additional activity, not scoped out in this paper, which is the relation of this activity to the development of the Strategic Options Process, and which will be expected to be included in any report to [the Advisory Committee on Environmental Protection]";

- before Activity 5, "Presumably, before [the Institute] will accept a merged document as a recommended process, it has to be satisfied that... the [Environment Canada] methodology is simple to use, and... that it would result in issues being ranked in the same order as the [Canadian Petroleum Products Institute] methodology... There are two activities..." (the phrase "it appears that" was deleted);
- regarding Activity 6, "circulate draft to members of [the Institute] Task Force and [Environment] Project Team" (not a core group), and simply "collect and compile components" and "circulate to [the Petroleum Products Industry Advisory Committee]" (the phrases "could be accomplished..." and "and subsequently elsewhere..." were deleted); and
- regarding time-lines, the Director General Steering Committee meeting was now to be in mid-April.

The director sent the revised detailed revised plan to the senior advisor. He wrote him, regarding the Core Environmental Priorities Working Group meeting:

[The contact] will have someone contact [Institute] people... If this is resolved happily, i.e. it appears the two systems result in comparable ranking, etc. then we proceed simply to circulate the [director] Integrated Draft Methodology... Please confirm your success in getting Health, Industry and [Industrial Sectors] people to attend. As soon as I know [the Institute] are present, I'll confirm too.

The Group were to include the Health/Health Protection biostatistician, former Ecosystem Sciences/Conservation/Ecosystem Risk Analysis senior advisor, Response Assessment ecological risk analyst, Industrial Sectors senior engineer, and Industry environmental analyst. The next day, the Response Assessment senior advisor wrote them:

[The director]... would like to meet with us... to discuss the proposed merger of the [Institute] and Environment... approach to issue ranking. In particular he would like you to focus on whether... the methods give comparable results... Would you please indicate your availability.<sup>12</sup>

*The Environment Canada and Canadian Petroleum Products Institute projects.*  
**Meanwhile, at the Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting, Environment advised the Committee (via the Environmental Protection/Pollution Prevention director general) to establish the Environment Canada and Canadian Petroleum Products**

**Institute projects as priorities. The Canadian Petroleum Products Institute argued to the Environmental Protection Committee (via the Canadian Petroleum Products Institute Project contact) to advise the Council/Strategic Planning Committee to establish the Canadian Petroleum Products Institute Project (equal to ending the Council Planning Project) because one (the Canadian Petroleum Products Institute) process should determine national environmental priorities, as shown below by an excerpt from an interview with the Environmental Protection/Response Assessment senior advisor. Also shown by excerpts from the meeting minutes and a Major Industrial Accidents Council director's memo, the Environmental Protection Committee argued to the Institute and Environment that the Canadian Council of Ministers of the Environment should not establish the Canadian Petroleum Products Institute Project because one process should not.**

The Pollution Prevention director general presented the Environment Canada Project. The contact presented the Canadian Petroleum Products Institute Project and "came on strong."

[The Environmental Protection Committee] asked that this [Environment-Institute Priority Setting] be discussed further at the next [mid-May] meeting, and [the director general] will prepare "real life" examples where this priority setting system is being used. [The Environmental Protection Committee] also recommended that the [Strategic Planning Committee] examine the [Institute] priority setting process, with a view to determining if it contains elements that should be adopted into the [Canadian Council of Ministers of the Environment] planning process.

Members showed concern about the priority setting exercise as using a mechanical, "one size fits all" approach and remain to be convinced on necessity of the methodology. Members agreed to have a future presentation with real life examples and less theory involved. Furthermore, the [Canadian Council of Ministers of the Environment] 1993 Environmental Scan will need to be taken into consideration to see if any relationships exist.

The latest version of the exercise is to be sent to [the Strategic Planning Committee] so that... members can also be informed of the exercise at their next meeting.

Action: [Response Assessment director general]

...The provinces' reaction to the [Institute] approach was quite negative and it took a fair amount of effort by [the Pollution Prevention director general] to recoup the situation.

Other items on the Environmental Protection Committee agenda included:  
Climate Change, Report on National Air Issues Coordinating Committee, Harmonization,

Proposed 1994/95 Workplans and Budgets, Accelerated Reduction/Elimination of Toxics Update, Information Sharing, Partnerships, Packaging Stewardship, Monitoring Programs for Pulp & Paper and Mines, Major Industrial Accidents Council, and Update on CMIT Initiatives.

The Environmental Protection Committee established the 1994/95 Workplan project as a priority for the Canadian Council of Ministers of the Environment by now. The "ranked projects approved within each task group workplan" included: water use efficiency, water quality guidelines, national packaging, solid waste management, hazardous waste, National Air Issues Coordinating Committee, contaminated sites, and pollution prevention (Accelerated Reduction/Elimination of Toxics).<sup>13</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* The day before the Environmental Protection/Response Assessment director general meeting, the Major Industrial Accidents Council director revised and sent the detailed revised Environment Canada and Environment Canada-Canadian Petroleum Products Institute project plan to the director general (and copied the Response Assessment senior advisor, and Response Assessment/Options Evaluation director who was the lead for the Strategic Options Project). **The director, senior advisor, and Canadian Petroleum Products Institute Project contact advised the director general (via the director) to re-establish the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects as priorities and, as shown below, questioned if Environment should re-establish the Environment Canada-Canadian Petroleum Products Institute Project (vs establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project).**

The director wrote the director general:

Assuming the meeting is scheduled... I have been discussing with... [the senior advisor and contact]... what needs to be done and when in the next six months... The attached represents a coordinated view. We thought this might be a useful starting point.

Activity 1 is contemplated as falling within [the Council's] sphere of activities to be contracted.

[The senior advisor] is developing a proposal to handle Activity 3 and will report on Activity 2 (if [the Response Assessment ecological risk analyst] is unable to attend...)....

Activity 5 and 6 are evolving, [the contact] and I are discussing alternative ways to achieve the goal, including a possible meeting [in two days] to resolve Activity 5. If this is done, activity 6 simplifies accordingly.

A significant question of [the Canadian Petroleum Products Institute] is how much [Environment] effort is available to undertake data gathering for [Canadian Petroleum Products Institute] steps 3 to 7? The counter question is why proceed with [Canadian Petroleum Products Institute] steps 3 to 7 as a joint effort or to do so only within the context of [the Strategic Options Project]?<sup>14</sup>

***The Environment Canada Project. By now, the Industry assistant deputy minister questioned (to the Environmental Protection assistant deputy minister) the Environment decision not to use the Environment Canada process to determine federal environmental priorities by the Fall of 1994, as shown below by excerpts from a Major Industrial Accidents Council director's memo.***

The director wrote the Environmental Protection/Response Assessment director general:

[The Response Assessment/Stakeholder Relations advisor] advised, from contacts with Industry..., that they were not too happy with the reference in the information note to [the Advisory Committee on Environmental Protection] to the effect that "[Environment] would not be proceeding to develop a list of prioritized [sic] issues, at this time"...

He asked for clarification, and I advised him that... we wanted to get the framework and methodology developed and largely bought into before attempting to do a full... exercise. A decision to proceed... would depend on our success at the National Workshop and other things. (I did not say it, but resources may be a question.) I also suggested that had [Industry] been at the [Director General] Steering Committee Meeting, they would have been apprised of the draft information note and could have raised their concerns... His response was that compared to [Environment], the re-organization of [Industry] is chaotic - so judge for yourself what's happening.

He communicated this to his counterpart in [Industry], but apparently, in a pre-meeting teleconference between [the Memorandum of Understanding Steering Committee], the subject was raised again. [The Environmental Protection assistant deputy minister] looked around for help, and [the advisor], being the only one in the room who was familiar with the topic, jumped in and gave again the explanation...

Hope this is ok with you. Perhaps you should follow up with [the Environmental Protection assistant deputy minister], or whomever else is going to be at [the Advisory Committee].

By now, the Response Assessment senior advisor drafted the five-page proposal for a trial run of the "priority setting process" (a detailed description of Activity 3). He sent it to the director and wrote him, "It appears we are on for tomorrow" (the Response Assessment director general meeting). **The senior advisor argued to the director**



**that the Environment Canada Project should be re-established as a priority because more money and staff should be allocated to test (use) the Environment Canada process, as shown below by excerpts from the proposal. Also shown, he advised him to advise Environment and other federal department director generals and stakeholders to re-establish and establish it.**

Regarding background, the senior advisor wrote:

While the draft report is being circulated for comment and the final touches applied to a users guide, consideration should be given to a more realistic trial run of the method and its practical applications in decision-making. The goal of the priority setting... process is to guide the prospective allocation of resources and efforts to manage environmental issues in a way that is proportional to the potential reduction of risk....

A checklist of significance... can be used... to focus the data collection efforts of expert panels assigned to document the issue....

The scoring procedure summarizes our knowledge about the range of effects associated with each issue.... The issue may be minor because of actions already taken or require basic research because we have just detected signals of an emerging problem.

....Higher scores reflect a greater degree of certainty about the effects versus lower scoring issues where the effects are limited, uncertain or unknown.

The proposed approach... does not aim to replace mandated policy or planning processes nor supplant scientifically valid screening and assessment protocols.... Moreover, the ranking process... could contribute to a visible but defensible shift, ... in the focus of our efforts.

Priority setting may be best viewed as an integral component of a broader multi-stakeholder decision-making process rather than as a method.... It is a two-way dialogue, not limited to experts, that is open to the participation of stakeholders, public interest groups and other bodies....

....A scan would serve to identify signs of emerging threats....

The stakeholders should then appoint panels of subject matter experts to prepare profiles of each issue. The members... should be selected on the basis of professional competence, peer recognition, command of the subject matter and flexibility of outlook.... The task of the panels is to ensure that the best data is used, critical calculations are free from error, that reasonable assumptions have been made and that uncertainties are recognized and have adequately been taken into account.

Once the profiles have been completed, stakeholder decision tables will review the scored and ranked issues, and choose an appropriate portfolio of response strategies.

Regarding current situation, the senior advisor wrote:

Our experience has shown that... Stakeholders tend to be more concerned about how priority setting might be used in decision-making: what issues go in, come out and might get dropped along the way. Professionals tend to be more concerned about whether or not this method is a scientifically defensible, reliable and valid way

to rank issues. A set of scored issue profiles, have been prepared by various subject matter specialists under [the Response Assessment ecological risk analyst's] direction. These case studies however only deal one [sic] step of the process:... Scoring.

Considerations included:

A realistic trial should cover all the steps... and should be incremental in nature... Moreover, we need to determine if a stakeholder decision table and various expert panels can successfully apply the method. The experience gained... can then be reviewed and incorporate in any revision... of the process for the workshop planned for June....

The most straight forward option is to ask [the Advisory Committee on Environmental Protection] and [Canadian Environmental Network] members for their input. The potential synergy of collaboration between those involved in the [Priority Setting] and [Strategic Options] process also merits consideration. The involvement of the provinces may be impractical at this point in time.

Regarding the tasks, the senior advisor now wrote:

- choose option for trial run
- redesign "mini" issue profile and pretest questions that will be used in stakeholder survey....
  - resources required: 1 person...
- survey stakeholders (eg [Committee] + [Network] members)....
- scoping of responses....
  - resources required: 3 persons
- present screening report....
  - resources required: 1 person
- stakeholder decision table....
- panels prepare and review issue profiles....
  - resources required: 12 persons (2/3 days) per week...
- assemble draft issue profiles...
  - resources required: 3 persons

The senior advisor recommended:

Immediate decisions required -

- recognition of need and approval of option for environmental scan.
- formation of three person project team
- provision of initial operating budget of \$15K - \$20K
- acceptance of the need to eventually request [director generals] and stakeholders to second personnel to panels.

The "immediate decisions" were not made until mid-February.<sup>15</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects. The day of the Environmental Protection/Response*

Assessment director general meeting, the Major Industrial Accidents Council director drafted a list of topics for the meeting. But the meeting was not held. The next day, the director and director general discussed some of the topics. The director's list follows (his notes, written on the list, are in italics).

- work sharing: who does what... *[not yet discussed]*  
...Any news from [third Canadian Petroleum Products Institute senior director] about integration, possible date for... meeting...? *[done]*
- Draft 3 - her signature page. OK?... *[to obtain asap]*
- [Advisory Committee on Environmental Protection] - has she handled [Industry]? *[ok]*
- contract with [Environment], cost of printing and mailing is significant *[adjusted contract]*

The Response Assessment senior advisor drafted a briefing note on the proposed response to the Committee's recommendation for integration of the Environment-Institute "priority setting methods." **He argued that the Environment Canada-Canadian Petroleum Products Institute Project should be ended and the Environment Canada Project re-established because the time and resources should be allocated to develop and test (use) the Environment Canada process (vs develop the Environment Canada-Canadian Petroleum Products Institute and Environment Canada-Canadian Petroleum Products Institute-Strategic Options processes), as shown below by excerpts from his note. Also shown, he advised that the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project should not be established.**

Regarding background, the senior advisor wrote:

[The Institute] has developed a comprehensive... approach, with input from several federal departments, that they believe will be suitable for federal environmental decision-making. Steps 1 & 2 duplicate [the Environment Canada] issue ranking process. Steps 3 to 6 overlap to an unknown extent the proposed sectoral [Strategic Options] process. They want us to use this approach as the basis of responding to [the Committee] challenges.

He did not mention the input of the two environmental groups (Pembina Institute and Society to Overcome Pollution).

Regarding the current situation, the senior advisor wrote:

[Environment] has been restructured and responsibility for priority setting was transferred to the newly formed Response Assessment... [The director] has prepared a cut and paste integration of the [Canadian Petroleum Products

Institute/Environment] approaches to ranking issues and actions, and has called a meeting of the partners [to review and achieve consensus about best approach to merging two methods].

Considerations included:

- Is there a need to integrate [Canadian Petroleum Products Institute] Steps 1-2 and [Environment Canada] Steps 1-4?
- It will dilute efforts to complete [Environment Canada] process. We simply do not have the time and resources to accomplish this task and other work that is being contemplated.
- Although scope of processes are broadly similar, key differences include:
  - addition versus multiplication of components
  - weighting and combining different factors
  - inclusion of public concern
- A "trivial integration" is not feasible because the scanning, scoping and characterization phases of [Environment Canada] process overlap with [Canadian Petroleum Products Institute] Steps 3-6
- [Canadian Petroleum Products Institute] Steps 3-6 duplicate [Strategic Options] process and should be taken off the table.

The senior advisor recommended, "Attempts to integrate [Canadian Petroleum Products Institute/Environment Canada] processes have been superseded by other initiatives and should be discontinued."

The same day, the Core Environmental Priorities Working Group (the "partners") meeting was held to compare the Environment Canada and Canadian Petroleum Products Institute processes. **The Group advised the director general (via the director) to re-establish the Environment Canada-Canadian Petroleum Products Institute Project, and establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project as priorities, as shown below by excerpts from the meeting minutes.**

The director and Group - including the senior advisor, Environmental Protection/Pollution Prevention/Industrial Sectors senior engineer, and Canadian Petroleum Products Institute Project contact – met "to compare the... scanning and ranking methodologies by examining a common set of issues to determine if they would result in the issues being ranked in the same order. If they did not, then we were to try to identify why not." The Health/Health Protection biostatistician and Industry environmental analyst did not attend due to other commitments. The participants examined the issues of Climate Change, Ultraviolet-B Radiation, Smog, and Acid Rain.

Regarding comparison of the methodologies:

Initially, there appeared to be a wide discrepancy between the resulting rank orders, but a closer examination... led to the conclusion that both methods would result in a converging, if not common rank ordering of issues. It was noted though, that both methodologies leave considerable latitude for interpretation by the scorers, and that would have to be diminished by a tightening of the methodologies.

Significantly, it was found that both methodologies dealt with severity and extent, that the [Environment Canada] severity criteria to some extent encompassed the [Canadian Petroleum Products Institute] frequency criteria, and that there was divergence on the remaining factor, i.e. [Environment Canada] covered trend and [Canadian Petroleum Products Institute] covered duration.

Regarding integration of the methodologies:

...It was concluded that the integration... by the replacement of [Canadian Petroleum Products Institute] steps 1 and 2 by [Environment's] steps 1 to 4 was quite reasonable and should proceed.

The key factor for the [Canadian Petroleum Products Institute] methodology being the calculation from the first two steps of an Issue Weight Factor for use in the consequent steps, although the exact method of calculation is not limiting. That is, as long as all issues are ranked according to one methodology, it is not crucial what that exact methodology is providing it has acceptance by the stakeholders as being reasonable and reproducible.

It was noted though that some adjustments in the current draft document would be appropriate in respect to the present provisions and text of the [Environment Canada] methodology that was incorporated, in particular the Issue Profile sheet, in order to make it more appropriate for application within the framework of the [Canadian Petroleum Products Institute] methodology and purpose... These adjustments are to be developed and made.

The resulting integrated document would continue to reflect the [Institute] document's present provisions regarding the summing and weighting of the three factor scores...

It was noted that, in both cases, continued discussion and development of the scoring process and factors is necessary, particularly the socio-economic one.

It was also concluded that the revised document representing the first integration... should be presented to [the Petroleum Products Industry Advisory Committee] at the end of February, as an initial... document with the recommendation that it should not undergo further development until after [Environment] has received comments on Draft 3.

It was agreed that the amendments to this draft would be completed jointly by [the director and contact] by [early February] and [the director] would then effect the changes and produce the revised text for [the Committee] .

And regarding other matters:

Discussions were held about the development of sector investment analysis ([Canadian Petroleum Products Institute] steps 3 to 7) and the Strategic Options Analysis activities... It was concluded that the petroleum sector methodology could be further developed and used as a case study for the [Analysis]. Discussions on this would be pursued by [the contact] with other [Environment] staff.

The same day, the director sent the minutes to the director general, Group, biostatistician, and environmental analyst (and copied the Response Assessment ecological risk analyst and former Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis senior advisor). He wrote the contact, "Please call when you have assembled your comments, perhaps we can meet [at the end of January], if not [early February]."<sup>16</sup>

*The Canadian Petroleum Products Institute Project.* **By the beginning of February, the Canadian Council of Ministers of the Environment established the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects for themselves, as shown below by an excerpt from the Advisory Committee on Environmental Protection meeting minutes. Also shown, they resolved the arguments about establishing the Canadian Petroleum Products Institute Project as a priority for themselves because one (the Canadian Petroleum Products Institute) process should determine national priorities in 1994. They did not establish the Project, and decided to help test the Environment Canada and Environment Canada-Canadian Petroleum Products Institute processes.**

"[The Council's Environmental Protection Committee co-chair] reported that [the Council] wants to be part of testing the methodology."<sup>17</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* **At the seventh Advisory Committee on Environmental Protection meeting, the first Canadian Chemical Producers Association senior director argued to the Committee to re-establish the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects as priorities because Environment should develop and test the Environment Canada and Environment Canada-Canadian Petroleum Products Institute processes, as shown below by excerpts from the meeting minutes. Also shown, the Environmental Protection assistant deputy minister resolved this argument and the arguments about re-establishing the Environment Canada Project because more money and staff should be allocated to test the Environment Canada process, and ending the Environment Canada-Canadian Petroleum Products Institute Project and re-establishing the Environment Canada Project because the time and resources should be allocated to develop and test the process. The assistant deputy**

**minister re-established the projects for Environment, and allocated more time (not money and staff) to test the processes (by early May 1994). Environmental groups did not establish the projects. A Canadian Forest Products senior manager advised the Committee to re-establish them.** (The minutes were not in the Environment Canada Project file.)

The Ottawa city councillor, representing the municipal government sector, and the Manitoba Ministry of Environment deputy minister and Canadian Council of Ministers of the Environment/Environmental Protection Committee chair, representing the Council, attended.

The Industry assistant deputy minister invited the Advisory Committee to comment on the progress reports brought forward from their previous meeting and the progress reports for this one.

Regarding "priority setting," "[the senior director] expressed his concern that more progress had not been made on the Environment... priority setting methodology and urged continued efforts." During the discussion:

[The Environmental Protection assistant deputy minister] responded that his resources were limited but that the Environment... and [Canadian Petroleum Products Institute] models were being combined. Progress was slow and the testing of the methodology had not yet started.

[The Canadian Nature Federation executive director] said that unless credibility for the methodology is established, the [environmental group] community may never support it. [The Environmental Protection assistant deputy minister] explained that Environment... is looking at the technology of the methodology. He did not know if it would be accepted, even politically, but that he is committed to trying it out.

[The senior director] said that industry sees this combined methodology as one key element in priority setting, but not the only one. He emphasized the importance of a coordinated approach so that industry could benefit from the results and focus its efforts better.

[The deputy minister] described the reaction of the [Council's] Environmental Protection Committee to a recent presentation on this methodology. He agreed that it must be approached in a harmonized way. There was some concern that this model was being presented as the only one which everyone should use. He suggested some issues that need to be considered as the methodology is developed:

- How will cross-media issues (e.g. water - air) be ranked?
- How will issues like forestry, that are not pollution/contaminant related, be addressed?

Some members want Environment... to continue to develop the priority setting methodology and to test it.

At the end of the meeting, the Environmental Protection assistant deputy minister reviewed the decisions of the meeting and added that Environment were to test the "priority setting methodology" by the next meeting and report at that time.

In other words, the Environmental Protection assistant deputy minister re-approved the revised Environment Canada and Environment Canada-Canadian Petroleum Products Institute project plan.

Other items on the Advisory Committee agenda included Regulatory Review (including Environmental Protection), Pollution Prevention Legislative Task Force, Progress Report of Advisory Committee, Parliamentary Review of Canadian Environmental Protection Act, New Environmental Agenda, Biodiversity, Strategic Options Project, Economic Instruments, Pollution Prevention, Harmonization, and Membership.

Regarding comments on the Advisory Committee progress report:

[The Environmental Protection assistant deputy minister] provided a review of the evolution of [the Committee] and progress to date. He said that both Environment and Industry... value [the Committee's] contribution and want to make it work even more effectively.

[The assistant deputy minister] said that after the Canadian Environmental Advisory Council was discontinued, there was a need for another forum to help integrate initiatives at the federal level and that government needed advice on a strategic level that would focus on environmental protection.

He acknowledged that there has been a lot of change during the past two years in both departments, the Co-Chairs of the Committee and government in general. He emphasized the importance of having such a Committee to provide ongoing advice during these changes....

[The assistant deputy minister] reinforced the importance of [the Committee], as it is the only forum of its kind in operation.

During the discussion the first day:

[The Canadian Labour Congress secretary-treasurer] noted that a number people [sic] on [the Committee] are also on other environmentally focused multi stakeholder committees....

[The Environmental Protection assistant deputy minister] agreed that some of the same people show up at various meetings and that this is a concern to him, too. The government wants new blood on these committees....

....[The senior director] said that in other *fora*, issues are discussed in "silos" while [the Committee] allows issues to be considered horizontally and ideas integrated. [He] said that priority setting is an example of this integration....

....[The assistant deputy minister] would like to see representation from Finance included.



And during the continued discussion the second day (future directions for the Committee):

[The Pollution Probe executive director] repeated her request to revise the Terms of Reference. After some discussion, it was agreed the sentence [The Committee will serve as a forum to assist in ensuring that the long-term exploitation of Canada's natural resources and economic growth of its industries, which are contingent on a healthy environment, are properly balanced with the environmental regulatory processes of government.] would be removed.

[The Industry assistant deputy minister] asked members on what areas they would specifically like to focus.... [The senior director] repeated his eagerness to see results from the priority setting process....

When asked what [the Committee] could provide that other committees could not, [the Environmental Protection assistant deputy minister] said that [the Committee] was the only group of its kind but that he felt it could do more than it has. Perhaps could be a partner in developing a national environmental protection framework....

[The Communications, Energy & Paperworkers Union alternate] asked if ministerial access were not necessary to address policy, and if it were to have this access, would [the Committee] not then be duplicating the [National Roundtable on the Environment and Economy]. [The Environmental Protection assistant deputy minister] repeated that the [Roundtable] includes issues like forestry, fisheries, people and populations that [the Committee] does not.... Environmental protection is more focused than sustainable development. He said that government needs to do better on pollution prevention and [the Committee] could be a part of that. He repeated the need for an economic perspective in the discussions. He explained that the Ministers and [deputy ministers] were involved in [the Committee] but that the process of working with [assistant deputy ministers] is simpler and, therefore, more efficient in this case....

[The alternate] said he thought [the Committee] and [Roundtable] were complementary. The [Roundtable] is more public and [the Committee] works more internally....

[The senior manager] asked that harmonization, priority setting and pollution prevention be a focus for future directions. He also said that [the Committee] has to get closer to the [Canadian Council of Ministers of the Environment] to influence policy. In response, [the Manitoba Environment deputy minister] expressed his interest in involving [the Committee] directly.

In general, members agreed that there is value in participation in [the Committee] and would like this forum to continue.

Some members recommended that [the Committee] continue to provide timely information on Environment... and Industry... initiatives. [The Industry assistant deputy minister] recommended that [the Committee] approach some issues in depth. Members suggested the following key issues:

- pollution prevention;
- priority setting;
- economic instruments; and
- harmonization.

During the session on the Strategic Options Project, the Environmental Protection/Response Assessment/Options Evaluation director and a staff member presented the Project.

This is first being tested by applying it to [the first Priority Substances List] over a 12-month period...

[The director] said that Environment and Health... want to get the input of [the Advisory Committee]... There is a commitment to exploring all possible options.... If the principles and strategies lead to better decisions, then Environment... will employ this process elsewhere in the Department.

The two Departments... will gather information through a product (determine the uses of a particular chemical) or sectoral approach (consider all [List] substances in one sector). The scoping stage will involve a horizontal team which will look for linkages with existing initiatives.

Following these stages, the public will have 60-90 days to challenge the thinking.

The second phase, Scoping, involves the establishment of an Issue Table, led by the designated authority and involving... partners and stakeholders. The... Table ensures that the scientific, technical and socio-economic information necessary for the evaluation of strategic options is available.... In the case of a sector, the issues within the sector are also prioritized by the... Table....

In 1994/95, the Strategic Options Process is being applied to the 21 [first Priority Substances List] substances declared toxic under the Canadian Environmental Protection Act. It shall be applied to other priority areas in the years to follow.

During the discussion:

[The president] asked if the Department has the resources to deal with the issue. He doubted whether Environment..., Industry... or the [environmental groups] have the resources. In reply, [the director] said that they have to discipline the process and those at the table to make it work. An independent will evaluate the cost-effectiveness of the process....

[The Environmental Protection assistant deputy minister] said they were looking for alternatives to regulation. He said that [the Committee] does not have to be part of the... Process... He reported that this project costs one million dollars per year and has ten staff. He said that if this process can develop more cost-effective ways to deal with [the first List], then it will be well worth it.

The Environment Canada-Strategic Options and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects were not mentioned.

And regarding membership, "[the Industry assistant deputy minister] asked that members interested in continuing their participation on [the Advisory Committee] write to the Secretariat... within the next two weeks."<sup>18</sup>

## Discussion

### The Environment Canada Project

*Re-establishing it for Environment and other federal departments*, During the fourth process of re-establishing the Environment Canada Project as a priority for Environment and other federal departments, the Director General Steering Committee - the interim decision-maker for this Project - decided to allocate more time to it (reallocate and allocate resources to the Environment Canada-Canadian Petroleum Products Institute Project, and not allocate resources to the Expanded Environment Canada-Canadian Petroleum Products Institute Project). Government experts did not offer advice, so they seemed to have no influence on the decision.

In this process, dissimilar to the first through third processes of re-establishing this Project for Environment and other federal departments (discussed in Chapters 4 to 6), government experts did not seem to be asked for advice, or to offer it. So perhaps they had no influence on the decision because *they were not asked or did not offer*. But why were they not asked, and why did they not offer? In the process that was to be developed and used in this Project - the Environment Canada process - government and non-government experts were to be asked by Environment and other federal departments.

Like government experts, the Committee members were public servants, but unlike them, they were managers (Environment and other federal department) not experts, although they had expertise, e.g., the Environmental Protection/Response Assessment, Environmental Protection/Pollution Prevention, and Corporate Policy director generals in engineering, natural science, and economics, respectively. So perhaps the lack of influence by government experts did not make a significant difference to determining "good" environmental priorities because the Committee knew as much as (or more than) they did about the science of deciding priorities. Also, the other participants - including an Environment manager with expertise in engineering - did not question if this Project should be re-established. In particular, after the Environmental Protection assistant deputy minister (the final decision-maker for this Project) re-established it and established the Environment Canada-Canadian Petroleum Products Institute Project; the Major Industrial Accidents Council director advised the Committee to re-establish this Project and to re-establish and establish the Environment

Canada-Canadian Petroleum Products Institute Project. But what did government experts know?

The Expanded Environment Canada-Canadian Petroleum Products Institute Project

*Establishing it for Environment and other federal departments,* During the process of not establishing the Expanded Environment Canada-Canadian Petroleum Products Institute Project for Environment and other federal departments, the Core Project Team - including the Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis economist, Industry economist, and Health/Health Protection statistician - advised the Director General Steering Committee – it seemed the interim decision-maker for this Project - to allocate resources to it (equal to allocate more time to the Environment Canada Project). The Canadian Petroleum Products Institute Workshop participants - including the Conservation & Protection/Environmental Protection/Industrial Programs engineer, and statistician (also a Team member) - argued to the Environmental Priorities Working Group that Environment, the Institute, and Health should allocate time to this Project. Then the Committee decided not to allocate resources to it (and to allocate more time to the Environment Canada Project, and reallocate and allocate resources to the Environment Canada-Canadian Petroleum Products Institute Project); so the economists and statistician seemed to have no influence on the decision; and the statistician seemed to have no influence.

In this process, the economists and statistician seemed to be asked for advice by the Team, and to offer it to them; the Team were not asked for advice, but offered it to the Committee; the engineer and statistician seemed to be asked by Workshop participants, and to offer it to them; and Workshop participants did not seem to be asked, but offered it to the Group. So perhaps the economists, engineer, and statistician had no influence on the decision because *although they offered advice to the Committee, they were not asked for it by them.* But why were they asked (by anyone), and why did they not offer? In the process that was to be developed and used in this Project - the Expanded Environment Canada-Canadian Petroleum Products Institute process - it seemed that government and non-government experts were to be asked by federal and provincial governments and others.

Like the economists, engineer, and statistician, the Committee members were public servants, but unlike them, they were managers (Environment, Industry, Health Protection, and other federal department), not experts, although they had expertise, e.g., the Environmental Protection/Response Assessment, Environmental Protection/Pollution Prevention, and Corporate Policy director generals in engineering, natural science, and economics, respectively. So perhaps the lack of influence by the economists and statistician did not make a significant difference because the Committee knew more than they did about the science of deciding priorities. Yet, the other Team members from Environment and the International Joint Commission had expertise in economics, sociology, natural science, and engineering; and the other Workshop participants included an Environment manager with expertise in economics. Further, the other participants questioned if this Project should not be established, with the major exception of the Environmental Law Centre staff counsel who did not establish it or the Environment Canada and Canadian Petroleum Products Institute projects. In particular, the Advisory Committee on Environmental Protection (including the staff counsel) advised the Memorandum of Understanding Steering Committee to establish this Project, the Institute to re-establish the Canadian Petroleum Products Institute Project, and Environment to re-establish the Environment Canada Project; and the Institute advised Environment that Environment, Industry, and Health should establish this Project. But what did other government experts know?

#### The Environment Canada Project, Continued

*Re-establishing it for Environment.* During the sixth process of re-establishing the Environment Canada Project for Environment, the Environmental Protection assistant deputy minister - the final decision-maker for this Project - decided to reallocate time to it (and to the Environment Canada-Canadian Petroleum Products Institute Project). Government experts did not offer advice, so they seemed to have no influence on the decision.

In this process, similar to the first through fifth processes of re-establishing this Project for Environment (discussed in Chapters 3 to 6), government experts were not asked for advice, and did not offer it. So perhaps they had no influence on the decision because *either they were not asked or did not offer*. But why were they not asked, and why did they not offer? In the process that was to be developed and used in this Project

- the Environment Canada process - government and non-government experts were to be asked by Environment and other federal departments.

Like government experts, the assistant deputy minister was a public servant, but unlike them, he was a manager (Environment senior), not an expert, although he had expertise in engineering. So perhaps the lack of influence by government experts did not make a significant difference because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities. Also, the other participants - including Environment, other federal department, and provincial managers with expertise in engineering, natural science, and economics - did not question if this Project should be re-established. In particular, after the Director General Steering Committee re-established it, re-established and established the Environment Canada-Canadian Petroleum Products Institute Project, and did not establish the Expanded Environment Canada-Canadian Petroleum Products Institute Project; the Environmental Protection/Response Assessment senior advisor advised that this Project should be re-established and argued the Environment Canada-Canadian Petroleum Products Institute Project ended and Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project not established; Environment advised the Canadian Council of Ministers of the Environment/Environmental Protection Committee to establish this Project and the Canadian Petroleum Products Institute Project; the Council established this Project and the Environment Canada-Canadian Petroleum Products Institute Project; the first Canadian Chemical Producers Association senior director and Canadian Forest Products senior manager advised the assistant deputy minister to re-establish this Project and (the senior director argued) re-establish the Environment Canada-Canadian Petroleum Products Institute Project. But what did government experts know?

It is important to note that participants in the Environment Canada and other projects did not seem to question if experts should be involved in determining environmental priorities, or how they should be involved. Generally, the participants all seemed to agree that experts knew best about the science of deciding priorities.

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#### NOTES

<sup>1</sup> Environmental Protection/Response Assessment senior advisor, notes of December 23, 1993, "[Major Industrial Accidents Council director]..."; Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, memo of December 30, 1993, "Proposed Briefing Note for the CCME/EPC Meeting January 24/25"; Environmental Protection/Intergovernmental Harmonization

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officer to Major Industrial Accidents Council director, memo of December 23, 1993, "If you have..."; Major Industrial Accidents Council director, draft briefing note for Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting of January 24-25, 1994, "11. Environment Canada - CPPI Priority Setting," December 30, 1993; Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, memo of January 5, 1994, "A. Requested Briefing for..."; Mining Association representative to Major Industrial Accidents Council director, memo of January 4, 1994, "MAC Environment Committee Meeting."

<sup>2</sup> Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, memo of December 30, 1993; Director General Steering Committee, minutes of fourth meeting of January 18, 1994, 1-2.

<sup>3</sup> Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, memo of December 30, 1993; Major Industrial Accidents Council director to Environmental Protection/Response Assessment/Stakeholder Relations advisor, memo of December 31, 1993, "Briefing Note for ACEP"; Major Industrial Accidents Council director, draft information note of seventh Advisory Committee on Environmental Protection meeting of February 2-3, 1993, "Objective: To inform....," 2; Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, memo of January 5, 1994; Major Industrial Accidents Council director, notes of January 6, 1994, "Priority Setting"; Major Industrial Accidents Council director, draft agenda of Environmental Protection/Response Assessment director general meeting of January 11, 1993; Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, memo of January 7, 1994, "Terms of Reference for a Contract with MIACC on Priority Setting"; Major Industrial Accidents Council director, "Environmental Issue Ranking"; Resource Futures facilitator to Major Industrial Accidents Council director, memo of January 7, 1994, "ACEP Report: Priority Setting"; Resource Futures facilitator, information note for seventh Advisory Committee on Environmental Protection meeting of February 2-3, 1993; Environment, briefing note of Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting of January 24-25, 1994, "12. Environment Canada - CPPI Priority Setting"; Canadian Council of Ministers of the Environment/Environmental Protection Committee, "12. Environment Canada - CPPI Priority Setting," January 10, 1994.

<sup>4</sup> Canadian Petroleum Products Institute Project contact to Environmental Protection/Response Assessment director general, memo of January 11, 1994, "For use in..."; Canadian Petroleum Products Institute Project contact, "1. Environmental Priority Setting..."

<sup>5</sup> Major Industrial Accidents Council director, "Environmental Priority Setting: A Proposed Methodology Representing the First Integration of a Proposed Methodology Produced by the CPPI Working Group and a Definition and Ranking Framework Produced by the Environment Canada Project Team," January 1994, 36.

<sup>6</sup> Environmental Protection/Response Assessment, "Environmental Issue Definition and Ranking: A Proposed Priority Setting Methodology for Environment Canada," January 31, 1994; Director General Steering Committee, minutes of fourth meeting of January 18, 1994, 2.

<sup>7</sup> Environmental Protection/Response Assessment senior advisor, notes, "1. D.G. Meeting..."; Environmental Protection/Response Assessment senior advisor, briefing note of January 14, 1994, "Issue: USA EPA Meeting on Priority Setting, Goals and Indicators (Jan 31 - Feb 4)."

<sup>8</sup> Environmental Protection/Response Assessment senior advisor, "Speaking Notes."

<sup>9</sup> Environmental Protection/Response Assessment senior advisor, briefing note of January 14, 1994, "Issue: CPPI Priority Setting Workshop Nov 1-2 1992"; Environmental Protection/Response Assessment senior advisor, briefing note of January 14, 1994, "Issue: Proposed Response to Recommendations of CPPI Priority Setting Workshop Nov 1-2, 1993"; Environmental Protection/Response Assessment ecological risk analyst, briefing note of January 14, 1994, "Issue: Case Study Book"; Director General Steering Committee, minutes of fourth meeting of January 18, 1994, 1-7; "Interdepart'l Directors General Steering Committee: Environmental Priority Settings"; Environmental Protection/Response Assessment senior advisor, notes, "DG Steering Committee"; Director General Steering Committee, agenda for fourth meeting of January 18, 1994; Environmental Protection/Response Assessment senior advisor, "Speaking Notes."

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<sup>10</sup> Environmental Protection/Response Assessment senior advisor, notes, "1. D.G. Meeting..."; Major Industrial Accidents Council director to Environmental Protection/Intergovernmental Harmonization officer, letter of January 20, 1994, "CCME/EPC - Priority Setting - Speaking Notes"; Environmental Protection/Intergovernmental Harmonization officer to Major Industrial Accidents Council director, fax of January 20, 1994, "CCME EPC - Priority Setting"; Major Industrial Accidents Council director, "Draft Speaking Notes: CCME-EPC Meeting January 24/25: Environmental Priority Setting," 1-3.

<sup>11</sup> Environmental Protection/Intergovernmental Harmonization officer to Major Industrial Accidents Council director, memo of January 21, 1994, "[Canadian Petroleum Products Institute Project contact's] Presentation on Priority Setting to CCME EPC"; Canadian Petroleum Products Institute Project contact, overheads for Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting of January 24-25, 1994, "Environmental Priority Setting Methodology," January 20, 1994; Environmental Protection/Intergovernmental Harmonization officer to Major Industrial Accidents Council director, memo of January 21, 1994.

<sup>12</sup> Major Industrial Accidents Council director to Environmental Protection/Response Assessment senior advisor, memo of January 23, 1994, "Outline of Activities and Time-Lines"; Major Industrial Accidents Council director, "Environmental Priority Setting - Activities and Time-Lines," January 23, 1994; Environmental Protection/Response Assessment senior advisor, "Outline of Task Three," January 24, 1994; Environmental Protection/Response Assessment senior advisor to Major Industrial Accidents Council director, memo of January 24, 1994, "For 9:30 meeting"; Major Industrial Accidents Council director to Environmental Protection/Response Assessment senior advisor, memo of January 24, 1994, "Meeting on January 27 at 09:30 and meeting on January 28 at 09:30"; Major Industrial Accidents Council director, "Environmental Priority Setting - Activities and Time-Lines," January 24, 1994, 1-3; Environmental Protection/Response Assessment senior advisor to Core Environmental Priorities Working Group, memo of January 25, 1994, "Proposed Meeting with CPPI - January 28, 9:30..."; Environmental Protection/Response Assessment senior advisor to Core Environmental Priorities Working Group, memo of January 25, 1994, "if you can't..."

<sup>13</sup> Environmental Protection/Intergovernmental Harmonization officer to Major Industrial Accidents Council director, memo of January 21, 1994; Environmental Protection/Response Assessment senior advisor, interview, June 25, 1995; Canadian Council of Ministers of the Environment/Environmental Protection Committee, draft record of decisions of meeting of January 24-25, 1994, 1-5; Canadian Council of Ministers of the Environment/Environmental Protection Committee, action items of meeting of January 24-25, 1994; Major Industrial Accidents Council director, notes of Environmental Protection/Response Assessment director general meeting of February 18, 1994, "Priority Setting: Meeting in [director general's] Office, February 18, 1994," February 27, 1994, 1; Canadian Council of Ministers of the Environment/Environmental Protection Committee, draft record of decisions of meeting of January 24-25, 1994.

<sup>14</sup> Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, memo of January 26, 1994, "Meeting on January 27 at 09:30," copied to Response Assessment senior advisor and Response Assessment/Options Evaluation director; Advisory Committee on Environmental Protection, minutes of seventh meeting of February 2-3, 1994, Attachment 5C.

<sup>15</sup> Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, memo of January 26, 1994, "ACEP Meeting," 1-2; Environmental Protection/Response Assessment senior advisor, "Proposed Trial Run of the Priority Setting Process"; Environmental Protection/Response Assessment senior advisor to Major Industrial Accidents Council director, memo of January 26, 1994, "It appears we..."

<sup>16</sup> Major Industrial Accidents Council director, notes of January 27, 1994, "Topics for Meeting with [Environmental Protection/Response Assessment director general] and Others"; Major Industrial Accidents Council director to Environmental Protection/Response Assessment senior advisor, letter of February 10, 1994, "Following your call..."; Environmental Protection/Response Assessment senior advisor, briefing note of January 28, 1994, "Issue: Proposed Response to Recommendation #1) Integration of CPPI/EC Priority Setting Methods"; Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, Core Environmental Priorities Working Group, Health/Health Protection biostatistician, and Industry environmental analyst, memo of January 28, 1994, "Integration of CPPI and DOE methodologies," copied to Response Assessment ecological risk analyst and former Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis senior advisor; Major Industrial



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Accidents Council director, minutes of Core Environmental Priorities Working Group meeting of January 28, 1994, "Priority Setting Meeting - CPPI/DOE Integration," 1-2.

<sup>17</sup> Advisory Committee on Environmental Protection, minutes of seventh meeting of February 2-3, 1994, 1.

<sup>18</sup> Ibid., 1-18, attachment 5C; Advisory Committee on Environmental Protection, action items of seventh meeting of February 2-3, 1994, 1, 3.

CHAPTER 8  
IMPLEMENTATION OF THE REVISED ENVIRONMENT CANADA PROJECT PLAN,  
CONTINUED

In this chapter, I discuss the influence that government experts had in the *fifth* process of not re-establishing the Environment Canada Project as a priority for Environment and other federal departments. The three month process began in February 1994 and ended in April 1994 when the Director General Steering Committee approved the revised Project plan (to use the Environment Canada process).

I show that the Environmental Protection/Response Assessment (formerly Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis) natural scientist and Environmental Conservation/Ecosystem Conservation/Water Research (formerly Ecosystem Sciences/Water Research) natural scientist had no influence on the decision by the Director General Steering Committee not to re-establish the Environment Canada Project for Environment and other federal departments. The Corporate Policy economist seemed to have no influence. The Industry economist and Agriculture economist seemed to have a major (deciding) influence. And other government experts seemed to have no influence. I suggest that the natural scientists and other government experts had no influence because they were not asked for advice by the Committee and did not offer it to them. The Corporate Policy economist had no influence because although she offered advice to the Committee, she was not asked for it by them. And the Industry and Agriculture economists had a major influence because basically they were asked by the Committee and offered it to them. I also suggest that the lack of influence by the natural scientists and Corporate Policy economist did not make a significant difference to determining "good" environmental priorities because the Committee - including the Industry and Agriculture economists - knew more than they did about the science of deciding priorities (and the administration and policy of it). The major influence by the Industry and Agriculture economists did not make a significant difference because the Committee knew as much as they did about the science. And the lack of influence by other government experts did not make a significant difference because the Committee knew as much as (or more than) they did about the science.

## Director General Steering Committee Approval of the Revised Plan

In this section, the fifth process of re-establishing the Environment Canada Project as a priority for Environment and other federal departments began and ended. Several other processes of determining environmental priorities intersected with this one, including those establishing, re-establishing, and ending the Environment Canada-Canadian Petroleum Products Institute, Environment Canada, Environment Canada-Strategic Options, Environment Canada-Canadian Petroleum Products Institute-Strategic Options, Environment Canada-Departmental Scan, Environment Canada-Canadian Environmental Protection Act Review, Health Protection, Health, and Environment Canada-Ecosystem Action Plan projects for Environment, other federal departments, the Canadian Petroleum Products Institute, and Health.

Specifically, the Environmental Protection assistant deputy minister asked the Environmental Protection/Response Assessment director general to advise whether the Environment Canada-Canadian Petroleum Products Institute Project should be re-established. The assistant deputy minister updated the deputy minister on his decision to re-establish the Environment Canada Project. Then the deputy minister re-established the Environment Canada-Canadian Petroleum Products Institute Project for Environment.

The Major Industrial Accidents Council director advised the director general to re-establish the Environment Canada Project. The Response Assessment senior advisor advised the director general to re-establish it and to establish the Environment Canada-Strategic Options Project. He argued to her (and the Council director) to re-establish the Environment Canada Project. He repeated his argument, advised them to advise other federal departments the same, and questioned whether the Environment Canada-Canadian Petroleum Products Institute-Strategic Options and Environment Canada-Strategic Options projects should be established. The Response Assessment ecological risk analyst argued to the senior advisor and later the Council director (via the senior advisor) and Core Project Team (via the Council director) that the Environment Canada Project should be re-established. The Council director advised the director general (and third Institute senior director) to re-establish the Environment Canada-Canadian Petroleum Products Institute Project. The senior advisor argued that the Institute should be advised to establish it. The Canadian Environmental Network seemed to establish the Environment Canada Project. The Environmental Conservation/Ecosystem

Conservation/Water Research director and science liaison officer argued to the Council director and later the Team (via the Council director) that the Project should be re-established. The Industry environmental analyst advised the Council director the same. And the senior advisor advised the director general to establish the Environment Canada-Departmental Scan, Environment Canada-Canadian Environmental Protection Act Review, or Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects, or to re-establish the Environment Canada Project. Then Environmental Protection established the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project for Environment, and advised the Institute to also establish it. The Institute did so for themselves. And Health/Health Protection ended the Health Protection Project for Health, and advised Health to establish the Health Project.

The Team - including the Corporate Policy economist - advised the Director General Steering Committee to re-establish the Environment Canada Project. And the director general advised the Committee not to, but to establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project. Then the Committee - including the Industry environmental analyst and Agriculture senior environmental analyst - did not re-establish the Environment Canada Project for Environment and other federal departments. They re-established the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project for Environment, and established it for other federal departments; and established the Environment Canada-Strategic Options or Environment Canada-Ecosystem Action Plan projects for Environment and other federal departments.

During these processes of determining environmental priorities, many arguments emerged and continued about whether projects themselves should be priorities, who should be involved in deciding priorities more generally, how they should be involved, the scope of a process for determining priorities, and the processes themselves. First, the senior advisor argued to the director general that the Environment Canada Project should be re-established because Environment should test (use) the Environment Canada process, and that Environment should not weight the ecological factor more than health and economic factors. Second, the senior advisor argued to the director general and Council director that the Environment Canada Project should be re-established because Environment should allocate more resources (including Environment and other federal department staff) to test (use) the Environment Canada

process. Third, the ecological risk analyst argued to the senior advisor, Council director, and Team that the Environment Canada Project should be re-established because more Environment and other federal department staff - including experts - should be allocated to test (use) the Environment Canada process. Fourth, the senior advisor argued that the Institute should be advised to established the Environment Canada-Canadian Petroleum Products Institute Project because the Institute should test (use) the Environment Canada-Canadian Petroleum Products Institute process. Fifth, the Ecosystem Conservation/Ecosystem Initiatives (formerly Response Assessment) ecological risk analyst argued to the senior advisor, director general, Council director, and Team that the Environment Canada process should determine a single manager's priorities. Sixth, the Canadian Labour Congress secretary-treasurer argued to the Council director, director general, and Team that risk assessors should not help decide Environment's priorities (vs hazard assessors, who should). Seventh, the Water Research director and science liaison officer argued to the Council director and Team that the Environment Canada Project should be re-established because more Environment and other federal department staff - including experts - and time should be allocated to develop the Environment Canada process before broad consultation. Eighth, the senior advisor argued to the Council director and Team that the Environment Canada process should not determine budgetary priorities, current and emerging issues should not be scored separately, and the ecological factor should not be weighted more than health and socioeconomic factors. Ninth, the Environmental Protection/Pollution Prevention senior engineering advisor argued to the Council director and Team that the ecological factor should not be weighted more than the health factor. Finally, the senior advisor argued to the director general that the Team (including the economist) should not help decide Environment's priorities.

At this point, the director general resolved the argument about testing the Environment Canada process. She decided that Response Assessment could not test it. The director general also resolved the argument about the Team not helping decide Environment's priorities. She decided that they should help in the Environment Canada process. The Team resolved the arguments about re-establishing the Environment Canada Project because Environment should test (use) the Environment Canada process, more Environment and other federal department staff should be allocated to test the process, and more staff and time should be allocated to develop the process before broad consultation; weighting the ecological factor more than health and

socioeconomic factors; the process determining a single manager's priorities; risk assessors not helping decide Environment's priorities; the process not determining Environment's budgetary priorities; and not scoring current and emerging issues separately. They advised the Project should be re-established because Environment should test (use) the process *and* more staff (not time) should be allocated to develop it (not before broad consultation); and recommended Environment should weight the ecological factor more in the process, the process should not determine a single manager's priorities, risk assessors should help decide Environment's priorities in the process, the process could determine Environment's budgetary priorities, and Environment should score current and emerging issues separately in the process. And Environmental Protection resolved the argument about advising the Institute to establish the Environment Canada-Canadian Petroleum Products Institute Project. They advised the Institute to establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project. The other arguments were not resolved during this period, February 1994 to April 1994.

#### Evidence

In early February 1993, the Environment Canada Project continued as Environmental Protection proceeded to implement the revised Project plan, led by Environmental Protection/Response Assessment. Draft 3 of the Project report was to be mailed out formally once the covering letter on Environment letterhead was received.<sup>1</sup>

*The Environment Canada-Canadian Petroleum Products Institute Project.* Meanwhile (on the second day of the beginning of February Advisory Committee on Environmental Protection meeting), before the Mining Association/Environment Committee meeting, the Major Industrial Accidents Council director and Canadian Petroleum Products Institute Project contact discussed Draft 1 of the Environment Canada-Canadian Petroleum Products Institute Project report. Something urgent came up for the contact so they did not finish their discussion. She told the director that she would read the report and provide comments by early February. The director was to then revise the report for tabling at the Petroleum Products Industry Advisory Committee meeting with the recommendation that further development should be put on hold until

after comments on Draft 3 of the Environment Canada Project report had been received, or after the National Workshop in June, if it was to take place.<sup>2</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* At the Mining Association/Environment Committee meeting, the Major Industrial Accidents Council director (and Canadian Petroleum Products Institute Project contact) presented a short report on defining and ranking environmental issues. After the meeting, the director sent Draft 3 of the Environment Canada Project report to the second Association senior director. He wrote her (and copied the Environmental Protection/Response Assessment director general):

Thank you, on behalf of [the director general] for giving us the opportunity.... I hope that at least several of your committee members will ask to have a full copy... and will participate in the process by reviewing it. If there is any interest in having a small explanatory or review session on the methodology and framework, please let me know.

The director sent the presentation to the director general and wrote her, a week later:

I... participated in the joint presentation with the [contact] representing [the Canadian Petroleum Products Institute]. The reaction was hard to judge; I felt the government members present were more interested than some of the industry personnel, although a number of pertinent questions were articulated and responded to. One industry person... asked for confirmation that Environment... would attend a meeting of any group requesting further information: I gave it.

As mentioned to you orally the other day, the participant from External Affairs felt it would be useful if a briefing could be given to senior [External Affairs] staff - and to the [assistant deputy ministers] and [deputy ministers] (I am not sure whether he meant just the [External Affairs assistant deputy ministers] and [deputy ministers] or an interdepartmental group...). I advised him that until there is a greater level of confidence about the methodology and framework, I understood the Department would be reluctant to brief at too high a level (i.e. [deputy ministers]), but certainly would appreciate the opportunity to brief other staff in [External Affairs].

**The day after the Advisory Committee on Environmental Protection meeting, the Environmental Protection assistant deputy minister asked the director general to advise whether the Environment Canada-Canadian Petroleum Products Institute Project should be re-established as a priority, as shown below.**

The assistant deputy minister wrote the director general:

I have made a commitment to [the Advisory Committee] to have on its next agenda (1) update on testing of Priority Setting Methodology. I expect that [Environment's] front end, and [the Canadian Petroleum Product Institute's] back end will have been melded. Then, 2 or 3 issues run through the model to see if it works. Am I wrong in expecting this... Let's talk on my return.

**The assistant deputy minister updated the new Environment deputy minister on the Advisory Committee meeting, including his decision to re-establish the Environment Canada Project.** He wrote him (and copied the director general), "This committee has recently finished two days of productive meetings... I would like... to inform you of decisions resulting from this meeting."

In the attached six-page summary of the meeting regarding "setting priorities for environmental protection," it was written:

Stakeholders, especially industry, have been pressing for a more explicit process of priority setting, so that companies can more effectively channel their resources.

[The Committee] was instrumental in encouraging Environment... to undertake a major effort to develop a transparent priority setting system to guide both the Minister and the Department in determining the response to pollution problems....

Action: Lead - [director general]

- test the methodology within Environment... and report its findings at the next [Committee] meeting...
- develop a list of priorities by .....
- based on [the Manitoba Environment deputy minister's] support and willingness to have [the Canadian Council of Ministers of the Environment] involved in the testing of the methodology, determine to what extent the [Council] would like to be involved.

Regarding the review of the Committee, it was written, "Environment... and Industry... have conducted an internal review of the effectiveness of the advice provided by [the Committee]. It was agreed that this Committee has evolved into one of the most important consultative multi-stakeholder groups for both departments."

And regarding the Strategic Options Project, it was written:

[Committee] members were consulted on the development of a Environment... process to more consistently apply an open, transparent and accountable method of decision-making and a more predictable path forward on priority issues.

Action: Lead - [Response Assessment/Options Evaluation director]

- ...solicit [the Committee] to provide advice on [the Strategic Options Project] within the next few weeks.<sup>3</sup>

*The Environment Canada-Canadian Petroleum Products Institute Project.* A Canadian Petroleum Products Institute/Board of Directors meeting was held. **The**



**Environment deputy minister re-established the Environment Canada-Canadian Petroleum Products Institute Project as a priority for Environment, as shown below by excerpts from an Environmental Protection/Pollution Prevention director general's memo.**

The Pollution Prevention director general wrote the Environmental Protection/Response Assessment director general:

I was at the... meeting... for 1.5 hr; with the [deputy minister]. A good discussion altogether. Just to tell you that 'priority setting' is still very high on their mind - several questions/statements about the initiative. For you to know - the [deputy minister] is expecting us to keep on pushing on this one.<sup>4</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* The Environmental Protection/Response Assessment director general copied the Environmental Protection assistant deputy minister's memo and Environmental Protection/Pollution Prevention director general's memo to the Major Industrial Accidents Council director and Response Assessment senior advisor. (She also copied the assistant deputy minister's memo to the Response Assessment/Stakeholder Relations advisor.)<sup>5</sup>

*The Environment Canada Project.* The Major Industrial Accidents Council director sent Draft 3 of the Environment Canada Project report to about 200 recipients, including the Director General Steering Committee, Advisory Committee on Environmental Protection, Canadian Environmental Protection Act/Federal Provincial Advisory Committee on Environmental Health, National Air Issues Coordinating Committee, Priority Setting Workshop and Environmental Group Workshop participants, Conference Board/Committee on Sustainable Development (Business & The Environment Research Program members), and a number of individuals, for comment by mid-March. Distribution was delayed one and a half weeks because a covering letter was not prepared due to the unexpected absences of the Environmental Protection/Response Assessment director general and her assistant. The director was to send Draft 3 to about 100 more recipients, including the Canadian Petroleum Products Institute Task Force (Environmental Priorities Working Group), Canadian Standards Association/Environmental Risk Assessment Technical Committee, Environmental Protection regional directors, Canadian Council of Ministers of the

Environment/Environmental Protection Committee, and Canadian Council of Ministers of the Environment/Strategic Planning Committee, over the next several days, as the distribution lists were obtained and verified.

The Response Assessment director general wrote recipients in the covering letter (dated the end of January):

The report... will continue to evolve. It is planned that a more formal public consultation will take place in 1994, perhaps through a National Workshop, when some of the methodological wrinkles and still unanswered questions have been answered by this round of review. [The Major Industrial Accidents Council] has agreed to help us in the task of circulating draft three and collating comments for consideration by the project team.

She asked for their help "in doing so" and to send their comments to the director.<sup>6</sup>

*The Environment Canada-Canadian Petroleum Products Institute Project.* By early February, the Major Industrial Accidents Council director had not received comments from the Canadian Petroleum Products Institute Project contact on Draft 1 of the Environment Canada-Canadian Petroleum Products Institute Project report. He had tried unsuccessfully to contact the third Canadian Petroleum Products Institute senior director about this. Until there was further word, the revision was on hold.<sup>7</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* **The Major Industrial Accidents Council director updated the Environmental Protection/Response Assessment director general on "Priority Setting" (the Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects) in a three-page memo, and advised her to re-establish the Environment Canada Project as a priority, as shown below.**

Regarding Draft 3 of the Environment Canada Project report, the director wrote the director general, "What has not been determined is whether... it is appropriate to send copies to the [Canadian Council of Ministers of the Environment/Environmental Protection Committee]; perhaps you could advise me on this point." Regarding the Major Industrial Accidents Council contract, he wrote, "We are therefore largely up-to-date on the planned provisions..., which I hope will soon be over to us." And regarding other activities, he wrote:

We did not... meet with [the Response Assessment senior advisor] and others as originally planned [in late January], and there are some things to be discussed regarding the development of the Case Book Data, and [the senior advisor's] suggestion for a Mock Scanning and Scoping Exercise within the Department and with some Stakeholders (which I would encourage). If you... establish such a meeting, I will endeavour to meet your available time.<sup>8</sup>

*The Environment Canada Project.* By now, the Environmental Protection/Response Assessment senior advisor began drafting a discussion paper on "priority setting" in which he "addressed concerns" about its use in Environment decision-making. The sections included: use in multi-stakeholder decision-making, the need for an ecosystem perspective, sustainability as a goal, prevention vs control - use of the method in the life cycle management of issues, perceived fairness - role of public input and values, and uncertainty and the consequences of error.

The senior advisor met with the Response Assessment director general. **Before the meeting, he sent the director general an agenda, and advised her to re-establish the Environment Canada Project and to establish the Environment Canada-Strategic Options Project as priorities, as shown below by excerpts from a senior advisor's memo.**

Regarding the agenda, the senior advisor wrote the director general:

Role and Responsibilities

- what are my duties and assignments?
- scope of [Major Industrial Accidents Council] contract

Access

- how frequently and by what means?

Priority Setting Activities - Need for a Meeting

- discussion paper
  - methods paper - user guide
  - case studies
  - trial run
  - national workshop
  - [Canadian Petroleum Products Institute] case studies
  - joint [Canadian Petroleum Products Institute-Environment Canada] method

Misc.

- correspondence and briefings
- project files
- [United States Environmental Protection Agency] conference
- current workload and involvement
- other contacts [Canadian Environmental Network] & [Consumers Association of Canada]

The senior advisor also wrote:

...My preferred approach would have been to:

- host a brainstorming session to get all concerns on the table
- prepare a discussion paper to solicit comment
- generate a decision document
- amend the [Priority Setting] method
- trial run

I would like permission to circulate [the discussion paper] to the priority setting team for comment. I feel that we should be openly collaborating with [the Response Assessment/Options Evaluation director] to draw the [Priority Setting] and [Strategic Options] processes together.

I have met twice with [the Major Industrial Accident Council director] and as a result have generated a proposal for a trial run of the [Priority Setting] method in preparation for a workshop later this year.

I will be preparing a trip report about the [Agency] Meetings... and this will be on your desk next week.

After the meeting, the senior advisor told the director that he was now the "coordinator for the project and the repository of all communications." The director sent the Environment Canada Project file and "the several lists of addressees used for the distribution so far" to the senior advisor (and copied the director general's assistant). He wrote him:

For clarity sake, my path forward is to:

- continue to distribute Draft 3 [of the Environment Canada Project report]...
- pursue comments from those to whom Draft 3 has been sent....
- collate the comments on Draft 3
- review those comments with a small yet to be assembled editorial/project team (such as we had for Draft 1 and 2 including yourself), and
- prepare Draft 4.

I am also responsible for producing the integrated version of [the Canadian Petroleum Products Institute-Environment Canada] methodology. ....For the time being I am retaining that file...

....A composite list of the addressees to whom Draft 3 has been sent is... being prepared... All of these were at the least somewhat repetitious and out of date given some of the re-organization that has taken place....

...No briefings have taken place... other than those mentioned at the [Director General] Steering Committee which you attended....

...I support the need to complete the Case Studies (and distribute the... Book) and the Mock Scanning and Scoping exercise...

...I will copy all communications on this project to you.

The next day, in mid-February, the senior advisor sent his 15-page discussion paper to the director general (and copied the director). **He argued to her to re-establish the Environment Canada Project as a priority because Environment should test (use) the Environment Canada process, and that Environment should**

**not weight the ecological factor more than health and economic factors, as shown below.**

The senior advisor wrote the director general:

Attached please find some of my ideas about the priority setting process as promised. I have outlined the... process as I see it and addressed a number of outstanding points of contention, which I think we need to be thinking about, if we want buy-in. To sell the proposed method we are going to have to bite the bullet and try it out in a consensual based decision-making process. Any opportunity to try out the method/process that helps to address the concerns outlined in this paper will contribute to acceptance and use, otherwise there is a high potential for this work to gather dust on the shelf.

In practical terms the concerns I have outlined suggest...:

- We need at least three... deliverables to demonstrate the approach and to obtain the buy-in of stakeholder groups
  - Discussion Paper - outlining the goals of the process, principles governing its use and application to... [Environment] decision-making. This paper would have to link ranking issues and actions.
  - Users Guide - a step by step exposition of how to apply the method.
  - Workbook - a practical set of examples covering all four steps of the Process.

Right now... we are going to get... a report on the method. Once this report is accepted, it will have to be turned into a practical "how to do it" book by a professional editor to be useful. It will be mechanistic in nature....

- The... case book consists of... issues scored by individual professionals. Only one step of the process has been applied. A trial run of the complete method/process would identify many practical issues that have yet to be resolved.
- Assessments of environmental risks are notoriously fickle. The priority setting process should be viewed as a two-way dialogue by which concerns can be shared, information needs determined, differences resolved, and the participants level of understanding of an issue increased. It only [sic] after this point has been reached that you are likely to achieve some level of consistency in scoring an issue. The advantage of this process is that we may not have to resort to some dispute resolution process to achieve consensus about the risks posed by an issue and about the necessity of taking action....
  - Ecosystem health is a necessary but not... sufficient condition for human health or economic welfare. We can not impose the view that ecological aspects of environmental issues are more important than other considerations. Nor should we aim to create a composite score. We should provide a comprehensive overview of each issue because the choices or decisions that have to be made lie in three distinct domains.
  - Sustainability enters into the priority setting process in the... definition of benchmarks used to score various risks. Additional decision rules or principles will be required to safeguard the welfare of future generations.
  - ...Opportunities for prevention can be more easily identified if we score issues by lifecycle stage.
  - If the relative priority of an issue varies from year to year it will undermine the markets for technological innovation and the use of economic incentives. Therefore it is necessary to establish a planning horizon over which to scan issues and multi-year timeframe for establishing priorities.

- ....Studies of public perception have shown that more resources will have to be devoted to issues that pose involuntary risks, are poorly understood, hard to control and have potentially catastrophic consequences.
- A priority setting process should be only used to frame and gauge the relative importance of issues to help formulate a portfolio of response strategies.
- Savings are made through improved coordination and targeting of efforts. Further saving can be made by foregoing unnecessary data collection, by more timely action, and by choosing better response options.

I suggest that the concerns outlined in this paper serve as a backgrounder for our discussions with [the director] about the path forward... I have sent him a copy of my comments.

The discussion paper now also included sections called the context of priority setting, basis for concern, goal of priority setting, strategic direction, overview of the priority setting process (including criticisms and concerns), the potential for innovation and use of economic incentives, how are resource savings made, and concluding comments. Regarding criticisms and concerns, the senior advisor wrote:

Although it may sound like the product we have in hand is... an all purpose toolset, and that the only remaining questions are how and when to use it, further consideration should be given to the peer review of the design of the toolset and its trial use within a multi-stakeholder decision-making process.

The process or method is still a work in progress. It is now time to address the criticisms and concerns of our detractors. We have been accused of duplicity. It has been suggested that all we really want is an easy way to cut our budgets. I have heard the term "triage" used by both proponents and critics: at best priority setting is an excuse for not tackling the full range of environmental issues and at worst it is simply a cover up for dropping certain programs and regulations. It has also been said that priority setting structures choices among existing ways of doing business and although the benefits of incremental improvements in pollution control programs may be substantial, it avoids opportunities for fundamental change. It adds to existing uncertainty about the standing of a given issue from year to year, undermining markets for investment and innovation. So called expert approaches are out of touch with public perception and political reality. The [environmental groups] have said that we have lost sight of the big picture and will not deal with the underlying causes of environmental problems such as population growth, over exploitation of natural resources and excessive consumption. And so on.

Regarding context of priority setting, the senior advisor wrote:

Environment... states in its mandate.... In providing results oriented leadership.... As a knowledge based organization, [Environment's] policy interventions and program delivery plans must not only reflect changing circumstances but also scientific advances in understanding of the world around us.

Regarding basis for concern, "An early consensus must be reached about decisions which can be taken in spite of scientific uncertainty while knowledge gaps are filled....

Science, public values and economic self interest will all contribute to priority setting."

And regarding goal of priority setting:

The purpose of priority setting in environmental protection is to help allocate resources and effort to portfolio of response strategies in a manner which is proportionate to the potential reduction of risk to the environment. If sustainability is the goal, priority setting will require empowerment of decision-makers, the commitment to involve partners, stakeholders and public interest groups, the use of judgement (qualitative knowledge and understanding), and the acceptance of uncertainty.

Regarding overview of the priority setting process, the senior advisor wrote, "The proposed approach.... is meant to bridge the gap between the initial onset of an issue and the time when a full scale scientific assessment of an issue has been made."

Regarding sustainability as a goal, "It is the role of science and economics to measure.... Because of the scientific uncertainty that surrounds many environmental issues...." Regarding the potential for innovation, "If an issue's position in the budgetary 'pop chart' rises and falls at whim.... Scientists require some degree of certainty to plan and budget their efforts." Regarding perceived fairness, "When so-called experts reduce expected or modeled harm to humans or ecosystems.... We have the means of telling decision-makers who wins and loses." And regarding uncertainty:

Managers and professionals frame issues in ways to preclude uncomfortable questions about their judgement, performance and trustworthiness.... Linear thinking prevails.... To compensate for these shortcomings and other weaknesses in extrapolation, "safety"... factors are applied.... Issue managers faced with shrinking budgets realistically ask: how much science is enough? On the other hand, the public wonders why we do not spend more....

An environmental priority setting process can be helpful, in circumstances where decisions involve a substantial amount of public controversy and scientific uncertainty.

The senior advisor concluded:

This method/process can only succeed within the context of a multi-stakeholder decision-making process. A discussion paper... should be prepared. Once the report on the framework and method has been accepted we should develop a users guide... A realistic trial run of each step of the method must be planned. The first trial run would involve a scanning and scoping exercise led by a multi-stakeholder decision table (eg [Advisory Committee on Environmental Protection], [Director General] Steering Committee). The presentation of a professionally led environmental scan would be followed by a screening exercise, where decisions are taken about the significance of issues and composition of the list of issues to be scored and ranked is decided. The decision table would then commission panels of

subject matter experts to characterize and score the issues. These issue profiles would then be collated for a ranking exercise subsequently undertaken by the decision table. The decision table would then recommend a portfolio of response strategies: manage; monitor or assess and basic research. Options for action would then be ranked in terms of their cost.

His last two points were not included in the outline of Activity 3 for the detailed revised plan.

(The senior advisor also sent his discussion paper to me.)

By now, the director expected to have the comments on Draft 3 of the Environment Canada Project report collated by the end of March for consideration by "a small project team (basically the federal people who participated at [the Environmental Group] Workshop)" who were to then give him instructions for revisions. Draft 3 and Draft 2 of the Case Studies Workbook were to be submitted to the Director General Steering Committee for consideration in early April at their meeting. A commitment to hold a national Workshop was to be made then.

Meanwhile, the Resource Futures facilitator sent a promotional package to the director in early February and he gave it to the Major Industrial Accidents Council executive director. In mid-February, the director updated the facilitator on the Environment Canada Project and wrote her (with a copy to the senior advisor), "It is certainly my intention, should [the Council] be asked to organize the Workshop, to suggest that it be a collaborative effort with [Resource Futures] because of companies [sic] facilitating skills."

In mid-February, the senior advisor sent the early February Environmental Protection assistant deputy minister's memo and Environmental Protection/Pollution Prevention director general's memo to the director and wrote him, "We should discuss on Friday" (at the Response Assessment director general meeting).

By now, the Response Assessment ecological risk analyst had been asked to circulate the case studies, meet with professionals who scored a given issue differently, and resolve any points of contention. He was to then produce Draft 2 of the Environment Canada Case Studies Workbook. Draft 2 was overdue because the ecological risk analyst had been on a training course during the last two weeks of January.

The senior advisor and director finally met with the Response Assessment director general. Before the meeting, the same day, the senior advisor drafted a three-page briefing note on "clarifying the roles and responsibilities and possible deliverables



for the next phase of the Priority Setting Project," and sent it to the director general and director. **He argued to them to re-establish the Environment Canada Project as a priority because Environment should allocate more resources (including Environment and other federal department staff) to test (use) the Environment Canada process, as shown below by excerpts from the senior advisor's note. Also shown, he advised them to advise other federal departments to re-establish the Environment Canada Project, and questioned whether the Environment Canada-Canadian Petroleum Products Institute-Strategic Options and Environment Canada-Strategic Options projects should be established.**

Regarding background, the senior advisor wrote:

The Advisory Committee on Environmental Protection..., last fall, issued essentially two challenges to the department: ...Merge the [Environment-Canadian Petroleum Products Institute] approaches; and... Develop a Priority list for Canada. After the workshop for [Institute] members, ...[the Institute] also wants to see one approach developed for Canada and to encourage the participation of other industrial sectors in the priority setting process.

He did not mention the Environment, other federal department, and Environmental Group workshop participants.

Regarding current situation, the senior advisor wrote:

The [director general] has retained [the director]... to lead stakeholder consultations on the draft [Environment Canada] report, to integrate the [Environment-Institute] approaches, to prepare any briefings or presentations required, and to possibly organize a workshop in June. [The Canadian Council of Ministers of the Environment] wants [Environment] (and possibly [the Institute]) to contribute sufficient data ('case studies of issues') to validate the [Environment] (or an integrated) approach. The prospective role of priority setting in departmental decision-making processes and the possible development of a list of priority issues for Canada have been left in abeyance for the moment.

Following the recent [Advisory Committee] and [Canadian Council of Ministers of the Environment] Environmental Protection Committee meetings we have received two additional requests. We have been requested by the [assistant deputy minister]... ...We will be asked to report back to [the Environmental Protection Committee].... Moreover, when we report back... we must take into consideration the 1993 [Council] Environmental Scan.

Considerations included:

- [Environment] Project Team  
[The director's] role must be clarified: either producer-editor or subject matter expert-author. It says in the offer of service that [the Major Industrial Accidents Council] will collate and present the comments on draft #3 for consideration of the

[Environment] project team. In the minutes of the last [Director General] Steering Committee, it suggests that he will merely "assist the project team in finalizing the report." Only a one week window of opportunity in March has been provided for their input and 2 to 3 weeks for write-up. Many aspects of the method are unspecified, yet unresolved and potentially contentious.

- Joint [Environment-Institute] Approach  
...[The director and Canadian Petroleum Products Institute Project contact] are simply proposing to substitute the [Environment] approach to issue ranking for [the Canadian Petroleum Products Institute] Steps 1 & 2. If... accepted it will simplify this task greatly. There will be some degree of overlap and duplication. The linkages between [the Canadian Petroleum Products Institute] Steps 3 - 6 and Strategic Options... Process should be worked out. The [Institute] approach to ranking options is pollutant driven and may not be suitable for other industrial sectors.
- Methods Paper - User Guide  
The report that [the Major Industrial Accidents Council] is going to produce will likely be neither a policy paper nor a practitioners guide. ...We will need a users guide....
- Case Studies....
- Trial Run  
We are under pressure to produce "real life" examples where the priority setting is being used and can not wait until some workshop to work the "bugs" out. A trial run would test each step of the process incrementally... It would show management commitment and confidence.... A trial run would include....
- Use of [Priority Setting] Method in [Environment] Decision-Making - Discussion Paper  
A discussion paper is needed that outlines... and the selection of the most cost-effective option for action and the agencies who should respond.

The senior advisor recommended:

- [Environment] Project Team  
This team should be reconstituted (maximum 10 persons). The [director general] should request professional staff representing our partners to serve in an advisory role. The team's role should be review and recommend amendments to [the Environment Canada] method that [the Major Industrial Accidents Council] will implement, and after revisions have been made, to recommend adoption of final report by... Steering Committee. [The senior advisor] could act as secretary.
- Joint [Environment-Institute] Approach  
...There is a high possibility that a joint [Environment-Institute] approach may be touted as the way to rank issues and options. It is essential that [Environment] adopt a position as to its suitability for general use (eg. sector specific) and if necessary that [Environment] develop its own approach (eg. for its own decision-making, possibly linking [Priority Setting-Strategic Options] processes.)
- Methods Paper - User Guide  
The method/process must be finalized before additional... case studies are requested or it is used in full scale trial run or workshop. Provision must be made for the development of a users guide.
- Case Studies

The number and scope of the case studies needed to test and demonstrate either... the [Environment Canada] method and/or... the integrated [Environment Canada-Canadian Petroleum Products Institute] method must be determined. If additional case studies are required the [director general] should request subject-matter input from the appropriate responsibility centres within [Environment] (or [the Institute] if necessary). Within [Environment] this task should be resourced (see proposal for trial run) and [the senior advisor] could coordinate preparation of the necessary materials.

- Trial Run

An option for a trial run should be chosen and resourced. (See proposal).

- Use of [Priority Setting] Method in [Environment] Decision-Making - Discussion Paper

Consideration should be given to developing a discussion paper in time for the proposed June workshop or September meeting of [the Advisory Committee].

The senior advisor also sent the late January Environmental Protection Committee meeting minutes and notes on the Canadian Council of Ministers of the Environment planning process to the director.<sup>9</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* **At the Environmental Protection/Response Assessment director general meeting, the director general resolved the argument about testing the Environment Canada process. She decided that Response Assessment could not test it, as shown below by excerpts from the Major Industrial Accidents Council director's, Response Assessment senior advisor's, and director general's assistant's meeting notes.** (The four sets of notes are presently separately because they differ in terms of what decisions were made, and whether the decisions were made during the meeting, after it, or at all.)

The director general, director, and senior advisor met to decide "who does what over what time-frame." The assistant and Environmental Protection/Pollution Prevention/Industrial Sectors chief also attended the meeting. The agenda items included: progress on deliverables, other forums - the Canadian Council of Ministers of the Environment and Advisory Committee on Environmental Protection, upcoming Canadian Petroleum Products Institute meeting, and path forward.

The director wrote:

[The director general] opened the meeting by indicating that [the Environmental Protection assistant deputy minister] was still very much committed to the project and wanted to be able to report positively to the [Advisory Committee on Environmental Protection] meeting [in early May]....

She also reported that at the [Canadian Council of Ministers of the Environment/Environmental Protection Committee] meeting...

[The director general] then asked where we were at.

I reported that I was on track, i.e.

- ....We were awaiting addresses for [the Canadian Council of Ministers of the Environment] for the [Environmental Protection Committee] and [Strategic Planning Committee] distribution [of Draft 3 of the Environment Canada Project report].
- Follow up for the distribution would begin early in March, but in view of the time delay in getting... started..., I asked if there was any wish to delay response by a week. The response was no, try to hold it to the original schedule.
- I indicated that the first draft of the integration... had been prepared, but no comments had been received... from [the Institute]. I was endeavouring to contact [the third Institute senior director] to clarify the situation for [the director general's] attendance at the [Petroleum Products Industry Advisory Committee] meeting...
- I indicated that I had transferred all files to [the senior advisor] and would provide current distribution lists from time to time.

[The senior advisor] proposed that we have to include in the development process, a peer review of the methodology. After some discussion, it was agreed he and I would work together to develop a short list of persons from other countries who might be asked to look at Draft 3. No honorariums were to be paid.

[The chief] noted that we should recognize in the methodology, the existence of international obligations (agreements and conventions) that might place the government in the position of having to institute issue management programs even though the methodology would rank the issue relatively low.

[The director general and chief] left the meeting before it ended....

[The senior advisor], in response to questions about the case book... reported that:

- he... would follow up [with the Response Assessment ecological risk analyst] to ensure the Case Book was finished..., and
- he advocated a full scale screening and scoping process to develop new issues, which... would cost a minimum of \$6K and possibly \$15K.

Discussion on the latter proposal resulted in a firm agreement that [the senior advisor] should... examine what methods the Department has of determining environmental concerns, problems and events from within existing information flows into the Department, i.e., to sample the Ministerial Correspondence flow and the Communications Group's regular assessments of public concerns. The [Canadian Council of Ministers of the Environment] scan would also be a source of information. The basis for this being that the process should take these sources into account, and they were relatively low cost initiatives, since there must be some management system in place which is trying to identify and to categorize subject areas of concern to the general public - this being the essence of scanning!

Other discussion occurred regarding the degree to which the team should develop and analyze data for the methodology testing. It was agreed that priority would be given to data for the departmental methodology, and that [the Institute] should be encouraged to contribute its share of work.

Regarding progress on deliverables, the senior advisor wrote (his notes, written after the meeting, are in italics):

- copies should be distributed to [the Environmental Protection Committee] through [the Pollution Prevention director general] and to [the Strategic Planning Committee] through [the Environmental Protection/Intergovernmental Harmonization director general] [action: director]
- follow-up letters and phone calls will be made by [the Major Industrial Accidents Council]...
- the possibility of peer review should be investigated [action: senior advisor] *[other countries and universities]*
- [The director] made a presentation to [the Major Industrial Accidents Council]. [The senior advisor] should attend future presentations...
- ...The case book... may require further work before it is distributed [action: senior advisor]

Regarding other forums, the senior advisor wrote:

- the [assistant deputy minister] has requested 2-3 examples... for the next [Advisory Committee on Environmental Protection] meeting... [action: director]
- [The Institute] will have to provide data for [the Committee] presentation and [the Response Assessment director general] will discuss the matter with [the assistant deputy minister]...
- [the Pollution Prevention director general] will need 2-3... examples... for next [Canadian Council of Ministers of the Environment] meeting... [action: director]
- [the senior advisor] will draft a memo asking [the Pollution Prevention director general] to provide clarification about the scope of the request (presentation based on [Environment] or merged [Environment Canada-Canadian Petroleum Products Institute] process)

Regarding the upcoming Institute meeting, the senior advisor wrote:

We need to adopt a position vis-a-vis Steps 3-6 of [the Canadian Petroleum Products Institute] process: that is to say will it be included within the [Environment Canada] priority setting process or dealt with through the [Strategic Options] process. We should discuss this matter with [the Response Assessment/Options Evaluation director]. [action: Response Assessment director general].

And regarding the path forward, the senior advisor wrote:

- [Environment] Project Team  
[The Response Assessment director general] should request our partners to review the collated comments on the report and [the Major Industrial Accidents Council's] suggested response. The team role would be to review proposed amendments and to recommend submission of final report to the [Director General] Steering Committee. [The senior advisor] could prepare request for nominees and act as Secretary to the committee. [action: senior advisor and director general]
- Trial Run  
We need to have "real life" examples of where this method can be used. A trial run would... It is only through hand-on experience of own [sic] managers and professionals and other stakeholders using the method that we are going to build the confidence within the department and the buy-in of stakeholders.... We are

going to need a users guide... There are no funds available to support a proposed trial run this [fiscal year]

- Scanning & Scoping
  - [The senior advisor] will develop a draft scanning and scoping of issues based on secondary sources (eg. [the Canadian Council of Ministers of the Environment] and Departmental scans, Science Forum, Rawson Academy's EcoScan, an analysis of ministerial correspondence and key informants)...
- Screening
  - The [Environment] team could be asked to review a preliminary screening of issues and recommend whether... we need more case studies to validate the method...
- Scoring
  - The [Environment] team could also be asked to review the existing case study book
  - If more case studies are needed, we need to build this into our workplan. [action: senior advisor]
  - If additional case studies are needed we will need to ask the... Steering Committee at the next meeting to nominate panels of experts to characterize issues.

*[method by Sept]*

The senior advisor also wrote:

- [Pollution Prevention director general] - [Institute], one method for everyone - didn't go over well
- peer review, 4-5, US, Canadian, UK, [United Nations Environment Program - World Health Organization]
- issues, biotech, chlorine, no, [Response Assessment director general]

The assistant wrote:

- [Institute] came down wanting "1 methodology to fit all"....
- [first Canadian Chemical Producers Association senior director] pushing to find out where are w/deliverables....
- peer review - academia/US [Environmental Protection Agency]... cautious about to whom to send materials....
- need for consistent messages...
- confusion... policy aspect vs methodology....
- [Association] skepticism....
- [Environment] could review someone's action priorities... position to partner....
- [Environment] needs to use [Canadian Petroleum Products Institute] methodology... flawed....
- ...may not need an explicit action prioritization process in strategic options process...
- setting out scientifically-based bkgd for action plans & obligations....
- ...scientific basis is legitimate...
- ...final draft w/[Advisory Committee on Environmental Protection] mtg [early May]....

- wkshp - Nov/93... [Environment] to show how works....
- ...clustering... use [Canadian Petroleum Products Institute] method
- [Canadian Petroleum Products Institute Project contact] Harvard 'til May 1994....
- scope w/own science cmtty w/i dept... 10-12 people w/representative disciplines... project team together again....
- alternate paradigm [Canadian Environmental Network]<sup>10</sup>

*The Environment Canada-Canadian Petroleum Products Institute Project.* After the Environmental Protection/Response Assessment director general meeting, by late February, the Major Industrial Accidents Council director contacted the third Canadian Petroleum Products Institute senior director about Draft 1 of the Environment Canada-Canadian Petroleum Products Institute Project report. The senior director was to send his comments to the director, the report was to be revised, accepted, and put on hold until Draft 4 of the Environment Canada Project report had been produced. The director then updated the Environmental Protection/Pollution Prevention/Industrial Sectors chief.<sup>11</sup>

*The Environment Canada Project.* **In late February, the Environmental Protection/Response Assessment ecological risk analyst (a Project Team member) revised Draft 1 of the Case Studies Workbook, and sent the Draft 2 text (reflecting the existing methodology) and his comments on the case studies and proposed trial run to the Response Assessment senior advisor. He argued to him and later the Major Industrial Accidents Council director (via the senior advisor) and Core Project Team (via the director) that the Environment Canada Project should be re-established as a priority because more Environment and other federal department staff - including experts - should be allocated to test (use) the Environment Canada process, as shown below.**

The ecological risk analyst wrote the senior advisor:

The case studies.... are not included here because of the large size of the file.... Since, however, these case studies were developed for the sole purpose of providing substance to the priority setting exercise, the emphasis must remain on the methodology for the time being. In due time, the issues will have to be characterized in a much more rigorous manner.

The generation of more case studies should be a process which is run in parallel to the methodology development. Your proposed... trial run... appears sound. It clearly illustrates the magnitude of a task like gathering timely and relevant information on case issues and especially on case studies, which are much more detailed. It also facilitates the process of obtaining case studies, doing away with having to rely on people's time and generosity for contributions. This was the case

for the existing case studies and the reason why we could only push so far to get what we needed. It appears that few people besides you and I are truly aware of the scope of this task.

Last fall, [the then Environment Canada Project manager] asked me to set up a workshop designed to generate more case studies. It would have been totally irresponsible... to go ahead within the climate of uncertainty and change prevailing at that time and since. Furthermore, if the aim... is to obtain well documented case studies, a workshop is not the proper forum: the process must be open and continuous, much like the process you propose.

I have also briefly looked through [Draft 3 of the Environment Canada Project report]. I was struck by the fact that key contributors no longer appear in the acknowledgement section. These people deserve to be named as they are responsible for the contents of the report.

The "climate of uncertainty and change" referred to the Environment restructuring.

(Meanwhile, at the end of January, a Queen's University director sent the research program of a Queen's University professor, also the Simon Fraser University professor, to the Environmental Protection/Response Assessment senior advisor for his comments. He had been included as a potential collaborator in the projects on the policy process, an effective regulatory system, and impacts of environmental policy. In late February, the senior advisor wrote the professor that he was interested and sent him his mid-February discussion paper on "priority setting" for comments. He also wrote him:

Up to now, the focus has been on developing a transparent method of ranking environmental issues for decision-makers (a way of comparing risks) that integrates the salient findings of the health, natural and social sciences. However to be useful, the method will have to be susceptible to incorporation within multi-stakeholder decision-making processes. Moreover, explicit linkages to sustainable development goals and ways of measuring and reporting progress still need to be developed....  
...Environment... has recently been restructured and the dust has not yet settled. My option has been picked up by... Environmental Protection... where I now work as a special advisor to the Director General of Response Assessment.

These documents were not in the Environment Canada Project file.)<sup>12</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects.* At the end of February, the Major Industrial Accidents Council director sent his Environmental Protection/Response Assessment director general meeting notes to the director general's assistant. The attachments - his written notes, and two documents handed out by the Environmental Response Assessment senior advisor but not discussed - were not attached.<sup>13</sup>



*The Environment Canada-Canadian Petroleum Products Institute Project.* **By now, the Major Industrial Accidents Council director revised Draft 1 of the Environment Canada-Canadian Petroleum Products Institute Project report, based on the Canadian Petroleum Products Institute Project contact's comments (forwarded to him by the third Canadian Petroleum Products Institute senior director).** Draft 2 was 36 pages long, not including the appendices, and basically the same as Draft 1, including the conclusions/next steps.

**The director sent Draft 2 to the Environmental Protection/Response Assessment director general (and copied the senior director and Response Assessment senior advisor), and advised her to re-establish the Environment Canada-Canadian Petroleum Products Institute Project as a priority.** He asked the director general to send him a list of people "besides the original [Institute] Task Force" (Environmental Priorities Working Group) who should receive copies. He wrote her, "At this stage, it is agreed that further development is, I believe, to be postponed pending development of Draft 4 of the Environment Canada methodology and the assembly of case study data." The director asked the senior director to send him the list of Group members and any others who should receive copies.<sup>14</sup>

*The Environment Canada Project.* **The same day, the Environmental Protection/Response Assessment senior advisor drafted a briefing note called Advisory Committee on Environmental Protection Minutes - Action Item on Priority Setting, and argued that the Canadian Petroleum Products Institute should be advised to establish the Environment Canada-Canadian Petroleum Products Institute Project as a priority because the Institute should test (use) the Environment Canada-Canadian Petroleum Products Institute process, as shown below.**

Regarding background, the senior advisor wrote, "Last fall [the Committee] set the following strategic directions... It was agreed that [the Committee's] role would be to..."

Regarding current status, the senior advisor wrote, "After the early February [Committee] meeting, the [Environmental Protection assistant deputy minister] asked... The draft minutes of this meeting also include..."

Considerations included:

- Is [the Institute] comfortable with [the Major Industrial Accidents Council director's] proposal to substitute the [Environment] approach to issue ranking for their own Steps 1-2?
- Do we have [the Institute's] cooperation? We should ask [the Institute] to collaborate with [the director] on a joint presentation of 2-3 examples (eg Greenhouse Gases, [Ultraviolet-B Radiation], Smog or Acid Rain) that run through all the steps of the proposed composite approach for the petroleum sector. We have already provided him with scored profiles of these issues. [The Institute] will need to provide him with data necessary to illustrate the remaining steps.
- Comments are due on the third draft of the [Environment Canada] methodology... by [mid-March]. [The director] should be able to collate the comments and submit his recommendations for [Environment] review so that we will be able to report back on our future directions by that date.
- We are preparing a trial scanning and scoping exercise based on secondary source information... A preliminary set of case studies (scored issues) should also be available for comment and circulation by [mid-March]. We hope to get the input of the [Environment] team who will select a trial list of issues to be scored and ranked and who may identify the need for additional case studies. We could use the next meeting of [the Committee] to get feedback on the first few steps of the process and potential list of issues we want to use.
- [The director] has proposed that the next meeting of the [Director General] Steering [Committee] be held [in mid-April]. This is the last date for input to the [the Advisory Committee] agenda and all material circulated to [Advisory Committee] members must be translated. We should request direction from the [director generals] as to course of action that we propose to pursue.

The senior advisor recommended "we formally request [the Institute] to collaborate with [the director] in a joint presentation of a composite approach for that sector" and "we make a progress report that outlines clearly our future commitments to [the Advisory Committee]."

The senior advisor also wrote on the note that a Canadian Environmental Network-Environmental Protection Standing Committee meeting was to be held in mid-March.

By the beginning of March, the senior advisor and Environmental Protection/Response Assessment director general met. The senior advisor wrote on his mid-February director general meeting notes, regarding the path forward, under Environment Canada Project Team, "prepare list project team," and under Trial Run, screening, "w/o team."

The senior advisor sent his mid-February director general meeting notes to the Council director for his input.

The senior advisor drafted a memo from the Response Assessment director general to the Environmental Protection/Pollution Prevention director general about the

Canadian Council of Ministers of the Environment/Environmental Protection Committee Meeting Action Item - Priority Setting. The Response Assessment director general wrote the Pollution Prevention director general:

The record of decision shows... that you have been asked to present "real life examples where this priority setting system is being used." We presume that they are referring to the Environment... proposal for Issue Definition and Ranking. ...It would be a good idea if you could provide me with some clarification about what is expected... We should discuss.

Draft 3 of the Environment Canada Project report was also circulated to Health's and the Major Industrial Accident Council's distribution lists. The Council secretary sent the senior advisor a copy of the distribution lists. In early March, the senior advisor wrote the director, "Please send a copy of your report to [the Agriculture director]" (a Core Director Working Group member).

The Canadian Labour Congress secretary-treasurer sent his comments on Draft 3 (discussed below).

The director reminded recipients of Draft 3 to review it and send him their comments by late March. He wrote them, "You were recently sent... the third draft... which has been prepared by a small group of Environment... staff and stakeholders to potentially assist the Department establish a system for prioritizing [sic] the issues it is facing." (I was also asked by the senior advisor for comments.)

The Environmental Conservation/Ecosystem Conservation/Ecosystem Initiatives (formerly Response Assessment) ecological risk analyst sent Draft 2 of the Case Studies Workbook to the senior advisor (and copied the Response Assessment director general). **The ecological risk analyst argued that the Environment Canada process should determine a single manager's priorities, as shown below.**

The ecological risk analyst wrote the senior advisor:

Future use of these case studies should take the following considerations into account.

...Most case studies are really case issues. Case issues are a generic description of an environmental issue. As an example, the SMOG problem is an environmental issue of national scale. Corresponding case studies pertaining to SMOG are urban air quality issues in Montreal... It is important to couch each issue in its proper spatial perspective before comparisons with other environmental issues are undertaken.

Environmental issues must be compared at the same scale. With the present methodology for scoring, a relatively large weight is given to the spatial extent of any... issue. Subsequent scoring and ranking of issues scored using a broad spatial

extent will position them in a high position of the priority list. This may indicate a real priority or it may reflect a bias in the case study sample being ranked.

The initial choice of case studies or case issues must be limited by ownership. It is useless to score and rank... issues over which a manager has no responsibility. ...Ownership is covered at the issue characterization level... Issues should be screened out at this point... ...The existing case studies should be re-evaluated and re-scoped from the standpoint of a single manager.

...Extent must be further refined. Extent can be expressed as a portion of the.. resource. It can also express the spatial distribution of the Stress-Exposure-Response paradigm. The spatial extent can be a percentage of the country... It can also be expressed in absolute units... All issues... must therefore be normalized to express the extent in the same format. Bear in mind that both resource percent and spatial extent should be used together to properly define an environmental issue.

A form format such as the one we discussed will go a long way in documenting case studies. The present form is very bulky from a word processing standpoint. It taxes the memory capabilities of all but the more powerful computers... I strongly suggest that the next form be designed using a data base format....

Before a new form is designed, the methodology should be finalized.<sup>15</sup>

**In mid-March, at the second Canadian Environmental Network-Environmental Protection Standing Committee meeting, the Network seemed to establish the Environment Canada Project as a priority, as shown below.**

A third Network senior representative and the Environmental Protection/Response Assessment director general (the Committee co-chairs), and the Response Assessment senior advisor, first Atmospheric Environment director, a Response Assessment/Non-government Organizations advisor, Resource Futures executive director, Sierra Club senior representative, and a fourth Network senior representative attended the meeting. "Priority setting" was added to the agenda, as requested by the Network.

[The executive director] questioned if [environmental groups] had received the September 1993 Priority Setting document and recommended that [environmental groups] be given more time to coordinate a response. [The senior advisor] will verify mail out. It was agreed by... participants that the... draft document needed to be reviewed in context of the September 1993 [Environmental Group] and November 1993 [Canadian Petroleum Products Institute] workshop. It was also agreed to put priority setting in context of broad policy framework. A formal request will be put forward to get consultation on-line. [action: senior advisor and executive director]

Other items on the agenda included: Climate Change, Canadian Environmental Network-Environmental Protection Employee Interchange (a 6-month assignment for an environmental group member in Response Assessment/Stakeholder Relations), and Role of Advisory Committee on Environmental Protection (added to the agenda as requested by Environmental Protection, "[the Network] expressed interest in being part

of the nominating process"). The next two meetings were to be held in late May and early September. Suggested agenda items for future meetings included Intergovernmental Harmonization and the Lobbyist Registration Act.

(The advisor sent the minutes to Environmental Protection director generals and directors, including regional, two months later.)

After the meeting, the senior advisor wrote:

- most recent draft - didn't receive copy
- [Network] didn't receive copy
- worried about it
- not successful in making linkages
- life its own [Canadian Petroleum Products Institute]
- [Environment] - endorsed method
- Sept/Nov workshop... rationale for not doing
- put it in bigger context... tool for inaction... suffering from indecision
- request... master emission reduction plan

After the meeting, the senior advisor wrote the Major Industrial Accidents Council director, "It came up today... that [the Sierra Club senior representative] and [executive director] had not received a copy of the report. You should perhaps verify by phone whether... the people at that [Environmental Group] Workshop got it."<sup>16</sup>

Meanwhile, from early to the end of March, twenty reviewers sent their comments on Draft 3 of the Environment Canada Project report, as shown on pages 391 to 409. (Draft 3 was circulated to about 300 recipients.) Half of the reviewers were from Environment and other federal departments (Transport, National Research Council, Health, and Industry). The rest were from a labour organization (Canadian Labour Congress), two provincial governments (Alberta and Quebec), two universities (Simon Fraser and Toronto), an industry association (Canadian Chemical Producers), and a consulting company (Angus Environmental). By the end of March, the Major Industrial Accidents Council director compiled the comments and sent them and his comments on the comments (a summary and analysis) to the Core Project Team for review at their meeting in mid-April. His comments on the comments are shown in italics.

**In early March, the Canadian Labour Congress secretary-treasurer (an Advisory Committee on Environmental Protection member) argued to the Major Industrial Accidents Council director (and copied the Environmental Protection/Response Assessment director general and fourth Canadian Environmental Network senior representative) that risk assessors should not help**

**decide Environment's priorities (vs hazard assessors, who should), as shown below.**

The secretary-treasurer wrote the Major Industrial Accidents Council director, and the director commented:

It is strange that [the Council] has been asked to handle the critical process since the organization is restricted to industrial accidents, not broader environmental issues.

We have supported priority setting in principle; but... there are still several outstanding problems with the scheme. The first... is that the scheme tries to evaluate, comparatively, different types of hazard and different types of detriment. We pointed this out in previous correspondence... [at the end of September 1993]. Existing systems of hazard assessment, e.g., for chemicals, do not suffer from this methodological difficulty: for examples, you should consult:

- Criteria to Identify Chemical Candidates for Sunsetting in the Great Lakes Basin...;
- Candidate Substances List for Bans and Phase Outs...;
- A Critique of the Ontario Hazard Assessment System...;
- [Accelerated Reduction/Elimination of Toxics] Criteria Sub-Committee Report...

Risk Assessment is a politically loaded and scientifically ill-founded technique which should be discarded in favour of Hazard Assessment. See, for example, Quantitative Risk Assessment and the Illusion of Safety...

Further, there are two major problems with the scheme... It is entirely unclear what is to be "fed into" the scheme, e.g., issues such as ozone depletion or hazards collectively such as groups of chemicals; or individual contaminants/hazards. It is also unclear whether you could make a consistent decision on this matter which embraces all the categories of risk, i.e., ecological, human health-related and socio-economic. Similarly with outcomes: the comparative risks to ecosystems, human health and human societies have to be decided arbitrarily, i.e., non-scientifically.

Finally, there is no consideration of how you evaluate preventive or remedial action... in a way that is commensurate with the evaluation of the... detriment. This is not a concern about "pet issues"... but a genuine concern about real environmental issues and their proper resolution. *[I think he confuses risk and hazard himself, and I don't know what to make of his comments overall.]*

The Environmental Conservation/Ecosystem Conservation/Water Research director sent his and the comments he requested from the Water Research science liaison officer (a Project Team member) to the Major Industrial Accidents Council director. **The Water Research director and science liaison officer argued that the Environment Canada Project should be re-established as a priority because more Environment and other federal department staff - including experts - and time should be allocated to develop the Environment Canada process before broad consultation, as shown below.**

The science liaison officer wrote the Water Research director, and the Major Industrial Accidents Council director commented:

...I wrote you [in July 1993] (before and after the multi-stakeholder workshop...) to advise you of progress and my concerns that the pressing schedule resulted in "a process which needs a lot more work. ...It is complex and cumbersome and, in some areas such as assessing the relative priority of issues of different scale..., it is still inadequate." I subsequently made this and other concerns repeatedly known to the coordinators in reviews and in refining the case studies but it appears they have been unable to rectify the situation largely... because they are locked into a process dependent on a series of ever broader consultations and workshops without... the ability to reconvene the original Task Force [Project Team] ...to address the fundamental flaws.

As I see it, they are these:

- The method cannot readily compare issues of differing scales in space or time.... Any imperfections in sorting will bias the resultant priorities established within each set. Priorities between sets... cannot... be objectively established. Similarly, issues which differ in time scale pose problems... *[I think this is recognized as a weakness, it would have been useful to have suggestions as to how to do it.]* Compounding this is a present inability to include whether a stress is approaching or has exceeded a threshold level such as that at which impacts are irreversible.
- There needs to be a way to specifically ensure that the state of knowledge does not overly bias priorities away from research and investigation. This was noted during the [Environmental Group] Workshop as a need to give prominence to emerging issues. I had phrased it as recognizing and assessing issues on the basis of what is known, suspected or feared on the best scientific evidence and assessment. All three types of evidence would be treated equally in terms of establishing an issue's relative priority but the recommendations for action would differ... *[Perhaps all we need to do is strengthen the discussion of this at an appropriate place in the text.]*
- There are a number of aspects of the response of ecosystems to stress that are not fully incorporated and in my opinion should be. These include non-linearities and response thresholds...; methods for dealing with primary, secondary and tertiary causes or effects; lagtimes between application or removal of a stress and its ecosystem response...; purely precautionary actions in the face of unknown risks of nightmare proportions...; how to objectively separate issues which are inevitably linked at some level; how to address ultimate causes (population/demographic growth, greed, injustice, natural resource exploitation, excessive carbon fuel consumption, societal subsidization of external costs, etc.) and the setting of priorities at an appropriate level of amalgamation... *[This suggests additional text dealing with [stress-exposure-response].]*
- The mathematics of calculating scores has never been resolved... ...There is no agreed-upon method for setting priorities based on a single factor much less all three. *[This is known, but what is the comment on the proposed method?]*
- The aspect which compromises the validity of the whole process is an inability to balance ecological, socio-economic and human health factors... a problem the Task Force never had time to fully deal with. It involves the creative manipulation of severity, extent and trend criteria for the three categories... so as to achieve an equivalence... If all else fails, weighting can be used... *[There is no comment on the proposed system of ranking on the basis of only one factor score and allowing stakeholder intervention to include others as appropriate. I get the sense that there is an expectation of being able to get closer to perfection, whereas others recognize that this provides a first cut at rendering priority setting less dependent on intuition or public pressures.]* If this were the only problem, then it would be

logical to have a large Workshop focussed on verifying a proposed balance since the trade-offs are extremely value-laden....

The result of these inadequacies is that Headquarters are in the somewhat awkward position of sending out material widely for review and proposing a National Environmental Issues Priority Setting Workshop based on an incomplete Task Force assignment. At present the best that can be proposed is a rather complex series of clusters and cascading boxes... which is a very dubious improvement over intuitive priority setting.

I believe that the method has real potential and that what has been done by the Task Force has validity. The whole thing should be handed back to them with instructions to:

- resolve and simplify the method;
- respond to all comments and criticisms...;
- generate an agreed-upon means of balancing considerations and calculating priorities;
- develop a priority list of about 50 diverse issues using the proposed method; and
- hold a workshop focussed on the question of equivalence and trade-offs between the three factors, including as working material the effect of 3-5 alternative proposals on the priority of the 50 issues.

The Water Research director wrote the Major Industrial Accidents Council director, and the Council director commented:

I have had the... report reviewed by [the scientific liaison officer].... ...His and my feeling is that a complex and potentially valuable assignment by the Task Force was never properly completed for lack of time. As a result, the current process of refinement through broad consultation is seriously, perhaps fatally, flawed. His recommendation, with which I agree, is that the existing plans be put off until... the original Task Force can be recalled to address the many concerns and inadequacies which have since been raised. *[Is not the national workshop intended to respond at least in part to this?]*

An Alberta Energy representative wrote the Major Industrial Accidents Council director, and the director commented:

We agree that the environmental agenda is very crowded and that there exists a pressing need to prioritize [sic] issues.

The methodology developed by Environment... represents a comprehensive set of building blocks that can be assembled in accordance with the value judgements of the user... As such, the methodology should be applicable for a variety of users. We look forward to seeing this methodology applied in "the Case Study Book."

In the absence of the... Book, some discussion would be helpful of what is an ecosystem with respect to the ranking scheme and what is an issue to be ranked and how do you determine ranking if a given issue affects more than one ecosystem.

With respect to the "Proposed Clustering Scheme for Environment...", I find it understandable that "Ecological Ranking" should be considered the primary concern for Environment... but I believe the public would consider human health to be the most important factor, even for Environment..., particularly since Environment... sets standards such as for ambient air quality. *[!]*



We appreciate the efforts of Environment... to address this need and look forward to... continued dialogue.

In mid-March, the Transport senior advisor wrote the Major Industrial Accidents Council director:

I have nothing to add to the comments I made during the preparation of the document... I understand that the next steps involve a workshop and subsequently its entry into an approval process for [the Canadian Council of Ministers of the Environment] and [Advisory Committee on Environmental Protection]. In my view the... draft is adequate as a basis for discussion at the workshop.

The Ecosystem Conservation/Evaluation & Interpretation environmental quality guidelines specialist (a Project Team member) wrote the Major Industrial Accidents Council director, "I do not have any major comments or concerns about the... document... ...The tests for an emerging issue developed by the Rawson Academy are still not adequately explained. If they are to be of use... more clarification is required. They appear out of context."

An Environment/Prairie & Northern Region director sent his and a summary of Branch comments to the Major Industrial Accidents Council director and wrote him:

The document was distributed to all Environment... Branches within the region, and the attached comments reflect the opinions of the various reviewers, not a consensus within the region. ...I offer the following comments of a more general nature:

Without exception, reviewers expressed reservations about the excessive length of document, and voiced the opinion that this made it an effort to read. Much of this difficulty can be attributed to the amount of information provided and the repetition between some sections.

While there was general agreement with the proposed ranking system, reservations remain that this objective approach will be subordinated to the more subjective considerations of the decision-making process.

The summary of comments included, and the director commented:

...Page 2 lists four questions. Additional questions which should be considered are: Is it a [Environment] issue? If not, whose is it?

To be a truly objective assessment, the ecosystem must be viewed in broader terms than simply "human well-being." Man as having dominion is too restrictive a perspective...

A definition of ecosystem... should be workable within the context of this ranking procedure, not the all encompassing definition provided.... In identifying issues to be ranked, the ecosystem associated with each should be identified.

Socio-cultural factors are of significant importance. They should be considered along with ecological, health and socio-economic factors. It should be possible to devise a means of quantifying this factor...

In evaluating trends... there is a need to place a time frame on the scoring criteria similar to that used for recovery flags... *[I don't think so, the trend is a measure of what is happening now, not how long it could go on for, because this would depend on any control strategy]*

In Annex 6 [options for combining scores], it is concluded that the "Multiple Severity/Related Extent method" and the "Single Severity/Overall Effect method" would be used in scoring issues. How would issues scored by the two methods be equitably ranked against each other? How would issues scored using the "Multiple Severity/Related Extent method" be ranked against each other if the issues have different numbers of severity levels, or would this be possible? *[you do the best you can in all estimation techniques, recognizing that the fall back may be less than satisfactory.]*

....A case study report is also mentioned, it would be a useful addition to the report and provide a better basis upon which to comment on the ranking system.

A Quebec Ministry of Environment director wrote the Major Industrial Accidents Council director that he was interested in the Project and wanted to be kept informed.

The Simon Fraser University research director (me) wrote the Major Industrial Accidents Council director, and the director commented:

I have restricted my comments to Annex 10: Possible measures of public concern.

Which publics are of interest? [the uninformed, adequately informed, directly-affected, attentive] Such a breakdown would be more informative for decision-makers. *[agreed but how is this done]*

Will the scoring factor clearly indicate issues where there ought to be more public concern but there is little or none? If not, it might bias attention towards issues that are already of public concern. *[presumably scientific knowledge or monitoring raises the score for these, and public concern is measured as a flag because of the implied control or response strategies need.]*

...Covello's list of factors is useful for characterizing the concerns of the various publics but it was not intended to be used as suggested... i.e., the number of factors added up. Would the resultant score "really" indicate high, average, or less than average public concern?

I suspect that it would be more useful for decision-makers if the issues were characterized in terms of... perceived level of risk;... level of outrage (a combination of the factors of fairness, benefits, alternatives, control, and voluntariness); and... the perceived effects of the issue on individual and social welfare... The categories of high, average, and less than average could be used. Several publics would be differentiated. Preferably, techniques such as surveys and focus groups would be used to characterize the various publics' risk evaluation. Alternatively, the issues could be characterized by a ranking panel including social scientists who would apply their collective informed judgement about the publics' risk evaluation. The membership of the ranking panel (including the question of who selects the members) is another issue that needs to be addressed once the priority setting methodology is situated within a particular decision-making process.

...What is the Strategic Options Process? What is the [Canadian Petroleum Products Institute] Model? I... don't recall them being discussed [at the National Workshop] nor have I seen them described in earlier drafts... The question of how the priority setting methodology fits into a particular decision-making process is fundamental to the accepted use, indeed the actual design, of the methodology.

The Response Assessment senior advisor (a Project Team member) sent his 10 pages of comments to the Major Industrial Accidents Council director. **The senior advisor argued that the Environment Canada process should not determine budgetary priorities, current and emerging issues should not be scored separately, and the ecological factor should not be weighted more than health and socioeconomic factors, as shown below.**

Regarding project goal and relationship to other processes, the Response Assessment senior advisor wrote the Major Industrial Accidents Council director, and the director commented:

The scope of the... method and its relationship to other decision-making processes... is not clear.... Issue or risk ranking represents at best only the upper right hand corner of the decision-making process....

Nor do I accept that the [Canadian Petroleum Products Institute] process provides an "overall outline (which is not inconsistent with the [Strategic Options] process)" nor the basis for a "generic multi-sectoral approach"... The strategic options process, at least in its initial phase, is meant to respond to [Priority Substances List] assessments: that is to say it will be pollutant driven rather than... issue driven... Moreover the decision tables will focus primarily on sectors or sources of these substances. It may be some time before "the framework and methodology for defining and ranking environmental issues will be a key component of it."

Regarding paradigm shift, the Response Assessment senior advisor wrote, and the Major Industrial Accidents Council director commented:

...The draft does not achieve the Paradigm shift necessary to contribute to the current strategic direction of Environment... and the Canadian Council of Ministers of the Environment...

...You need to clarify the distinction between sustainability or sustainable development and ecosystem integrity. Sustainability is a normative goal for human behaviour (assessment endpoint) whereas ecosystem integrity is an observable state or condition of the environment (measurement endpoint). *[explanations and examples have been given and can be used, but... the more relevant place is in [the section on context]]* One viewpoint is in the domain of public policy and human values and the other is in the domain of science and economics.

A mission or vision statement of the departments role in sustainable development is required. The keystone of any vision of a sustainable future must be lifecycle management of issues. The building blocks include the following precautionary

principles (most... are drawn from the 1993 [Canadian Council of the Ministers of the Environment] Environmental Scan)....

Sustainability provides success criteria. The goal-setting process... must in turn be complemented by the development of policy performance indicators so that progress can be reported and accountability assured....

Risk ranking must be incorporated within a multi-stakeholder decision-making process where goal-setting and backcasting complements extrapolation....

By focusing on issues such as resource shortages, waste disposal and toxic pollution, the [environmental groups] claimed that we are only dealing with systems not the underlying causes of environmental problems. [The Canadian Council of Ministers of the Environment] takes a similar tack....

We must shift our focus from end-of-pipe... controls to more proactive response strategies...

...The... method would appear to be limited to cases where pollution problems are already palpably affecting the natural environment and human health. ...To support... this shift in focus from issues to decision-making and ultimately to values, we must modify the... method so that it can be used in a proactive manner and so that a range of response strategies may ultimately be considered (ie. prevention, control and remediation). Therefore the... proposal should be modified so that

- we can classify the potential ecosystem impacts of products, processes and activities by lifecycle stage: input/outputs/product use and disposal
- we can score and rank the issue by lifecycle stage
- we can assign a relative weight... to each stage... to determine the total environmental loading (% of total risk potentially reduced...)... *[I would like to see what type of modifications might be needed to achieve this - the methodology already requires... an analysis of proximate causes - is this not sufficient for this first part of the issue definition and ranking activity....?]*

Regarding audience and use, the Response Assessment senior advisor wrote, and the Major Industrial Accidents Council director commented:

More consideration must be given to the audience to whom this report will be pitched. This report must help us sell the method to various constituencies and demonstrate its use and benefits. You have to answer the question: "Why do I need this method now when I have gotten by without it before now?" I do not think it will "contribute usefully to risk management decisions." You should also deal with the principles governing its use, its role in decision-making, process rules, and the cycle/updates required.... You must clearly outline the path forward.

...We are going to need a

- discussion paper...
- users guide...
- workbook - a practical set of examples covering all four steps... *[the first part of the comment... ignores the descriptions and explanations given in [the section on the decision-making process]. The second part is also dealt with in the covering memorandum and other text relating to case study development, testing and workshops to obtain input.]*

Regarding planning horizon, the Response Assessment senior advisor wrote, and the Major Industrial Accidents Council director commented:

I do not think this method is suitable for budgetary triage or reprofiling issues. *[comment appears to ignore the fact that ranking issues inevitably links itself to planning cycles, and this would be one of several processes and tools that might be used to assist in management decisions.]* ...We should voluntarily give up the notion. If the Minister wants [the Environmental Protection assistant deputy minister] to come up with something on alternative fuels..., I can not see him saying he has other priorities nor if he is faced with cuts, it will not tell him where to find the money. If it works, it will be a good strategic planning tool. Once the basic portfolio of issues and response strategies (manage, assess and research) has been confirmed, we should be scanning for emerging issues and reviewing our approach to current issues within a twenty year timeframe. We should review our portfolio... on an annual basis. We have a window of opportunity within a 3 to 5 year planning horizon to anticipate fundamental changes that are required in the upcoming year, such as adding a new issue, shifting from planning and analysis to action, and winding down activities that have been largely successful.

Regarding the 4 step process, the Response Assessment senior advisor wrote, and the Major Industrial Accidents Council director commented:

#### Scan and Scope

...I agree with [the International Joint Commission senior environmental advisor] that the [stress-exposure-response] framework must also include an "A" but that "A" should encompass both "Human Activity" that caused the problem in the first place and "Adaptation," our policy response... *[there is some merit in this, but since the report... does not and is not intended to go to response strategy development or analysis, this suggestion goes beyond the terms of reference other than as a piece describing the full context.]*

Potential sources of issues for a scan should be explicitly identified... Then the Rawson tests should be applied... *[I think the latter part of this has been covered by text already included...!]*

Next the use of an issue-matrix would help bundle issues by common denominators or linkages.... We should credit the Kennedy School of Government for this idea.

I do not see the need for a separate mini-profile.... *[the concept... was only advanced to track concerns, events and problems, if it is appropriate to have a six page form, with 5 pages blank for the hundreds or thousands of concerns, event and problems that are not considered issues, why not?]* Once the expressed concerns... have been sorted... by a professional panel....

#### Screening and Characterization

....It is misleading to say that "no environmental... issues are intended to be screened out by this process..."... If the issue is judged to be not significant or one for which we are not prepared to take responsibility, then it will be dropped for time being. *[the methodology is intended to rank and monitor issues, none will be screened out. This methodology has nothing to do with what will be done, if anything]* Moreover, you should downplay your preoccupation with jurisdictional considerations, because it runs contrary to [Environment's] commitment to develop an ecosystem management framework and... to multi stakeholder decision-making processes...

#### Scoring

The only distinction between current and emerging issues is the recognition of a need to respond.... I do not think these issues should be scored on their "probable" rather than "actual" effects.... *[how else would you score an emerging issue...?]* You must use the same time frame to compare issues. Nor should you draw conclusions from something you have observed in a lab unless you are sure that there is actually a real world exposure....

The... scoring system allows subject matter experts to make qualitative judgements.... We are not "calculating" the "overall impact of stress on the ecosystem..."...

A public health perspective should be adopted in scoring health effects: ...the focus should be on populations not individuals. Either prevalence or incidence data could be used... but not both!... My preference is for incidence.... *[what was proposed was incidence data where available, prevalence where not.]* The... [Health Protection] approach has some merit....

....It was recognized by the team that the approach to scoring ecological effects was the best we could come up with at the time. However, insufficient guidance has been provided to score the "structural and functional implications" of these effects. It is not clear what the benchmarks on the scale mean.... ...]... suggest that the following scale for scoring ecological effects be considered....

I do not think it advisable to focus on "lost income" or some other form of "benefit estimation" [to score socioeconomic effects]. Heroic assumptions and efforts have to be made [sic] to come up with estimates that are not very credible....

....Parties such as the [Canadian Labour Congress] and [Shell senior manager] have a point of view worth considering. We must consider the risks and benefits with and without the activity, product/process or use in dispute.... This means we should develop appropriate flags....

....These following [economic and community] effects are important benchmarks that I think discriminate clearly the different degrees of severity...

...We are on the right track to score the severity and extent of the effects together.

...We are stretching our credibility to say that we are able to score extent of the effects in percentage terms. ...We often do not have the basic knowledge... therefore I... suggest that we use a more qualitative scale.... *[the national, regional or local aspect is dealt with by flags, the issue is defined by the exposure... therefore the measure of extent must be within the geographic area, not descriptive of it...]*

You may... recall the confusion over how best to score recovery time at the workshop. ...For example, a short, recovery time could be scored low from a risk assessment perspective because of the transitory nature of the risk, or it could be scored high from a risk management perspective because it would be relatively easy to make progress...

...I... interpret the temporal dimension... as the time it would take after onset or exposure before observable effects would be evident.... The spatial and temporal aspects of an issue should be scored together and I... suggest the following scale... *[I am not sure where this would be placed and what it would replace]*

Trend is very problematic to score.... If the magnitude of the effects is scored as suggested, it may become unnecessary to score trend. *[Agree, I think that the description of trend has not been consistent, it should relate only to the trend in the stressor if nothing additional is done to modify it.]*

Ranking and Clustering

...I do not support the... approach to clustering for number of reasons...

There is no basis, other than government inaction to group issues by whether they are current or emerging. Moreover, as long as current issues are scored on basis of residual risk (remaining after program measures take effect) I do not see why you would not score them together...

Ecosystem health is a necessary but not a sufficient basis for human and economic health.... The main stumbling block... however, is simply that there is often a long timelag before signs of ecological effects become obvious and pressing.... The bottomline is that something that is severe or widespread or both will get more attention regardless of the permutation of factors involved.

We have not tried other approaches to ranking and clustering issues: raw scores...; normalization...; breakpoints... and combinations of... factor scores. These approaches are simple and transparent. ...A so-called calibration exercise using case studies may help us identify natural breakpoints... but I think it is premature to call for such an exercise before the mechanics of the scoring system have been worked out. *[Offers no alternative at this stage.]*

And regarding implied commitments, the Response Assessment senior advisor wrote:

Promises, some... carried over from the previous draft, can be found throughout the text. You should not commit your principals to courses of action or decision that have not yet been taken nor work for which there is no plan or budget. All of these... should gathered [sic] into a recommendation for further action section.

(The senior advisor also sent his memo to me.)

The National Research Council representative wrote the Major Industrial Accidents Council director, and the director commented:

Attached are some preliminary comments on the document you sent to [the National Research Council vice-president, an Advisory Committee on Environmental Protection member].

As a general rule all decision-making processes have three components: objective analysis, subjective screening and weighting, and mechanical processing where:

Objectivity implies data or laws which are scientifically verifiable and repeatable by different researchers.

Subjectivity reflects personal choice eg risk A is more important than risk B (In the short run, it is more important to save the ozone layer than conserve energy).

Mechanical processing is the unbiased and repetitive application of a methodology (which will likely have both objective and subjective elements). Frequently "objectivity" is confused with "mechanical processing."

The Proposed Priority Setting Methodology... has all three of these components as I have tried to illustrate in the attached figure. *[this... could possibly go into [the decision-making process] section]*

The general impression, possibly unintentional... is that the methodology... is highly "objective." However... the methodology is quite typically highly subjective though profiling each issue may be fairly objective. This has some quite significant

consequences not the least of which is that other countries will come up with different subjective... schemes which will likely result in a different ranking... This is to be expected but nevertheless can have great significance from the perspective of public perception and international trading where the private sector will be faced with a multiplicity of priority issues depending on their markets.

I think the approach... is good as long as it is not portrayed to be more than it is. ...The methodology should incorporate as much objectivity as possible and the proposal tries to do this - but there are limits. I recognize also that the application of the methodology is to help Environment... not to aid the private sector. However, there is a strong interest from that sector...

...Two examples of "objectivising" subjective issues...:

...Group D takes the "mechanically ranked" information.... Since it clearly cannot be "objectively ranked."

...The scoring factors were "equally weighted"... It is not possible to leave them unweighted....

I... may forward more detailed comments shortly.

The Ecosystem Conservation/Ecosystem Initiatives ecological risk analyst (a Project Team member) wrote the Response Assessment senior advisor, in a three-page memo:

After a long gestation period, it [the report] is growing into a fine piece of rational thinking on the understanding of environmental issues....

I am disappointed to see the names of key people dropped from [the acknowledgements] section. While it is true enough that "a large number of people have contributed" to this effort, there remains a core group which can claim true authorship... [The Major Industrial Accidents Council director].... should acknowledge their contribution.

Regarding the sections on sustainability, ecosystems, and extent, the ecological risk analyst wrote, and the Major Industrial Accidents Council director commented:

I would put item 2 (anticipate rather than react) first in the list.... [The Environmental Assessment & Review Process] is designed to do just that whenever major projects are planned. ...Our methodology is reactive, the process being triggered by an ecosystemic response... It is good to acknowledge that prevention is better than remediation but the methodology does not address the former.

Item 1 (begin with observable impacts) is more realistic as a starting point for this methodology. This should be made clearer. The... sentence "Adopting the ecosystem perspective...." is misleading. While it is true that we are moving from a pollutant-by-pollutant to an holistic approach to environmental management, we are not doing the latter by forsaking the former... No matter how we look at it, we have to measure and monitor pollutants individually. The innovation here is that we are attempting to integrate all these data in the management of defined ecosystems. Large action plans [Saint Lawrence, Fraser River, and Great Lakes] are good examples of this new way of managing the environment....

It would be beneficial to the reader to be exposed to the concept of scale... The concept... is paramount to the proper application of this methodology (see... my



previous memo). Some key points to mention are: ecosystems have arbitrary boundaries, ecosystems are hierarchical, the word... can be applied to almost any portion of the ecosphere... What "ecosystem" means is well defined in the text. We could add that this definition of philosophy can be applied effectively to any region, area or site subject to environmental management.

Beyond the conceptual ecosystem framework lies an operational one. The Ecozone/Ecoregion framework developed by [Environment] and [Agriculture] provides a national standard built on ecosystem principles and which is applicable at any scale... *[This should be encompassed.]*

This concept [extent], as applied to ecological factors, requires fine-tuning. I rapidly became apparent during the compilation of the case book that ecological extent is poorly understood and requires a clear definition. The following is an excerpt from my previous memo which addresses this point.

Regarding the annex including the Environmental Group Workshop report, the ecological risk analyst wrote:

My last comment pertains to a sentence... which set off an alarm bell. "First, there is a need to focus data collection efforts and to avoid collecting unnecessary information." ...Within the context of the screen and characterize section, the sentence means "drop measurements and monitoring efforts which are not specifically linked to an existing environmental issue." This is a dangerous message to convey for two reasons:

- It puts baseline monitoring at risk. Baseline data provides the... background values necessary to measure changes. While... it can probably be made more efficient, suggestions to completely discontinue will [sic] certainly have undesirable long term repercussions.
- If we limit... monitoring to areas where environmental issues are current, we are depriving ourselves from the only tool which could provide early warning of ecosystem stress. This whole methodology is based on existing issues. It would... be shortsighted to remove one of the only tools we have to prevent environmental issues to escalate.

And regarding general comments, the ecological risk analyst wrote:

...The issue definition and ranking is based on work carried out by [Environment] and by [the Canadian Petroleum Products Institute]. I wonder what other sectors of the economy would be interested in contributing to this process. The pulp and paper and mining industries as well as large utilities certainly share our concerns and desire to act.

...The state of knowledge is paramount to our understanding and wise sustainable management of our resources. Our state of knowledge should cover the themes present in the [stress-exposure-response] paradigm. It should also cover every sector of human activity.

The Response Assessment senior advisor sent the ecological risk analyst's memo and his late February and early March memos to the Major Industrial Accidents

Council director, and wrote him that Environmental Protection/Environmental Assessment had requested six copies of "your report."

The Health/Health Protection director general (a Director General Steering Committee member) sent his and six pages of comments from the first Health Protection manager and a second manager to the Major Industrial Accidents Council director and wrote him, "Since the risk ranking scheme described in [Draft 3] is similar to that used here in Health..., you may wish to consider a common scheme for use by both Departments."

Regarding overall comments, the managers wrote the Health Protection director general:

This document represents a challenging step forward in the development of methodology for prioritizing environmental issues. Much work has gone into this exercise, which had input from a wide range of stakeholders including government, industry and environmental groups. It is clear that consensus building has been an integral part of the process of developing the methodology....

For the most part, we restrict our comments to the scoring methodology for health issues.

Regarding focus and scoring system, the managers wrote:

...It is unclear in Section 2 [on context] what the baseline point for sustainability is. Are changes to the ecosystem necessarily undesirable? What about potential benefits of certain issues where the issue may aggravate some conditions but improve others? It may be that benefits do not fit into this exercise, which is more of a risk assessment exercise but rather would be addressed at some later time in a risk management context. The report may, however, be more complete if some reference was made to benefits and how they fit....

An alternative scoring system would be to choose an additive scale....

...There appears to be no fundamental advantage to using a geometric scale. Indeed, the geometric scale may be problematic when attempting to display the overall scores of various issues since there will be huge differences between scores induced by the choice of the scoring system, and not on the relevance of the differences in score.

Regarding comparison of health issue ranking models, the managers wrote, and the Major Industrial Accidents Council director commented:

#### Issue/Score Definition

....The proposed [Environment] model uses the average risk score of all subissues, while the other models [Health Protection model and Environment alternative model based on Health Protection model] consider the highest subissue risk score to be representative of overall issue risk score. The approach used in the alternative [Environment] model and the [Health Protection] model, provides a more

conservative estimate. Using an average score may heavily weight minor effects thus diluting any clearly widespread adverse effects.... Averaging the scores for all the subissues would result in the issue having a score more representative of the minor effects. *[does not provide recommendation]*

And regarding similarities to models for medical device risk assessment, the managers wrote:

Mathematical models similar in principle to the models reviewed above, have been developed by the Medical Devices Bureau, to assess the relative potential risk of medical devices. The intent of such models is to determine priorities for regulatory action, as well as to help determine the nature of the regulatory action...

Two... models were developed, given the existence of two very different types of medical devices: in vitro diagnostics products..., and other "mechanical" types of medical devices.....

...Both models rely heavily on criteria related implicitly to risk...

These models have not been used to date, to support the regulatory programs of the Bureau. Concerns have been expressed regarding the lack of transparency of such models, and work is being undertaken to develop simpler models, possibly using decision trees rather than mathematical formulae.

The managers "recommended that the [Health Protection] model be used for ranking health issues for the reasons provided above. The [Environment] alternative model would also be fine since there are very few differences except for the potential risk definition."

A third Health Protection manager sent a summary of their unit's comments to a second Health Protection director general in mid-March. In late March, they were forwarded to the Major Industrial Accidents Council director. The summary included, and the director commented:

A well-written document, with some areas that lack clarity....

...This model [the stress-exposure-response-adapt framework] seems unclear & confused....

...This section [methodology] was difficult to follow. While individual ideas made sense, it was difficult to see how they connected to the [stress-exposure-response-adapt] framework. A clearer description... is required...

...Emphasis is on negative aspects of health (e.g., reduced lifespan...); it would be useful to add some indicators of well-being and people's perceptions of environmental consequences (e.g., self-rated health...).

...Given the complexity of the method... many busy policy and program managers may have difficulty accepting the rankings (unless they confirm what they already believe); a simpler, clearer way of presenting this information may need to found.

...Who will have ongoing responsibility for the time-consuming process of determining environmental issues and priorities, on an ongoing basis?

*[[Environment]]*

Where will resources (financial & human) be obtained, to maintain this labour-intensive process? *[[Environment]]*

A University of Toronto associate professor wrote the Major Industrial Accidents Council director, and the director commented:

Thank you for sending me... this excellent document... I think this document has developed a good strategy for ranking by scores the various environmental issues.

One thing which is lacking... is an indication of how good the scoring system works. It might be desirable to include... a section on the "validity and reliability of the scoring system." This might be achieved by conducting a small study to look at the inter-rater, and intra-rater agreement.... Some tabulations of the empirical variations of scores... may help us to understand the degree of usefulness of the ranking system. *[the case studies should provide some indication of the resolving power of the system]*

The third Canadian Chemical Producers Association senior director sent his and a summary of their National Environmental Quality Committee's comments to the Major Industrial Accidents Council director. (The Association was an Advisory Committee on Environmental Protection member.) The senior director wrote the director, and the director commented:

I asked several members... to review the draft document.

Reviewers commented that the document provides a useful framework for evaluating environmental priorities. Members thought the methodology appears to be quite sound and has considered the critical variables. It has the potential to be used to place sector issues within the context of broader environmental issues and thus help to set overall priorities for action. We also note that the system scorings or weightings identify significant environmental effects, not just frivolous "what-if's". The front end process of assessing risks and impacts is good.

If there is a concern it is with how the final ranking and clustering would occur. Table 13... in theory looks great. However, Table 12 suggests that there would be discreet cut-off points. For example, a score of 90 makes an issue a medium priority while a score of 91 makes it a high priority. The imprecision in the system could easily affect the score by +/- 10. The concern then arises when this information is applied to Table 14. There is the possibility that an issue that had an ecological effects score of 91 and a low human health and low socio-economic score would be rated overall higher priority than an issue which had an ecological effects score of 90 and a high human health and a high socioeconomic score. That would seem to be wrong. *[this is an age old problem that will never be solved; the decision-makers will get information on all issues including those that are narrowly ruled in and... ruled out of any particular group... they may choose to consider the latter in the former group.]*

We must avoid falling in the trap of playing a numbers game. There will be a need for some judgement and common sense in the final selection of priorities. As long as there is "professional judgement" in the final analysis the process will be a valuable tool.

There is a need for an integrated and structured priority setting approach. We think that Environment... has made significant progress in preparing this document. We look forward to participating in the continuing evolution of this important work.

**The Environmental Protection/Pollution Prevention (formerly Conservation & Protection/Pollution Prevention) senior engineering advisor (a Project Team member) argued to the Major Industrial Accidents Council director that the Environment Canada process should not weight the ecological factor more than the health factor, as shown below.**

The senior engineering advisor wrote the Major Industrial Accidents Council director:

It's good to see the process evolving, and the acknowledgement that this is just the front end of the priority-setting process is a good upgrade.

The relationship with the [Canadian Petroleum Products Institute] exercise is still unclear. Will the integrated version... be adopted by both [the Institute] and [Environment]?....

It is unclear if the decision-making framework... would be applied for every issue, or just the top ranked ones....

I have difficulty with the proposed clustering scheme... Humans are part of the ecosystem, too, and therefore human health effects that are linked to environmental issues should be treated at least on the same level as "ecology." The result of the clustering... just does not make sense in terms of public values.

Because the test of significance is qualitative and judgemental, it may still lead to complaints of "triage"...

The document gets better each time.

By now, the Core Project Team were to meet to review the comments on Draft 3 in mid-April.

**At the end of March, the Industry environmental analyst (a Project Team member) advised the Major Industrial Accidents Council director (and copied the Industry director) that the Environment Canada Project should be re-established as a priority, as shown below.**

The environmental analyst wrote the Major Industrial Accidents Council director, and the director commented:

As discussed, I will unfortunately still be away for the meeting... Therefore, I will try to put in a few of my concerns...

...I... am satisfied that the document successfully outlines a basic methodology that will prove useful in making explicit the assumptions that contribute to the ranking of issues on the basis of high, low and medium priority.

...There is still room for improvement, but these will emerge as the methodology is incorporated into decision-making processes and risk management activities such as the Strategic Options process.

In my opinion, the approach that would score separately the three different factors allows the most flexibility, and reflects the reality of different departments and mandates. My only concern would be the adding up of different flags... Possibly this should be avoided as well, particularly if socio-cultural factors become a separate flag. The concern is that human concerns would overwhelm environmental/ecosystem factors.

My comments therefore focus on the Conclusions and Recommendations. It is too bad that more has not emerged on the future use, next steps for the methodology. There is some evolution of thinking on this in... Response Assessment..., and it would be valuable to have their thinking at this point. There will be a report back to [the Advisory Committee on Environmental Protection] in May... and these conclusions should be incorporated into this document. ...The last paragraph [in the general conclusions]... is awkward and unclear.

...I have several concerns about the document blending the [Canadian Petroleum Products Institute] methodology with this one, as some of the sections do not reflect... Draft 3, and any changes made in Draft 4 should be incorporated. However, I assume there will be more work on this activity in another group at a later date.

...It is not clear what the purpose of the workshops will be, and this is important. Further refinement of the methodology will depend upon the use planned for it, and it may be time to begin to seek better buy-in from the political level. *[this comment... is particularly relevant.]*

An Angus Environmental senior environmental engineer (a Canadian Standards Association/Environmental Risk Assessment Technical Committee member) wrote the Major Industrial Accidents Council director:

Thanks... for undertaking the challenging task of proposing an environmental priority setting methodology... Priority setting is essential to ensure the effective allocation of human, financial, and other resources.

...February and March are busy times in the consulting field due to the year-ends of the federal government and others. Thus, I am able to make only a few specific comments...

...I am interested in learning more about the national workshop.

Finally, (after the Major Industrial Accidents Council director sent the comments and his comments on the comments to the Core Project Team), the Corporate Policy director (a Core Director Working Group member) wrote the director (and copied the Corporate Policy director general):

....It is important to emphasize upfront the Government's commitment to sustainable development (in Creating Opportunities, the Throne Speech, the budget) as a cornerstone of its policy agenda. The document refers to "sustainability" and

"sustainable development" almost interchangeably - it would be helpful to clarify what these concepts mean and how they relate to each other....

References to the Green Plan should be removed....

...The 5th paragraph... [in the Environmental Group Workshop report] should read: "The purpose of environmental priority setting is to allocate resources and effort in a manner that is cost effective and proportionate to the potential reduction of risk."

...Should you have any questions, ...contact me... or [the Corporate Policy economist].

The 5th paragraph did not include the phrase "cost effective and." "Creating Opportunities" was the Chretien Liberals' plan.

All recipients of Draft 3 of the Environment Canada Project report, especially those who submitted comments, were to be advised of the Project's status after the Director General Steering Committee meeting in April.<sup>17</sup>

Meanwhile, in late March, the Major Industrial Accidents Council director wrote the Environmental Protection/Response Assessment senior advisor:

I was hoping to talk with you today and obtain your agreement to seeing the Priority Setting Project through to the next phase, which would be done by your agreement to participate in the Project Team reviewing the comments on Draft 3 and preparing Draft 4.... The following timetable is about the only one available now.

....The... Team would then meet [in mid-April] (probably all day)....

....Can you call me next week to confirm.

(The director was to be away in early April.)

The director drafted a summary of the Draft 3 comments, and his comments on the comments. He wrote:

The comments... fall into three general categories:

- substantial and fundamental criticisms regarding the methodology or the appropriateness of it in the first place;
- commentary intended to resolve issues or modify the text for the purposes of improvement
- editorial corrections.

....I suggest that... comments [in the first category] [from the Canadian Labour Congress secretary-treasurer, Environmental Conservation/Ecosystem Conservation/Water Research director and science liaison officer, and senior advisor] simply be presented to the [Director General] Steering Committee on the basis that to accept them would fundamentally alter the project and as such is a policy matter appropriate only to the [Committee] to determine.

At the end of March, the senior advisor wrote the Council director:

I... will do what I can to help you complete your report because you are short of time and we need to know where we stand with respect to this project. I hope that you will inform me of the makeup of the advisory group you are getting together to review the comments... It is my desire to obtain a clear understanding of what remains to be done and the path forward by participating in the meeting. However, we will still need to set up a formal review and acceptance process to get buy in.

The Council director informed the senior advisor about the makeup of the Core Project Team, and the senior advisor contacted them. The Team were to include the senior advisor, maybe the first Atmospheric Environment director, the Corporate Policy economist or maybe a replacement, a replacement for the Industry environmental analyst, and a replacement for the Environmental Protection/Program Integration (formerly Conservation & Protection/Ecosystem Sciences/Strategic Planning) science programs officer.

The Council director discussed the logistics and process for reviewing the Draft 3 comments with the Core Project Team (and environmental analyst).

By now, the Response Assessment director general's office had agreed that as long as Draft 4 was delivered by mid-April, there still could be a report to the Advisory Committee on Environmental Protection in early May. This meant distributing Draft 4 in mid-April, and a Director General Steering Committee meeting by late April.

The Council director sent the Draft 3 comments, summary, and comments on the comments to the Core Project Team. He wrote them:

I would hope we could go fairly rapidly down the list of comments and sort of say *yes* or *no* to them one about the other, which will simplify our meeting, and leave me with the problem of incorporating them into the document.... I will also have to prepare draft positions to be reported to [the Advisory Committee] when it meets [in early May].

...There are a couple of general things which are appropriate to say at this point:

- Overall, the comments are positive, useful and easy to accommodate; some reflect misunderstanding or seem to ignore... explanatory material elsewhere in the text, or points out that more is apparently needed. Although it is not in the contract, [the Council] (I) might try... at least to phone them [the commentators] in some of these respects.

Some suggest we have been misguided to date, or are taking the wrong track; or that we need more time (who doesn't) to carry this through successfully. These I think we leave for the... Steering Committee to deal with but, like the others, they merit a response.

- A number of comments have been made suggesting different severity or extent criteria for some of the factors. We have two choices: either to accept the suggestion... or... show the newly proposed as an alternative.... If the intention to have a workshop is still held, then, ...the workshop should see the current and alternative sets. My inclination is in any case towards the latter because we are



still in the consultation process, and although I think the alternatives... have merit, others, including yourselves, may not.

- Aside from a few (two) comments about not having Environment... make an initial ranking on the sole basis of ecological consequence..., there appears to be general support for accepting the ranking and clustering proposal as written in Draft 3...

If this is accepted, and I would urge it, it allows us the substantial benefit of freeing the methodology to have potentially different scoring systems and ranges for the different factors....

- It is my intention that Draft 4... be much briefer than Draft 3, largely without Annexes, largely without the long explanations and rationalizations..., and just simply say, here is the need, the methodology and framework, how it might be used in the decision-making process, and these are the scoring options or recommendations. ...The example to follow would be... the [Canadian Petroleum Products Institute] methodology report, i.e., 20-25 pages in total.

**Before the Core Project Team meeting, the senior advisor advised the director general to establish the Environment Canada-Departmental Scan, Environment Canada-Canadian Environmental Protection Act Review, or Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects, or to re-establish the Environment Canada Project, as shown below by excerpts from his notes on Draft 3. Also shown, he argued that the Team should not help decide Environment's priorities. The director general resolved the argument. She decided that they should help in the Environment Canada process.**

Regarding consultation and buy-in, the senior advisor wrote:

- ...one presentation
- ...20 responses to circulation of report
- most persons will either not have received report in time nor had the opportunity nor inclination to read it thoroughly...
- although most reviewers accept the need and are generally supportive, most have adopted a "wait and see" response.
- ...meeting... to review comments.... do not expect... other members of the original team to attend, with the exception of possibly [the first Atmospheric Environment director or economist]

Regarding concerns, the senior advisor wrote:

- confusion about the potential role of priority setting
  - in departmental decision-making processes
  - in the strategic option process
- [Canadian Council of Ministers of the Environment] members received report without advance consultation
- there are implied commitments in text (not stated in the form of proposed recommendations)
- no clear audience or use for report - the path forward is not clear

- report does not adequately reflect the departments' strategic orientations
  - sustainable development
  - prevention...
  - life-cycle management
  - issue tables

The senior advisor suggested:

- meeting of project team should be cancelled...
- possible exit strategies -
  - participate in Departmental Scan...
  - work into [Canadian Environmental Protection Act Review] recommendations & follow-up...
  - demonstrate use as part of [Strategic Options Project] on Petroleum Products Sector - [third Canadian Petroleum Products Institute senior director]
  - recall small project team or commission several issue panels to test and validate scoring and ranking on an agreed upon set of issues

The meeting was not cancelled. In mid-April, the Major Industrial Accidents Council director met with the Core Project Team - now including the senior advisor and economist - to review the comments on Draft 3 of the Environment Canada Project report and to prepare Draft 4.

After the meeting, the Major Industrial Accidents Council director began revising Draft 3.

The Spring 1994 issue of the Treasury Board Secretariat newsletter called Managing Risk included an article on the Environment Canada Project.

In mid-April, a Simon Fraser University research associate and the research director (me) sent a 10-page annotated list of recommended readings in risk communication and stakeholder relations to the senior advisor, as he requested. Topics included: understanding stakeholders - needs, concerns, & experience; risk communication - definition and role in stakeholder relations; citizen participation - the who's, how's, why's, & when's; and evaluation.

(Around this time, the possibility of me doing a background report on "environmental priority setting" for Ontario Environment & Energy arose through my then senior supervisor. The senior advisor encouraged me to do so and offered to provide me with documents.)

In late April, the Environmental Protection director general sent the agenda for the end of April Director General Steering Committee meeting to the Committee. The senior advisor sent it to the Major Industrial Accidents Council director and wrote him,

"The... meeting is on.... [The director general] only wants you to give a status report about the draft and she will deal with questions about the path forward."

**By the end of April, the Core Project Team finished (via the Major Industrial Accidents Council director) Draft 4 of the Environment Canada Project report. They resolved the arguments about re-establishing the Environment Canada Project because Environment should test (use) the Environment Canada process, more Environment and other federal department staff should be allocated to test the process, and more Environment and other federal department staff and time should be allocated to develop the process before broad consultation; weighting the ecological factor more than health and socioeconomic factors; the process determining a single manager's priorities; risk assessors not helping decide Environment's priorities; the process determining Environment's budgetary priorities; and not scoring current and emerging issues separately. They were to advise that the Project should be re-established because Environment should test (use) the process *and* more staff (not time) should be allocated to develop it (not before broad consultation), and recommended Environment should weight the ecological factor more in the process, the process should not determine a single manager's priorities, risk assessors should help decide Environment's priorities in the process, the process could determine Environment's budgetary priorities, and Environment should score current and emerging issues separately in the process, as shown below by excerpts from the report.**

Draft 4 was 47 pages long, not including the annexes (15 pages).

General conclusions, basically the same as Draft 3, now included:

...An expanding number and range of organizations have considered the task being undertaken by Environment...

The response... has, without exception, been supportive of the need, and variously supportive (cautious to strongly positive) of the framework and methodology being further refined and tested, as well as to the direction and process of development.

The focus is and should remain on simplicity and comprehensibility in the framework and methodology and on a transparent and inclusive process.

Hesitation, if any, concerning its potential validity remains reflected in the two oft-repeated questions, which, at this point, still cannot be answered:

- How will the issues actually be ranked or clustered... (i.e., will my pet issue survive as an important issue)?
- How will this be used within the Department (or by others who might find it attractive)?

The broad conclusion remains: that there is a need for such a methodology and that this methodology is likely to be as good as any other that might be developed, and certainly more comprehensive and fair than any currently known.

Specific conclusions for further development of the methodology - similar to Draft 3 with two notable omissions: the other specific conclusions about integrating the Environment Canada and Canadian Petroleum Products Institute processes, and the Advisory Committee on Environmental Protection challenge to use the process - included:

- ecosystem sustainability must be and remain the primary focus... tempered and supported by human health and socio-economic concerns (in that order),
- the risk ranking methodology should ensure that no environmental issue is "dropped off the table"; rather it should be used to direct all issues to the "right" table,
- a method for scanning and scoping has to be developed and tested,
- the [stress-exposure-response] framework appears to provide an appropriate framework for defining environmental issues within the concept of a cascading series of issues and sub-issues from the global/national level down to the regional and local levels and can adequately handle stresses and responses from the generic to the specific,
- the [activity-stress-exposure-response-adapt] paradigm is essential to link issues to causal actions (either human or natural) or forward to adaptive policies and programs,
- there may be some merit in performing a set of issue assessments on the basis of ecozones,
- there may be some value in developing a socio-cultural factor to be scored in the same manner as the socio-economic factor,
- it is legitimate for Environment... to rank and cluster environmental issues, for its own purposes on the primary basis of ecological effects, so long as its health, economic (industry and resource) and cultural (heritage and aboriginal affairs) partners have the opportunity to raise their interests in respect of environmental issues of significance to them, even though these issues might not have high ecological significance (although this latter condition is... considered unlikely),
- the aspects of issue characterization for scoring and flagging purposes appear to be comprehensive, non-overlapping and appropriate to the decision-makers' needs, although further development and refinement could be pursued,
- development and validation of additional and existing case studies remains essential, and
- the process of development should be open to a broader range of stakeholders and partners, including [environmental groups].

The Team recommended:

- Components of Environment... should attempt to put this methodology in to effect on a trial basis.
- The Case Book... should be circulated as soon as possible.

- Work should continue, through a project team, to address the two questions of temporal scale effects and its incorporation into the extent aspect of each factor, and the possible development of the socio-cultural factor criteria....
- Pending concurrence by the Directors General and [Advisory Committee], a national workshop on the subject be held in the... fall of 1994.

The annexes including the Environmental Group Workshop report, alternative scoring methodologies (20 pages), and measures of public concern were removed.<sup>18</sup>

*The Environment Canada-Canadian Petroleum Products Institute and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects.* **By now, Environmental Protection established the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project as a priority for Environment, as shown below by excerpts from the Director General Steering Committee meeting minutes. Also shown, they resolved the arguments about advising the Canadian Petroleum Products Institute to establish the Environment Canada-Canadian Petroleum Products Institute Project. They advised the Institute to establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project. The Institute then did so for themselves.**

"'Merged' methodology complete."

Environment... has agreed in principle to use of the merged methodology... within the context of the strategic options process for the petroleum products sector.... [The Institute] has indicated a willingness to use this method to act on the whole range of environmental issues arising from their sector.<sup>19</sup>

*The Health Protection Project.* **By now, Health/Health Protection finished developing and using the Health Protection process. They ended the Health Protection Project as a priority for Health, and advised Health to establish the Health Project (to use the Health Protection process to determine Health's priorities), as shown below by an excerpt from the Director General Steering Committee meeting minutes.**

"His branch [Health Protection] has proposed that... Health..., as a whole, undertake a similar exercise."<sup>20</sup>

*The Environment Canada and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects.* **At the fifth Director General Steering**

**Committee meeting, in Draft 4 of the Environment Canada Project report, the Core Project Team advised the Committee (via the Major Industrial Accidents Council director) to re-establish the Environment Canada Project as a priority. As shown below by excerpts from the meeting minutes, the Environmental Protection/Response Assessment director general advised the Committee not to re-establish it, but to establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project. Also shown, the Committee did not re-establish the Environment Canada Project for Environment and other federal departments. They re-established the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project for Environment, and established it for other federal departments; and established the Environment Canada-Strategic Options or Environment Canada-Ecosystem Action Plan projects for Environment and other federal departments.**

The Committee met to reach agreement on "the strategy for incorporating priority setting methodologies into decision-making frameworks." With the exceptions of Finance, Fisheries, Natural Resources/Energy, and Environmental Conservation/Wildlife, all director generals attended or were represented. The Industry director general was represented by the Industry environmental analyst (a Core Project Team member), and the Agriculture director general by the Agriculture senior environmental analyst. The Response Assessment senior advisor also attended.

The Response Assessment director general outlined the proposed strategic objectives:

- to ensure that sustainable development objectives are met in a manner that contributes to long term Canadian competitiveness and ecosystem health
- to promote pollution prevention and lifecycle stewardship on the part of organizations operating in Canada
- to facilitate the harmonization and rationalization of environmental protection and resource management regimes in Canada

The objectives were accepted.

The director was invited to present a status report on Draft 4. He then tabled his report for review and discussion. The director told the Committee:

**Key specific changes**

- clustering by ecological effects (confirmed)...
- this allows varying scoring methods and ranges to suit factors - no concern over weighting

- new decision flow model fits the Strategic Options Process
- Draft 4... has been considerably shortened, more could be done

Comment

- framework and methodology still capable of serving [Canadian Petroleum Products Institute] needs

The Response Assessment director general reported on the status of the Institute "priority setting initiative" (the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project). She told the Committee that "cross-sectoral equity, comprehensiveness and provincial commitment are important to the [Institute]" and "concern related to being in the 'spotlight.'" The director general presented the "Strategic Options Process... Environmental Priorization [sic] Methodology" (the Environment Canada-Canadian Petroleum Products Institute-Strategic Options process). The process is shown in Appendix 2.

The Response Assessment director general proposed a strategy for finalizing a report on the methodology and encouraging its incorporation into decision-making:

- finalize the Environmental Issue Definition and Ranking methodology and encourage its incorporation into decision-making processes
- demonstrate the [Canadian Petroleum Products Institute] Priority Setting Methodology within the framework of the Strategic Options Process...
  - Petroleum Products Industry Advisory Committee... Priority Setting Task Force
  - [Environmental Protection assistant deputy minister]/[Institute] Issues Coordinating Committee
  - [Environment] Minister/[Institute] Board of Directors
  - Petroleum Products Strategic Options Issue Table
  - formal evaluation of [Strategic Options]/Priority Setting Methodology
- develop broader acceptance for the use of priority setting as a tool that can enhance decision-making
  - [Canadian Council of Ministers of the Environment] Environmental Protection Committee...
  - Advisory Committee on Environmental Protection...
- ensure linkages between federal initiatives related to Petroleum Products Sector and Strategic Options evaluation

Members were generally in agreement that further refinements should result from 'use.' They were generally supportive of giving the methodology a 'trial run' in either a sectoral strategic option plan or ecosystem action plan. Members were asked for their feedback so that [the director] can finalize his report.

Other related decisions and actions included:

- ...Members agreed to review report and provide comments by [early May]....
- Members were asked to seek opportunities and partners to demonstrate use of method.

- There is no need for a national workshop at this time.
- Environment... will work towards broader acceptance of priority setting as a tool that can enhance decision-making.
- [Environment] and [the Institute] propose to demonstrate the use of priority setting methods within the context of the strategic options process for that industrial sector
- [Environment] will recommend that the... Environmental Protection Committee give further consideration to the use of priority setting methods
- Advisory Committee on Environmental Protection members will be briefed on our progress.

The second Health/Health Protection director general reported on the use of "priority setting methodology" within Health Protection (the Health Protection Project). He noted that:

...the [Health Protection] model scores neither scientific uncertainty nor future trends,... issue definition requires careful consideration, but will force clarification of the key issues of concern to [Environment], and... implementation of the scoring system will require a significant commitment of resources. Based on our experience..., priority ranking of issues in and of itself will not provide a basis for action, but will rather serve as a guide to resource allocation subject to management overrides.

The director general offered (or agreed) to provide the report by the Health Protection Task Force on Priority Setting and the methodology proposed by a University of Alberta professor for the Steering Committee's information.

Next steps were to include presentations to the Environmental Protection Committee and Advisory Committee on Environmental Protection. The Response Assessment director general was to circulate copies of the briefing materials to the Steering Committee. She asked them to formally review Draft 4, indicate their "comfort level" with it, and express any outstanding concerns that must be resolved.

In other words, the Steering Committee approved the revised Environment Canada Project plan (to use the Environment Canada process), including Draft 4 of the Project report as the Final Draft.<sup>21</sup>

## Discussion

### The Environment Canada Project

*Re-establishing it for Environment and other federal departments.* During the fifth process of not re-establishing the Environment Canada Project as a priority for



Environment and other federal departments, the Environmental Protection/Response Assessment natural scientist argued to the Core Project Team (via the Response Assessment senior advisor, via the Major Industrial Accidents Council director) to allocate more staff to this Project. The Environmental Conservation/Ecosystem Conservation/Water Research natural scientist argued to the Team (via the Water Research director, via the Council director) to allocate more staff. The Team - including the Corporate Policy economist (and senior advisor and Council director) - advised the Director General Steering Committee - including the Industry economist and Agriculture economist - to allocate more staff. Then the Committee - the interim decision-maker for the Project - decided not to allocate more staff (and to reallocate and allocate resources to the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project, and allocate resources to the Environment Canada-Strategic Options or Environment Canada-Ecosystem Action Plan projects), so the natural scientists and Corporate Policy economist seemed to have no influence, and the Industry and Agriculture economists seemed to have a major influence. Other government experts did not offer advice, so they seemed to have no influence.

In this process, dissimilar to the first through fourth processes of re-establishing this Project for Environment and other federal departments (discussed in Chapters 4 to 7), the Response Assessment natural scientist was asked for advice by the senior advisor, and argued it to the Team (via the senior advisor); the Water Research natural scientist was asked by the Water Research director, and argued it to the Team (via the Water Research director, via the Council director); the Corporate Policy economist seemed to be asked by the Team, and to offer it to them; the Team were not asked, but offered it to the Committee; the Industry and Agriculture economists seemed to be asked by the Committee (via the Industry and Agriculture director generals, respectively), and to offer it to them; and other government experts did not seem to be asked, or to offer. So perhaps the natural scientists and other government experts had no influence on the decision because *they were not asked by the Committee and did not offer it to them*. The Corporate Policy economist had no influence because *although she offered advice to the Committee, she was not asked for it by them*. And the Industry and Agriculture economists had a major influence because *basically they were asked by the Committee and offered it to them*. But why were the natural scientists and economists asked (by anyone), and why did they offer? And why were other government experts not asked, and why did they not offer? In the process that was to be developed and used in this

Project - the Environment Canada process - government and non-government experts were to be asked by Environment and other federal departments.

Like government experts, the other Committee members were public servants, but unlike them, they were managers (Environment and other federal department), not experts, although they had expertise, e.g., the Response Assessment, Environmental Protection/Pollution Prevention, and Corporate Policy director generals in engineering, natural science, and economics, respectively. So perhaps the lack of influence by the natural scientists and Corporate Policy economist did not make a significant difference to determining "good" environmental priorities because the Committee knew more than they did about the science of deciding priorities. The major influence by the Industry and Agriculture economists did not make a significant difference because the Committee knew as much as they did about the science. And the lack of influence by other government experts did not make a significant difference because the Committee knew as much as (or more than) they did about the science. Yet, the other Team members (including the senior advisor) from Environment had expertise in sociology, economics, and engineering, and the Water Research director was an Environment manager with expertise in natural science. Further, the other participants - including Environment managers with expertise in engineering and natural science - questioned if this Project should not be re-established; with the minor exception of the Conservation & Protection (now Environmental Protection) assistant deputy minister who asked the Committee to advise whether it should be (use the process); and the major exceptions of environmental groups who did not establish it or the Environment Canada-Canadian Petroleum Products Institute Project, and the Response Assessment director general who advised the Committee not to re-establish this Project and to establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project. In particular, after the assistant deputy minister (the final decision-maker for this Project) re-established this Project and the Environment Canada-Canadian Petroleum Products Institute Project, and updated the Environment deputy minister (the final decision-maker for Environment) on his decision; the Council director advised the Response Assessment director general to re-establish this Project; the senior advisor advised the Response Assessment director general to re-establish it and establish the Environment Canada-Strategic Options Project; the senior advisor (twice) argued to the Response Assessment director general (and Council director) to re-establish this Project; the Water Research director argued to the Council director and Team that it should be re-

established; the senior advisor advised the Response Assessment director general to re-establish it or to establish the Environment Canada-Departmental Scan, Environment Canada-Canadian Environmental Protection Act Review, or Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects. But what did other government experts know?

It is important to note that some participants in the Environment Canada Project again questioned if experts from certain organizations or in certain disciplines should be involved in determining environmental priorities, and how they should be involved. First, the Environmental Protection/Response Assessment ecological risk analyst argued to the Response Assessment senior advisor, Major Industrial Accidents Council director, and Core Project Team - including the Corporate Policy, Industry, and Environmental Protection/Program Integration economists - that the Project should be re-established because more staff - including experts - should be allocated to test (use) the Environment Canada process. Second, the Canadian Labour Congress secretary-treasurer argued to the director, Response Assessment director general, and Team that risk assessors should not help decide Environment's and the petroleum products industry's pollution priorities (vs hazard assessors, who should). Third, the Environmental Conservation/Ecosystem Conservation/Water Research director and science liaison officer argued to the Council director and Team that the Project should be re-established because more Environment and other federal department staff - including experts - and time should be allocated to develop the Environment Canada process before broad consultation. Finally, the senior advisor argued to the director general that the Team - including the Corporate Policy economist - should not help decide Environment's priorities.

Generally, however, the participants in the Environment Canada and other projects all still seemed to agree that at least some experts (Environment and other federal department hazard assessors) knew best about the science of deciding priorities.

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#### NOTES

<sup>1</sup> Major Industrial Accidents Council director to second Mining Association senior director, letter of February 3, 1993, "Defining and Ranking Environmental Issues," copied to Environmental Protection/Response Assessment director general.

<sup>2</sup> Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, letter of February 10, 1994, "Priority Setting - Current Status," 2-3.

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<sup>3</sup> Major Industrial Accidents Council director to second Mining Association senior director; Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, letter of February 10, 1994, 2, copied to Response Assessment senior advisor; Environmental Protection assistant deputy minister to Environmental Protection/Response Assessment director general, memo of February 4, 1994, "I have made..."; Environmental Protection assistant deputy minister to Environment deputy minister, memo, "Advisory Committee on Environmental Protection"; "Background," 1-5.

<sup>4</sup> Environmental Protection/Pollution Prevention director general to Environmental Protection/Response Assessment director general, memo of February 9, 1994, "1. I was at..."

<sup>5</sup> Environmental Protection assistant deputy minister to Environmental Protection/Response Assessment director general; Environmental Protection/Pollution Prevention director general to Environmental Protection/Response Assessment director general.

<sup>6</sup> Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, letter of February 10, 1994, 1; Environmental Protection/Response Assessment senior advisor, notes of Response Assessment director general meeting of February 18, 1994, "Notes for [Response Assessment director general's assistant]," 1; Environmental Protection/Response Assessment director general to Recipient, letter of January 31, 1994, "The attached report..."; Major Industrial Accidents Council director, notes of Environmental Protection/Response Assessment director general meeting of February 18, 1994, "Priority Setting: Meeting in [director general's] Office, February 18, 1994," February 27, 1994, 1; Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, letter of February 10, 1994, 1; Major Industrial Accidents Council director, "Environmental Priority Setting - Activities and Time-Lines," January 23, 1994; Environmental Protection/Response Assessment director general to Recipient.

<sup>7</sup> Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, letter of February 10, 1994, 2.

<sup>8</sup> Ibid., 2-3.

<sup>9</sup> Environmental Protection/Response Assessment senior advisor to Response Assessment director general, memo of February 10, 1994, "Priority Setting"; Major Industrial Accidents Council director to Environmental Protection/Response Assessment senior advisor, letter of February 10, 1994, "Following your call..."; Environmental Protection/Response Assessment senior advisor, notes, "1. My role - co-ordination..."; Environmental Protection/Response Assessment senior advisor to Response Assessment director general, memo of February 11, 1994; Environmental Protection/Response Assessment senior advisor, "The Context of Priority Setting"; Environmental Protection/Response Assessment senior advisor to Simon Fraser University research director, memo of February 15, 1994, "The next Science..."; Major Industrial Accidents Council director to Resource Futures facilitator, letter of February 14, 1994, "Environment Canada Priority Setting," copied to Environmental Protection/Response Assessment director general's assistant and Response Assessment senior advisor; Environmental Protection/Response Assessment senior advisor to Major Industrial Accidents Council director, memo of February 15, "Please find attached..."; Environmental Protection/Response Assessment senior advisor, briefing note of February 18, 1994, "Issue: Clarify the Roles and Responsibilities and Possible Deliverables for the next phase of the Priority Setting Project"; Environmental Protection/Response Assessment ecological risk analyst to Response Assessment senior advisor, memo of February 21, 1994, "Draft 2 of Case Studies Manual"; Environmental Protection/Response Assessment senior advisor to Major Industrial Accidents Council director, memo of February 18, 1994, "for this afternoon's..."; Environmental Protection/Response Assessment senior advisor, briefing note of February 18, 1994; Environmental Protection/Response Assessment senior advisor to Major Industrial Accidents Council director, memo of February 18, 1994; Environmental Protection/Response Assessment senior advisor, briefing note of February 18, 1994, 1-3; Environmental Protection/Response Assessment senior advisor to Major Industrial Accidents Council director, memo of February 18, 1994; "CCME Planning Process."

<sup>10</sup> Major Industrial Accidents Council director, notes of Environmental Protection/Response Assessment director general meeting of February 18, 1994, 1; Environmental Protection/Response Assessment senior advisor, notes of Response Assessment director general meeting of February 18, 1994, 1; Environmental Protection/Response Assessment senior advisor, draft notes of Response Assessment director general meeting of February 18, 1994, "Progress on deliverables..."; Environmental

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Protection/Response Assessment director general's assistant, notes of Environmental Protection/Response Assessment director general meeting of February 18, 1994, "Environmental Priority Setting..."

<sup>11</sup> Major Industrial Accidents Council director, notes of Environmental Protection/Response Assessment director general meeting of February 18, 1994, 1.

<sup>12</sup> Environmental Protection/Response Assessment ecological risk analyst to Environmental Response Assessment senior advisor; Queen's University director and Queen's University chair to Environmental Protection/Response Assessment senior advisor, letter of January 31, 1994, "Enclosed please find..."; Environmental Protection/Response Assessment senior advisor to Queen's University chair, memo of February 24, 1994, "Environmental Policy Studies."

<sup>13</sup> Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general's assistant, memo of February 27, 1994, "Meeting Notes"; Major Industrial Accidents Council director, notes of Response Assessment director general meeting of February 18, 1994, 1.

<sup>14</sup> Major Industrial Accidents Council director to Environmental Protection/Response Assessment director general, letter of February 28, 1994, "First Integrated Draft - CPPI/Environment Canada Methodologies," copied to third Canadian Petroleum Products Institute senior director and Response Assessment senior advisor; Major Industrial Accidents Council director, "Environmental Priority Setting: A Proposed Methodology Representing the First Integration of a Proposed Methodology Produced by the CPPI Working Group and a Definition and Ranking Framework Produced by the Environment Canada Project Team," February 1994.

<sup>15</sup> Environmental Protection/Response Assessment senior advisor, briefing note of February 28, 1994, "Issue: ACEP Minutes - Action Item on Priority Setting"; Environmental Protection/Response Assessment senior advisor, notes of Response Assessment director general meeting of February 18, 1994; Environmental Protection/Response Assessment senior advisor to Major Industrial Accidents Council director, memo of March 1, 1994, "Would like your..."; Environmental Protection/Response Assessment director general to Environmental Protection/Pollution Prevention director general, memo, "CCME-EPC January 24-25 Meeting Action Item - Priority Setting"; Environmental Protection/Response Assessment director general to Environmental Protection/Pollution Prevention director general; Major Industrial Accidents Council secretary to Environmental Protection/Response Assessment senior advisor, letter of March 1, 1994, "Please find enclosed..."; "Environmental Issue Definition and Ranking Distribution Lists," March 1, 1994; Environmental Protection/Response Assessment senior advisor to Major Industrial Accidents Council director, memo of March 3, 1994, "Please send a..."; Canadian Labour Congress secretary-treasurer to Major Industrial Accidents Council director, letter of March 7, 1994, "Thank you for..." copied to Environmental Protection/Response Assessment director general and fourth Canadian Environmental Network senior representative; Major Industrial Accidents Council director to Recipient, letter of March 8, 1993, "Environmental Issue Definition and Ranking"; Environmental Conservation/Ecosystem Conservation/Ecosystem Initiatives ecological risk analyst to Environmental Protection/Response Assessment senior advisor, memo of March 9, 1994, "Case Studies."

<sup>16</sup> Canadian Environmental Network-Environmental Protection Standing Committee, minutes/action items of second meeting of March 11, 1994; Environmental Protection/Response Assessment/Non-government organizations advisor to Environmental Protection director generals and directors, memo of May 11, 1994, "CEN/EPS-Standing Committee - Minutes & Action Items"; Environmental Protection/Response Assessment senior advisor, notes, "Team comments/proposal..."; Environmental Protection/Response Assessment senior advisor to Major Industrial Accidents Council director, memo of March 11, 1994, "It came up..."

<sup>17</sup> Major Industrial Accidents Council director to Core Project Team, letter of March 31, 1994, "I am following..."; Major Industrial Accidents Council director, "Collation and Summary of Comments Received on Draft 3," March 28, 1994; Canadian Labour Congress secretary-treasurer to Major Industrial Accidents Council director, 1-2; Environmental Conservation/Water Research science liaison officer to Water Research director, memo of March 4, 1994, "Review of 'Environmental Issue Definition and Ranking - A Proposed Priority Setting Methodology for EC'"; Environmental Conservation/Water Research director to Major Industrial Accidents Council director, memo of March 8, 1994, "Comments on Environmental Issue Definition and Ranking"; Alberta Energy representative to Major Industrial Accidents Council director, letter of March 9, 1994, "Environmental Issue Definition and Ranking: A Proposed Priority Setting Methodology for Environment Canada"; Transport senior advisor to Major Industrial Accidents Council director, letter of

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March 11, 1994, "Further to your..."; Environmental Conservation/Ecosystem Conservation/Evaluation & Interpretation environmental quality guidelines specialist to Major Industrial Accidents Council director, memo of March 15, 1994, "Environmental Issue Definition and Ranking"; Environment/Prairie & Northern Region director to Major Industrial Accidents Council director, letter of March 15, 1994, "Draft 3 of the Environmental Issues Definition and Ranking Report"; "Draft 3 - Environmental Issue Definition and Ranking report: Summary of Comments"; Major Industrial Accidents Council director, "Collation and Summary of Comments Received on Draft 3," 19; Quebec Ministere de l'Environnement representative to Major Industrial Accidents Council director, letter of March 15, 1994, "Nous avons bien..."; Major Industrial Accidents Council director, "Collation and Summary of Comments Received on Draft 3," 2; Simon Fraser University research director to Major Industrial Accidents Council director, letter of March 15, 1994, "Thank you for..."; Environmental Protection/Response Assessment senior advisor to Major Industrial Accidents Council director, memo of March 15, 1994, "Draft #3 Environmental Issue Definition and Ranking," 1-10; Environmental Protection/Response Assessment senior advisor to Simon Fraser University research director, memo of March 20, 1994, "Here are my..."; National Research Council representative to Major Industrial Accidents Council director, memo of March 16, 1994, "Comments on Environmental Issue Definition and Ranking..."; Environmental Conservation/Ecosystem Conservation/Ecosystem Initiatives ecological risk analyst to Environmental Protection/Response Assessment senior advisor, memo of March 17, 1994, "Priority Setting: comments on Jan 31, 1994 draft"; Environmental Protection/Response Assessment senior advisor to Major Industrial Accidents Council director, memo of March 20, 1994, "1) Attached please find..."; first Health/Health Protection director general to Major Industrial Accidents Council director, letter of March 18, 1994, "Please find enclosed..."; first Health/Health Protection manager and second Health/Health Protection manager, "Comments on Environmental Issue Definition and Ranking," 1; third Health/Health Protection manager to second Health Protection director general, memo of March 14, 1994, "Attached please find..."; University of Toronto professor to Major Industrial Accidents Council director, letter of March 23, 1994, "Comments on 'Environment Issue Definition and Ranking'"; third Chemical Producers Association senior director to Major Industrial Accidents Council director, letter of March 25, 1994, "This is in..."; Environmental Protection/Pollution Prevention senior engineering advisor to Major Industrial Accidents Council director, letter, "Comments on Environmental Issue Definition and Ranking report"; Major Industrial Accidents Council director to Environmental Protection/Response Assessment senior advisor, memo of March 25, 1994, "Project team and process for reviewing comments on Draft 3 - Priority Setting Project."; Industry environmental analyst to Major Industrial Accidents Council director, memo of March 29, 1994, "Draft 3 Priority Setting Project." copied to Industry director; Angus Environmental Ltd. senior environmental engineer to Major Industrial Accidents Council director, memo of March 29, 1994, "Thanks to you..."; Corporate Policy director to Major Industrial Accidents Council director, memo of March 31, 1994, "Comments on the Third Draft Report 'Environmental Issue Ranking - A Proposed Priority Setting Methodology for Environment Canada,'" copied to Corporate Policy director general; Major Industrial Accidents Council director to Environmental Protection/Response Assessment senior advisor and Simon Fraser University research director, letters of March 24, 1994, "This letter is..."

See also Jeffrey Foran and Barbara Glenn, *Criteria to Identify Chemical Candidates for Sunsetting in the Great Lakes Basin*, George Washington University, Washington, DC, 1993; Ontario Ministry of Environment, *Candidate Substances List for Bans and Phase Outs*, Toronto, April 1992, Multi-Media Revision, October 1993; Canadian Labour Congress, *A Critique of the Ontario Hazard Assessment System*, August 1992; *Accelerated Reduction/Elimination of Toxics Criteria Sub-Committee Report*, Environment Canada, Ottawa, 1993; Robert Ginsburg, "Quantitative Risk Assessment and the Illusion of Safety," *New Solutions* 3, 2 (Winter 1993); and Liberal Party, *Creating Opportunities: The Liberal Plan for Canada*, September 1993.

<sup>18</sup> Major Industrial Accidents Council director to Environmental Protection/Response Assessment senior advisor, memo of March 25, 1994; Major Industrial Accidents Council director to Core Project Team; Major Industrial Accidents Council director, "Collation and Summary of Comments Received on Draft 3"; Environmental Protection/Response Assessment senior advisor, interview, June 25, 1995; Major Industrial Accidents Council director, fax of April 14, 1994, "Issue Definition and Ranking"; Treasury Board Secretariat, Administrative Policy Branch, Policy & Evaluation Division, "Environmental Issues - Definition and Ranking," in *Managing Risk*, Spring 1994, 7-8; Simon Fraser University research associate and Simon Fraser University research director to Environmental Protection/Response Assessment senior advisor, memo of April 19, 1994, "Attached is our..."; "Environmental Protection/Response Assessment director general to Director General Steering Committee, memo of April 26, 1994, "Agenda for April 28th Meeting"; Environment Canada Project manager to Major Industrial Accidents Council director, memo of April 26, 1994, "The DG's meeting..."; Director General Steering Committee, minutes of fifth meeting of April 28, 1994, Annex 2, 5, 6; Environment Canada, Environmental Protection Service, Response Assessment

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Directorate, "Environmental Issue Definition and Ranking: A Proposed Methodology for Environment Canada," April 27, 1994, 45-47.

<sup>19</sup> Director General Steering Committee, minutes of fifth meeting of April 28, 1994; *ibid.*, Annex 3.

<sup>20</sup> Second Health/Health Protection director general to first Health Protection director general, memo of April 29, 1994, "Environmental Priority Setting"; Director General Steering Committee, minutes of fifth meeting of April 28, 1994.

<sup>21</sup> Director General Steering Committee, agenda of fifth meeting of April 28, 1994; Director General Steering Committee, minutes of fifth meeting of April 28, 1994; second Health/Health Protection director general to first Health Protection director general.

## CHAPTER 9

### THE FAILURE OF THE ENVIRONMENT CANADA PROJECT TO BE APPROVED

In this chapter, I discuss the influence that government experts had in the *seventh* process of not re-establishing the Environment Canada Project as a priority for Environment, and the process of ending it for them. The seventh process began in April 1994 and ended in July 1994 when the Environmental Protection/Response Assessment director general re-approved the revised Project plan. And the process of ending began in July 1994 and finished ostensibly in March 1995 when the Environmental Protection assistant deputy minister failed to approve the Project.

During this ten and a half month period, several other processes of determining environmental priorities occurred. The process of ending the Environment Canada-Strategic Options Project (to use the Environment Canada and Strategic Options processes to determine federal government pollution priorities) for Environment began and finished, and the process of ending the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project (to use the Environment Canada-Canadian Petroleum Products Institute and Strategic Options processes to determine federal government and petroleum products industry pollution priorities - the Environment Canada-Canadian Petroleum Products Institute-Strategic Options process) for Environment began and finished. I also discuss in this chapter the influence that government experts had in these processes.

I show that the Industry economist and Agriculture economist had a major influence on the decision by the Environmental Protection/Response Assessment director general not to re-establish the Environment Canada Project for Environment. And other government experts seemed to have no influence. I suggest that the economists had a major influence because either they were asked for advice or they offered it. And other government experts had no influence because either they were not asked or did not offer. I also suggest that the major influence by the economists did not make a significant difference to determining "good" environmental priorities because the director general knew as much as they did about the science of deciding priorities (and the administration and policy of it). And the lack of influence by other government experts did not make a significant difference because the director general knew as much as (or more than) they did about the science.



Secondly, I show that the Industry economist had no influence on the decision by the Environmental Protection assistant deputy minister to end the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project for Environment. I suggest that she had no influence because either she was not asked for advice by the assistant deputy minister or did not offer it to him. I also suggest that her lack of influence did not make a significant difference because the assistant deputy minister knew more than she did about the science of deciding priorities.

Thirdly, I show that the Industry economist had no influence on the decision by the assistant deputy minister to end the Environment Canada-Strategic Options Project for Environment. I suggest that she had no influence because either she was not asked for advice by the assistant deputy minister or did not offer it to him. I also suggest that her lack of influence did not make a significant difference because the assistant deputy minister knew more than she did about the science of deciding priorities.

Finally, I show that government experts seemed to have no influence on the decision by the assistant deputy minister to end the Environment Canada Project for Environment. I suggest that they had no influence because either they were not asked for advice or did not offer it. I also suggest that their lack of influence did not make a significant difference because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities.

Environmental Protection/Response Assessment Director General Re-Approval of the Revised Plan

In this section, the process of not re-establishing the Environment Canada Project as a priority for Environment began and ended. Several other processes of determining environmental priorities intersected with this one, including those establishing, re-establishing, and ending the Environment Canada-Strategic Options, Environment Canada-Canadian Petroleum Products Institute-Strategic Options, Environment Canada-Canadian Petroleum Products Institute, and Environment Canada-Ecosystem Action Plan projects for the Canadian Council of Ministers of the Environment, Industry, Environment, and Agriculture.

Specifically, the Environmental Protection/Response Assessment director general and third Canadian Petroleum Products Institute senior director advised the Council/Environmental Protection Committee and provinces to establish the

Environment Canada-Strategic Options and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects. Then Industry established them for themselves.

The Industry environmental analyst argued to the Major Industrial Accidents Council director and Response Assessment senior advisor (and Response Assessment director general, via the senior advisor) that the Environment Canada-Strategic Options and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects should be re-established, and advised them to re-establish the Environment Canada Project later (develop the Environment Canada process). The Canadian Petroleum Products Institute Project contact advised the senior advisor that the Environment Canada-Canadian Petroleum Products Institute Project should be re-established. And the senior advisor advised the Response Assessment director general to re-establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options and Environment Canada projects. The Response Assessment director general updated the Advisory Committee on Environmental Protection on them. Then Agriculture re-established the Environment Canada Project (including the Environment Canada-Canadian Petroleum Products Institute-Strategic Options, and Environment Canada-Strategic Options or Environment Canada-Ecosystem Action Plan projects) for themselves.

The Agriculture senior environmental analyst advised the Response Assessment director general to re-establish the Environment Canada Project later (develop the Environment Canada process). The Fisheries director general advised the Response Assessment director general to re-establish it (including the Environment Canada-Strategic Options, and Environment Canada-Canadian Petroleum Products Institute-Strategic Options or Environment Canada-Ecosystem Action Plan projects) (test the Environment Canada process). And the Environmental Conservation/State of Environment Reporting director (formerly the Conservation & Protection/State of Environment Reporting senior economic advisor) argued the same to the senior advisor, State of Environment Reporting director general, and Response Assessment director general (develop and test the Environment Canada process). Then the Response Assessment director general did not re-establish the Project for Environment.

During these processes of determining environmental priorities, several arguments continued and emerged about whether projects themselves should be priorities, how a group should be involved in deciding priorities more generally, and a

process itself. The environmental analyst argued to the Major Industrial Accidents Council director, senior advisor, and Response Assessment director general that the Environment Canada-Strategic Options and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects should be re-established because Environment and Industry should test (use) the Environment Canada and Environment Canada-Canadian Petroleum Products Institute processes, and that benefit-cost analysts should help decide Environment's priorities. And the State of Environment Reporting director argued to the senior advisor, State of Environment Reporting director general, and Response Assessment director general that the Environment Canada Project (including the Environment Canada-Strategic Options, and Environment Canada-Canadian Petroleum Products Institute-Strategic Options or Environment Canada-Ecosystem Action Plan projects) should be re-established because Environment should develop and test (use) the Environment Canada process, and that Environment should not weight the ecological factor more than health and socioeconomic factors.

At this point, the Response Assessment director general resolved the arguments about Environment not weighting the ecological factor more than health and socioeconomic factors, and benefit-cost analysts helping decide Environment's priorities. She decided that Environment should weight the ecological factor more in the Environment Canada process, and the analysts should not help decide the priorities in the process. The other arguments were not resolved during this period, April 1994 to July 1994.

#### Evidence

In late April 1994, the Environment Canada Project continued as Environmental Protection proceeded to implement the revised Project plan, led by Environmental Protection/Response Assessment.

The day after the Director General Steering Committee meeting, the second Health/Health Protection director general asked the second Health Protection manager to provide Health's final comments on Draft 4 of the Environment Canada Project report. He wrote the first Health Protection director general (whom he represented at the meeting) (and copied the Environmental Protection/Response Assessment director general):

Environment... tabled the penultimate draft of their report... It appears that this draft will be endorsed with only minor modifications. The current draft incorporates the [Health Protection] scoring system for health issues, with the exception that future trends will be scored within the [Environment Canada] system. This draft also merges the [Canadian Petroleum Products Institute] and [Environment Canada] ranking methodologies within a single integrated system.

The next step will be to gain practical experience by exploring the ranking system to a number of environmental issues of interest to Environment... Health... will be asked to score the health components of these issues....

...We have [Environment] approval to table the latest draft.... at [the Canadian Environmental Protection Act] Federal Provincial Committee on... Environmental & Occupational Health which I will attend on your behalf [in early May].

(Draft 4 did not merge the two ranking methodologies.)

The second director general sent the seven-page Health Protection Task Force report, called Framework for Issue Prioritization, to the Response Assessment director general. Health Protection wrote, in the summary:

A framework for setting priorities for [Health Protection] related issues is described in this report. The Health Protection... model of Risk Assessment/Risk Management is used to formulate the development of a procedure for priority setting. A procedure has been selected based on the following objectives:

- simple to Implement
- decisions are transparent
- information usually available
- follows Branch's Risk Assessment/Management model

For the Risk Assessment component..., each issue will be ranked according to: the extent of the actual or potential health impact to Canadians due to the health or exposure issue associated with the activity. This component constitutes a Comparative Risk analysis in that each Branch activity is compared.

They wrote, regarding criteria:

The best scientific information available to the Branch should be used in assigning scores. A score should be assigned based on the highest level of confidence in the available scientific information. However, the best available information on any activity or issue may not be of the highest desirable quality. Thus a Level of Confidence ranking... will be assigned to each of the three Risk Assessment criteria. These rankings may be used to prioritize activities in terms of research needs.

The Advisory Committee on Environmental Protection meeting was to be held in early May. It seemed to be postponed until late May.

In early May, the Environmental Protection/Program Integration director sent his comments on Draft 4 of the Environment Canada Project report (discussed below).<sup>1</sup>

*The Environment Canada-Strategic Options and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects.* In mid-May, the **Environmental Protection/Response Assessment director general and third Canadian Petroleum Products Institute senior director, at a meeting of the Canadian Council of Ministers of the Environment/Environmental Protection Committee, advised the Committee and provinces to establish the Environment Canada-Strategic Options and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects as priorities, as shown below by excerpts from the director general and senior director's overheads.**

The director general and senior director told the Committee:

**Meeting Expected Result**

Obtain [Committee] support to participate in the demonstration of a priority setting mechanism in the Strategic Options Process....

**Benefits to Provinces**

- ultimately defines priority actions, implementation mechanism and schedules for industry and governments
- commitments to implement priority actions by all stakeholders
- addresses provincial and regional environmental issues within the process
- complements/advances provincial and regional strategies...

**Linking Priority Setting to Strategic Options Process**

- environmental issues are brought to the table by:
  - governments (Environment.../provinces)
  - industry
  - [environmental groups]
- priority setting methodology to be tested within the Strategic Options Process framework
- the result:  
A sectoral action plan

**Conclusions/Next Steps**

- support priority setting to establish sectoral action plans
- support use of joint priority setting methodology in the Strategic Options Process framework for the petroleum product sector
- individual provinces consider their own position on issues and how they wish to participate

**Guiding Principles**

- responsible decision-making
- pollution prevention
- environment/economy linkages
- harmonization
- polluter pays principle<sup>2</sup>

*The Environment Canada Project.* The same day as the Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting, the

Environmental Protection/Response Assessment director general sent the minutes of the end of April Director General Steering Committee meeting (the last meeting) to the Committee and reminded them to review Draft 4 of the Environment Canada Project report. She wrote, "For those who have not yet forwarded their final comments, It is important that they be received by [mid-May] so that they can be reflected in the final document." The director general sent Draft 4 to those members unable to attend the meeting.

Draft 4 was not widely circulated. (The Response Assessment senior advisor was concerned when I received an unsolicited copy from a colleague with the United States Environmental Protection Agency in early October.)

From early to late May, about one fourth of the Director General Steering Committee members (or their representatives on the Core Director Working Group or Project Team) sent their comments on Draft 4, and from mid- to early July, another one fourth sent theirs, as shown on pages 432 to 434 and 437 to 440.

In early May, the Environmental Protection/Program Integration director (who represented the Program Integration director general at the last Steering Committee meeting) wrote the Major Industrial Accidents Council director:

Do any other countries (or provinces/states) use a similar process to rank issues. If so..., this should be stated and the success of the initiative discussed.

I think that there should be some flexibility in how this process will be carried out. It may be useful to perform it more often than once every five years....

...Typically, individual species will show signs of distress before the ecosystem as whole begins to suffer. Do effects on a species rank as serious under the ecological effects severity criteria, or do several species have to suffer?.... To be proactive, it should be possible to flag that a single species is in danger.

...Would it not be possible to incorporate socio-cultural concerns under the socio-economic section?

....If you wish to discuss..., please... contact [a staff member].

His comments were later sent to the Response Assessment director general.

**Industry re-established the Environment Canada-Strategic Options and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects as priorities for themselves, as shown below. Also shown, the Industry environmental analyst (a Core Project Team member who represented the Industry director general at the Steering Committee meeting) argued to the Council director that the projects should be re-established because Environment and Industry should test (use) the Environment Canada and Environment Canada-**

**Canadian Petroleum Products Institute processes, and that benefit-cost analysts should help decide Environment's priorities. She advised him that the Environment Canada Project should be re-established later (develop the Environment Canada process).**

The environmental analyst wrote the Council director (and copied the Industry director general and director):

...I am uncomfortable with the fundamental changes... to the method of scoring socio-economic factors in this latest draft. The availability and sustainability of environmental (renewable) resources will be extremely difficult to measure for many industries which source raw materials outside Canada. It will also be difficult to quantify the deterioration of water and air quality, which may be the most significant impacts of many manufacturing operations. ...The draft proposes a methodology that will mainly be of interest to primary processors of Canadian resources.

...It seems fruitless to continue to discuss the viability of the methodology in the abstract. Industry... concurs with the message given at the... Steering Committee meeting, namely the need to begin testing the methodology in pilot situations. As I pointed out..., should sectors have a conventional method of calculating socio-economic impacts, the methodology should be flexible enough to accept their estimates rather than imposing this revised approach.

Actual experience with the different industries through the Strategic Options Process will be the next important step, and we look forward to working with Environment... and the multi-stakeholder discussion tables.

She also sent her memo to the senior advisor in late May.

In mid-May, the Corporate Policy director (a Core Director Working Group member) re-sent his end of March Draft 3 comments and wrote the Council director (and copied the Response Assessment director general), "We do not have significant comments to add."

And, in late May, the second Health/Health Protection manager sent Health's comments to the Response Assessment director general. Regarding general comments, she wrote her:

The proposed scoring methodology regarding human health effects, as described in the latest draft is similar but not identical to, that developed by... Health Protection..., and that described in Annex 9 [on alternative health scoring methodologies] of the [previous draft] (detailed comments regarding... these methodologies, were provided... in March). The primary difference between the [Health Protection] and Annex 9 methodologies, was the inclusion of a factor dealing with "time trend"..., in the latter. Time trend was to be considered in a quantitative way, but would not be included as part of the health risk score.

Similarities and differences between the Health Protection methodology, and that proposed in Draft 4 included:

Both methodologies include the following criteria:

- severity of outcome...; and
- extent of risk..., and population at risk...

Both methodologies define these criteria in the same way; and use the same scoring system to represent different possible values of the criteria.

...The [Environment] methodology includes a criterion dealing with "time trend", while the [Health Protection] methodology does not. Time trend is considered in a "quantitative" way in the [Environment] methodology..., as in the case of the other criteria.

The health risk score calculated by the [Health Protection] methodology uses an additive mathematical model, while that calculated by the [Environment] methodology uses a multiplicative model (and includes the time trend score).

The [Health Protection] methodology assigns a "level" of risk to various ranges of risk scores... The [Environment] methodology does not assign a level of risk... as a clustering scheme is used... to produce a "composite" rating.

Meanwhile, by mid-May, the Response Assessment senior advisor asked the Resource Futures executive director for advice on approaching the Canadian Environmental Network with the work on "priority setting" and "engaging them in a sincere way" (as decided at the mid-March Network-Environmental Protection Standing Committee meeting). The executive director wrote the senior advisor (and copied the Network executive director):

Here are my immediate thoughts. I... recommend you try to address the following questions:

- What happened to the methodology?? Write a letter to all participants... at the [Environmental Group] workshop... I would share with them process issues and content related changes..., and include a copy of the most recent draft...
- How will the methodology be used? Scope out how you see the methodology being used at Environment..., who else is testing it and when the test results are required to move the methodology forward. Build a case for your perspective. ...Environmentalists see misuse of instruments more frequently. ...This means the method would be used differently than they expected during their involvement.
- What is the purpose of their involvement? Describe how the time and effort... will be put to good use. Because a large part of the sector works on a volunteer basis, they are hesitant to get involved in something that does not have clear influence. However, if the activity is funded, they are far more willing to get involved.... You should be clear about this yourself before you contact them.
- What will they do? Meet with [the Network executive director] and outline a project that the [Network] might engage in with Environment... You might suggest that the [Network] use the methodology (or amend it as needed) to conduct their own priority setting exercise. I recently received a letter from the [the Network] regarding a review they are doing of their operations....



- What are your expectations of time frame for their involvement?? Allow the [Network] lots of lead time. ....They are in fact quite organized but strive to be a very democratic organization. ...The work of the is supported largely by volunteers, and others that are spread pretty thin, ...for them to accomplish anything it takes some time. They must contact many dispersed people.... Ask them how much time they need. Often processes they are engaged in move along without them because they operate at a slower pace, and this infuriates them.
- What will be the vehicle for them to voice their dissatisfaction and how will it be used? If they are dissatisfied..., they should be given the opportunity to express their opinions and advice, and to ensure that these are listened to in a sincere way. Describing how this would take place up front would help to build trust in the process, particularly if this prescription was really followed...
- How will you follow up, and how will they be involved...? Be clear about this at the outset, and again, ensure that you follow the prescribed course of action to the tee, unless you ask them otherwise.<sup>3</sup>

*The Environment Canada-Canadian Petroleum Products Institute-Strategic Options and Environment Canada projects.* By late May, the Environmental Protection/Response Assessment senior advisor drafted speaking notes for the Environmental Protection assistant deputy minister to use at the Advisory Committee on Environmental Protection meeting and sent them to the Response Assessment director general for review and approval. He also sent her the Resource Futures executive director's letter and a note from the Canadian Petroleum Products Institute Project contact. (The note was not in the Environment Canada Project file.) **As shown below by excerpts from the senior advisor's covering memo, the contact advised him that the Environment Canada-Canadian Petroleum Products Institute Project should be re-established as a priority. Also shown, the senior advisor advised the director general to re-establish the Environment Canada-Canadian Petroleum Products Institute-Strategic Options and Environment Canada projects.**

Regarding Canadian Petroleum Products Institute working groups, the senior advisor wrote the director general:

- would not be an industry-led but bipartisan group that could undermine multi-stakeholder nature of [Strategic Options] process
  - groups one (Issue Ranking) and two (Option Ranking) would still be talking theory
  - a one or two day workshop isn't the appropriate vehicle for getting the work done
- We need to meet to draw up a workplan, assign responsibilities for assembling and assessing the data. This homework should be tabled at the [Strategic Options Project] table.
- A small team of two to four people could be chosen to prepare a presentation like last time.

Regarding the Canadian Environmental Network, the senior advisor wrote:

You may wish to send the most recent report, [Director General] steering committee minutes and [Canadian Council of Ministers of the Environment] [briefing] to [the Network] and provide them with same [sic] opportunity to express any final reservations.

We should prepare a discussion record and respond directly to each of their concerns about the report and potential misuse of the method.

We should invite them to participate in the pilot [Strategic Options Project] (if we haven't already), make regular progress reports where the method is being used and solicit their input where appropriate, for example for a departmental issue scan.

**In late May, at the eighth Advisory Committee on Environmental Protection meeting, the director general used the assistant deputy minister speaking notes, and updated the Committee on the Environment Canada and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects. She told them:**

- Environmental Protection... is finalizing the report on "Environmental Issue Definition and Ranking"
  - over 320 copies were circulated and 24 sets of comments were received
  - the comments received supported the project's objectives and were generally positive and constructive
- [Environmental Protection] is encouraging the incorporation of priority setting in decision-making processes
  - by government to provide a more transparent and predictable policy and regulatory climate
  - by industry to develop investment plans that reflect their commitment to responsible environmental management
- [Environmental Protection] in partnership with [the Canadian Petroleum Products Institute] has proposed to demonstrate the use of priority setting methods within the context of the Strategic Options Process... for the petroleum products sector....
- [The Institute] has indicated a willingness to use this method to consider and act on the whole range of environmental issues arising from their sector.
- [Environmental Protection] has recommended that [the Canadian Council of Ministers of the Environment] Environmental Protection Committee... give further consideration to the use of priority setting methods
- [Environmental Protection] is seeking other opportunities and partners to demonstrate the use of the method

(Over 320 copies of Draft 3, not Draft 4, were circulated.)

Other items on the Advisory Committee agenda included Industry and Sustainable Development, Environmental Management Systems, Environmentally Responsible Decision-Making, Economy and Competitiveness, Packaging Stewardship,

Implementation of Pesticide Registration Review, Harmonization - Internal Barriers to Trade Negotiation, Green Procurement Policy, and Environment Industries Update.

By now, the senior advisor was on assignment with the Intergovernmental Panel on Climate Change. After the Advisory Committee meeting, the director general replied to the senior advisor's late May memo and wrote him:

I haven't had a chance to follow up with you on [the executive director] comments. Perhaps we can follow up on these when you and I are back. I am trying to speak to [the Canadian Petroleum Products Institute Project contact]. Have discussed with [the Response Assessment/Options Evaluation (formerly the Industry) executive] and [Environmental Protection/Pollution Prevention/Industrial Sectors chief] and I think we are all reaching the same conclusions.

Regarding the Canadian Petroleum Products Institute working groups, the director general wrote that she agreed the groups "could undermine the multi-stakeholder nature of the [Strategic Options] process," she agreed "this homework should be tabled at the [Strategic Options Project] table," and she was "not convinced it is [Environment] who has a lot of homework to do." Regarding the speaking notes, the director general wrote, "I did the presentation and used these points - they were helpful."<sup>4</sup>

*The Environment Canada Project.* From mid-June to early July, another one fourth of the Director General Steering Committee members (or their representatives) sent their comments on Draft 4 of the Environment Canada Project report, as shown on pages 437 to 440.

**In mid-June, Agriculture re-established the Environment Canada Project (including the Environment Canada-Canadian Petroleum Products Institute-Strategic Options, and Environment Canada-Strategic Options or Environment Canada-Ecosystem Action Plan projects) as a priority for themselves, as shown below. Also shown, the Agriculture senior environmental analyst (a Project Team member who represented the Agriculture director general at the last Steering Committee meeting) advised the Environmental Protection/Response Assessment director general to re-establish the Environment Canada Project later (develop the Environment Canada process).**

The senior environmental analyst wrote the Response Assessment director general:

In general, we can support [Environment's] efforts to develop a systematic and transparent approach to prioritizing environmental issues.

Our main concern... The ranking and clustering methodology... needs to be scrutinized further. ...The framework places more weight on ecological concerns than on socio-economic and health concerns. We understand that [Environment's] role is to ensure the sustainable use of environmental resources and environmentally-responsible decision-making. Sustainable development is described in the Green Plan as an activity in which the environment is fully incorporated into the economic decision-making process. If the framework is only to be used to determine where the issue should be discussed (i.e. at which decision table), then the... methodology could be appropriate. However, if the... methodology is to be used to prioritize [sic] environmental issues for government action then the framework does not seem to fulfill the sustainability principles outlined in the Green Plan, which states that "environment/economy linkages should be determined at all stages of decision-making."

...The proposed methodology for scoping, screening and scoring environmental issues is the most useful and relevant section of the report. Transparency in the methodology... is important since it allows for adjustments... to suit the needs of specific users. If other departments were to apply the methodology, it is likely that the clustering scheme would assign different weights to the various factors.

As a suggestion for the longer-term, it might help if ways could be found to express or normalize the environmental impacts and risks on the basis of a common unit, such as in monetary terms (\$). This has been achieved in some cases by environmental and health economists and would facilitate communication of environmental issues and impacts outside of [Environment] to other departments, such as Finance.

...I apologize for taking this long to respond... but things have been rather busy around here of late.

**The Fisheries director general advised the Response Assessment director general to re-establish the Environment Canada Project (including the Environment Canada-Strategic Options, and Environment Canada-Canadian Petroleum Products Institute-Strategic Options or Environment Canada-Ecosystem Action Plan projects) as a priority (test the Environment Canada process), as shown below.**

The Fisheries director general wrote the Response Assessment director general, "I have no specific observations on the identification and ranking methodology... However, I would be quite interested in seeing the methodology applied in some sort of test case scenario."

**At the end of June, the Environmental Conservation/State of Environment Reporting director argued to the Response Assessment senior advisor, State of Environment Reporting director general, and Response Assessment director general to re-establish the Environment Canada Project (including the Environment Canada-Strategic Options, and Environment Canada-Canadian**

**Petroleum Products Institute-Strategic Options or Environment Canada-Ecosystem Action Plan projects) as a priority because Environment should develop and test (use) the Environment Canada process, and that Environment should not weight the ecological factor more than health and socioeconomic factors, as shown below.**

The director wrote the senior advisor (and copied the director generals):

The Project Team should be commended for an excellent piece of work....

We are heartened by the emphasis given to the ecosystem approach, the [stress-exposure-response] and [activity-stress-exposure-response-adapt] frameworks, and the suggestion that Canada's terrestrial ecozones and ecoregions might well serve as the fundamental geographical scale for stress delineation, exposure measurement and response determination.

...You should note that State of... Environment has been working with the provinces and other federal departments to refine this ecological classification system as well as to promote its wider use. We now have provincial and federal departments' concurrence on a set of ecological boundaries at an ecodistrict/ecoregion/ecozone level...

Our major reservation....

The proposed clustering scheme is..., at least, implicitly based on the assumption that [Environment's] mandate is exclusively or largely confined to monitoring and safeguarding the health and integrity of ecological systems.

Many at Environment... would take exception to this. The Department also has a leadership role, and perhaps even a pre-eminent strategic role, in the area of sustainable development.

As such, it would be appropriate for the Department to set its priorities, not only within an ecological framework but also within a sustainable development framework... Priorities should reflect and integrate the three pillars of sustainable development; that is, the environment, the economy and people....

The... clustering system could... undermine the Department's objective of being, and being seen, as the pre-eminent advocator and national voice on [sustainable development]. The... system..., at least, implicitly conveys the message that the Department's main line of business is ecosystem health.

To an extent, the divergence in views on this may reflect different views regarding the Department's mandate and role, importance of activities, etc.

In our reporting activities..., we... have gradually but deliberately been expanding our reporting to increasingly encompass all dimensions of sustainable development. We may still have a long way to go...

...The three categories of effects (health, ecological, and socioeconomic [plus cultural]) ought to be scored and weighted to rank priorities, as was done in earlier drafts... ...Priorities would be set taking account, more explicitly, of a broader range of considerations.

We agree that the next step should be to validate the methodology by applying it to real live examples (to test its resolution power, whether it can deal with a wide range of specific and broad issues, etc.).

...It will be necessary to get broad acceptance of the methodology, and its application for priority setting, within the Department. It will be very difficult to get stakeholders to buy into this if we... are not users of the methodology.

Finally, in early July, the second Health/Health Protection director general re-sent the second Health Protection manager's late May Draft 4 comments to the Response Assessment director general. He wrote her (and copied the first Health Protection director general, a Steering Committee member):

I would like to underscore... that the current draft, unlike previous drafts, does not use the priority ranking scheme developed by... Health Protection... for health issues. This is not necessarily a fatal flaw in your methodology; however, it may lead to inconsistency in future priority rankings.

The other half of the Steering Committee members - representing Environmental Protection/Pollution Prevention, Environmental Conservation/Wildlife, Environmental Conservation/Ecosystem Conservation, Atmospheric Environment, Heritage, Natural Resources/Energy, Finance, and Transport - did not send comments on Draft 4.

Meanwhile, as suggested by the senior advisor, a Queen's University research associate (me, formerly the Simon Fraser University research director) asked Environment to sponsor her attendance at the Vermont Law School course on Comparative Risk and Public Policy in mid-July. I suggested it at the beginning of July and wrote him that, in return, I was to provide a short report based on the course materials that focused on public participation. I did not receive funding. (This memo was not in the Environment Canada Project File.)

**In mid-July, the Response Assessment director general did not re-establish the Environment Canada Project for Environment. She resolved the arguments about not weighting the ecological factor more than health and socioeconomic factors, and benefit-cost analysts helping decide Environment's priorities. The director general decided that Environment should weight the ecological factor more in the Environment Canada process, and the analysts should not help decide the priorities in the process, as shown below.**

The director general sent the Director General Steering Committee's comments on Draft 4 of the Project report to a Conservation & Protection/Ecosystem Sciences/Conservation postdoctoral fellow and asked him to pass them on to the senior advisor when he returned from assignment. She wrote, "My sense is that these are not

critical flaws and should simply be retained on file should there be further amendments to the document at some time in the future.”

In other words, the director general re-approved the revised Project plan.<sup>5</sup>

#### Environmental Protection Assistant Deputy Minister Failure to Approve the Project

In this section, the process of ending the Environment Canada Project as a priority for Environment began and finished. Several other processes of determining environmental priorities intersected with this one, including those establishing, re-establishing, and ending the Strategic Options, Environment Canada, Environment Canada-Ecosystem Action Plan, Environment Canada-Canadian Petroleum Products Institute-Strategic Options, Canadian Petroleum Products Institute, and Environment Canada-Strategic Options projects for Environment, Health, Transport, the Canadian Petroleum Products Institute, and Ontario Environment & Energy.

Specifically, Environmental Protection re-established the Strategic Options Project for Environment. And Health established it for themselves.

The Environmental Protection/Response Assessment senior advisor seemed to advise the Response Assessment director general to re-establish the Environment Canada Project (including the Environment Canada-Ecosystem Action Plan project) (use the Environment Canada process). Then Environmental Protection re-established the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project for Environment. Health and Transport re-established it for themselves. The Institute ended it for themselves. It seemed that the Environmental Protection assistant deputy minister ended it for Environment. And Health and Transport ended it for themselves.

The Institute advised Environment & Energy to establish the Canadian Petroleum Products Institute Project. Then it seemed that the Environmental Protection assistant deputy minister ended the Environment Canada-Strategic Options and Environment Canada projects for Environment. And he did not establish the Environment Canada-Ecosystem Action Plan project.

During these processes of determining environmental priorities, the Institute resolved the arguments about re-establishing the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project because Environment and Industry should test the Environment Canada-Canadian Petroleum Products Institute process. They ended the Project for themselves, and decided not to test the process.

And it seemed that the Environmental Protection assistant deputy minister resolved the arguments about re-establishing the Environment Canada-Strategic Options Project because Environment and Industry should test the Environment Canada process, and re-establishing the Environment Canada Project because Environment should test the Environment Canada process. He ended the projects for Environment, and decided not to test the process. All arguments were basically resolved during this period, July 1994 to March 1995.

### Evidence

In mid-July 1994, the Environment Canada Project was on hold as Environmental Protection proceeded to implement the revised Project plan, led by Environmental Protection/Response Assessment. Details about the outcome of the Project are unclear. Many of my interviewees did not provide information about it and only a few documents were in the Environment Canada Project file. The documents referred to below were not, unless otherwise stated.

*The Strategic Options Project.* By now, the Environmental Protection/Response Assessment/Options Evaluation Team had finished drafting a guidance document for the Strategic Options Project. It was "carefully negotiated" with the provinces.

**Environmental Protection re-established the Project as a priority for Environment, as shown below by excerpts from the guidance document. Also shown, Health established it for themselves.**

The Team wrote, in the introduction:

Environment..., Health..., other federal departments and provincial governments share responsibility in managing [Canadian Environmental Protection Act] toxic substances and; as such, are key partners in the development of options for them....  
...Environment... and Health... and, key partners are proposing a multi-stakeholder approach for the development of options.<sup>6</sup>

*The Environment Canada Project.* **By early August, the Environmental Protection/Response Assessment senior advisor seemed to advise the Response Assessment director general to re-establish the Environment Canada Project (including the Environment Canada-Ecosystem Action Plan project) as a priority (use the Environment Canada process), as shown below.**



The senior advisor was trying to get a trial run of the Environment Canada process in an ecosystem action plan underway.<sup>7</sup>

*The Strategic Options and Environment Canada projects.* By mid-August, the Environmental Protection/Response Assessment/Options Evaluation director, the lead for the Strategic Options Project, did not support the Environment Canada Project.<sup>8</sup>

*The Strategic Options and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects.* By late August, the Strategic Options Project Implementation Group was drafting invitations from the Environmental Protection assistant deputy minister to stakeholders to join the Strategic Options Project, including the Strategic Options Project for the Petroleum (refining, distribution, marketing and fuels) Sector (the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project). The Group included Environmental Protection/Pollution Prevention (Commercial Chemicals and Industrial Sectors) and Environmental Protection/Response Assessment (Options Evaluation and Economic Analysis). They were to propose Health as a member. Other Strategic Options projects included substances (benzidine/dichlorobenzidine, chlorinated paraffin wax, and refractory ceramic fibres) and sectors (dry cleaning and solvent degreasing).

The Canadian Environmental Network, Canadian Labour Congress, Canadian Federation of Labour, Association of First Nations, Canadian Network of Toxicological Centers, Canadian public health associations, Canadian Consumers Association, and industry associations were to be invited to join the issue tables.

Health wished to, and were to, join as "fully active participants."<sup>9</sup>

*The Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project.* Benzene was the first Priority Substances List "trigger" for the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project. Other related Canadian Environmental Protection Act toxic substances included polycyclic aromatic hydrocarbons, heavy metals, and inorganic fluorides. In addition to options to reduce exposure to the substances, the Project was to address matters recommended for consideration as a result of the Environment Canada Regulatory Review for the sector (specifically, Environment's Refinery Effluent Regulation and Guideline).

**Environmental Protection re-established the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project as a priority for Environment, as shown below. Also shown, Health and Transport re-established it for themselves.**

The Environmental Protection/Pollution Prevention/Industrial Sectors chief was now the chair or co-chair of the Project. He contacted potential stakeholders about participation. The Association of International Automobile Manufacturers, Automobile Protection Association, Canadian Automobile Association, Canadian Refining Companies, and Motor Vehicle Manufacturers Association were to be invited to join. Health and Transport joined.

"Priority setting" was on the agenda for the Canadian Council of Ministers of the Environment/Strategic Planning Committee meeting in August.<sup>10</sup>

*The Environment & Energy and Environment Canada projects. In early September, at an Ontario Environment & Energy Project meeting, the Environmental Protection/Response Assessment senior advisor presented the Environment Canada process.* I was now participant-observing the Environment & Energy Project as part of my doctoral research, and helped arrange the presentation. Although the Environment & Energy Project coordinator, and senior advisor both wanted the meeting to happen, neither "took the lead." The Response Assessment director general was reluctant to give the senior advisor permission. (Earlier, in July, I was contracted to prepare a background report on "risk-based environmental priority setting processes" for Environment & Energy. The senior advisor had encouraged me to do so. When I asked him why Environment & Energy contracted me and did not simply use the CanTox report, he told me that things did not work that way between the federal and provincial governments.)<sup>11</sup>

*The Environment Canada Project.* In late September, the Canadian Labour Congress national director sent four pages of notes on the agenda items and policy issues in the Advisory Committee on Environmental Protection, including Evaluation of Advisory Committee and Priority Setting, to the United Steelworkers of America, Canadian Autoworkers Union, Canadian Union of Public Employees, and Communications, Energy & Paperworkers Union of Canada (all Committee members)

(and copied the fourth Canadian Environmental Network representative). He wrote them:

...I hope [the notes] will be useful for the [mid-October meeting] and in caucusing with the environmental representatives...

[The Committee] has been useful for obtaining information on the work and future plans of Environment... but it has been of limited use to labour because the terms under which Industry... and Environment... will accept advice from the stakeholders is not clear. Business has been successful in pursuing its agenda in Environment.... Though we have attempted joint strategies with the environmental representatives, this has not been successful; one reason for this is unbalanced representation on the part of the environmental movement which we hope will change as a result of the new round of appointments to [the Committee]....

The government's scheme for setting priorities for Environment... has been criticized by the [Congress] and [environmental groups] on the grounds, mainly, that the methodology is incoherent. The documentation shows, mercifully, that this proposal is likely to go to the [Canadian Council of Ministers of the Environment], i.e., nowhere....

In all cases, we should ask questions about the state of progress on these topics and work with environmentalists for federal environmental leadership, over pollution prevention and workers' environmental rights in particular.

His other notes were on the Committee agenda items of Biodiversity, Pollution Prevention, Persistent Bioaccumulative Toxic Synthetic Substances (non-government organizations withdrawal from the Accelerated Reduction/Elimination of Toxics Project), North American Agreement on Environmental Cooperation, Environmental Harmonization (Canadian Environmental Network representatives suspended membership), Canadian Environmental Protection Act Parliamentary Review, and Economic Instruments.

"Priority setting" was on the agenda for the Committee meeting in October. (The meeting was originally scheduled for early September.)<sup>12</sup>

*The Environment Canada-Canadian Petroleum Products Institute-Strategic Options and Canadian Petroleum Products Institute projects. By early October, the Canadian Petroleum Products Institute resolved the arguments about re-establishing the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project as a priority because Environment and Industry should test the Environment Canada-Canadian Petroleum Products Institute process. They ended the Project for themselves, and decided not to test the process, as shown below. Also shown, it seemed that the Environmental Protection assistant*

**deputy minister ended the Project for Environment. And Health and Transport ended it for themselves.**

The Institute decided to do "benzene and benzene only."

The Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project was no longer included in documents about the Strategic Options Project.

Items on the agenda of the Petroleum Products Industry Advisory Committee meeting in mid-October included "Strategic Options: Where to go with the process" and "Priorities: Progress in engaging a broader constituency," with the discussions to be led by the Environmental Protection assistant deputy minister and third Institute senior director, respectively. Other items and discussion leaders included: Opening remarks, agenda review and action items from last meeting, led by the Natural Resources/Energy assistant deputy minister; Sector Competitiveness Framework; Fuels/Engine Committee (harmonization, MMT, and low sulphur diesel), co-led by the Environmental Protection assistant deputy minister; Climate Change (National Action Program, Voluntary Challenge Program), led by the second Petro-Canada senior manager; Task Force on Economic Instruments and Disincentives, led by the Finance director and Environmental Protection assistant deputy minister; and Alternate Transportation Fuels, led by the Energy assistant deputy minister. (The agenda was in the Environment Canada Project file.)<sup>13</sup>

*The Environment Canada Project.* The Environmental Protection/Response Assessment senior advisor suggested I co-author a paper with him on "risk-based environmental priority setting" for presentation at a Society for Risk Analysis conference.<sup>14</sup>

*The Canadian Petroleum Products Institute Project.* **The Canadian Petroleum Products Institute conducted an in-house trial run and, by mid-November, advised Ontario Environment & Energy to establish the Canadian Petroleum Products Institute Project as a priority, as shown below.**

A fourth Institute senior director presented the Project at the Ontario Conference on Environment & Economy.

The Institute planned a full-scale trial run, hoped to involve Environment & Energy, and was considering how to involve the public "not without some trepidation."

The Institute also planned a workshop, later postponed until early 1995 and then beyond.<sup>15</sup>

*The Strategic Options Project.* "Provinces remain concerned with the jurisdictional considerations of certain [Canadian Environmental Protection Act] 'toxic substances' and are not 'buying in' readily to the process." "Certain... substances are very problematic, because they are widely used in Canada (e.g. Benzene), they are know carcinogens (e.g... benzene)... Efforts to control these will have significant impacts on various industry sectors and, in some cases, other jurisdictions." "At a time of significant budget cuts and downsizing, it is imperative to streamline toxics management. The [Strategic Options Project], if successful, will facilitate federal\provincial harmonization on actions related to [the first Priority Substances List] toxics."<sup>16</sup>

*The Program Review and other projects.* Meanwhile, there were further budget cuts, followed by another Environment restructuring, and a new Environment strategic planning process.

**In March 1995, as a result of Program Review, support for the Advisory Committee on Environmental Protection was cut.** The federal government established the Program Review project as a priority for the federal government by now.

Environmental Protection standing committees with the Mining Association and Canadian Environmental Network (among others) were also cut. The Environmental Protection/Response Assessment director general wrote staff, "Each of the outside groups affected by this change are still considered to be valued stakeholders to the Department. ...It is important that an effort be made to continue to meet with them as specific issues arise." (Her memo was the final document in the Environment Canada Project file.)<sup>17</sup>

*The Environment Canada and Environment Canada-Strategic Options projects.* **By the end of March 1995, it seemed that the Environmental Protection assistant deputy minister resolved the arguments about re-establishing the Environment Canada-Strategic Options Project because Environment and Industry should test the Environment Canada process, and re-establishing the Environment Canada Project because Environment should test the Environment Canada process. He**

**ended the projects for Environment, and decided not to test the process. Also shown, the assistant deputy minister did not establish the Environment Canada-Ecosystem Action Plan Project.**

There was a move to "deep six" the Environment Canada Project.

No further amendments were made to Draft 4, yet the Environment Canada Project file was not closed.

In other words, the Environmental Protection assistant deputy minister failed to approve the Environment Canada Project.<sup>18</sup>

### Discussion

#### The Environment Canada Project

*Re-establishing it for Environment.* During the seventh process of not re-establishing the Environment Canada Project as a priority for Environment, the Industry economist advised the Environmental Protection/Response Assessment director general (via the Response Assessment senior advisor) to allocate more resources to this Project later. And the Agriculture economist advised the director general to allocate more resources later. Then the director general - the interim decision-maker for this Project - decided not to allocate more resources at the time, so the economists had a major influence on the decision. Other government experts did not offer advice, so they seemed to have no influence.

In this process, dissimilar to the first through sixth processes of re-establishing this Project for Environment (discussed in Chapters 3 to 8), the Industry economist was asked for advice by the Industry director general, and offered it to the Response Assessment director general (via the senior advisor); the Agriculture economist seemed to be asked by the Agriculture director general, and offered it to the Response Assessment director general; and other government experts were not asked, and did not offer. So perhaps the economists had a major influence on the decision because *either they were asked or offered*. And other government experts had no influence on the decision because *either they were not asked or did not offer*. But why were the economists asked, and why did they offer? And why were other government experts not asked, and why did they not offer? In the process that was to be developed and used in

this Project - the Environment Canada process - government and non-government experts were to be asked by Environment and other federal departments.

Like government experts, the Response Assessment director general was a public servant, but unlike them, she was a manager (Environment), not an expert, although she had expertise in engineering. So perhaps the major influence by the economists did not make a significant difference to determining "good" environmental priorities because the director general knew as much as they did about the science of deciding priorities. And the lack of influence by other government experts did not make a significant difference because the director general knew as much as (or more than) they did about the science. In addition, the Industry and Agriculture director generals were other federal department managers with expertise in natural science. Further, the other participants - including Environment and other federal department managers who had expertise in engineering, natural science, and economics - did not question if this Project should not be re-established, with the major exceptions of the senior advisor who advised the Response Assessment director general to re-establish it and the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project, the Fisheries director general who advised the Response Assessment director general to re-establish this Project, and the Environmental Conservation/State of Environment Reporting director (an Environment manager with expertise in economics) who argued the same to the Response Assessment director general. In particular, after the Conservation & Protection (now the Environmental Protection) assistant deputy minister asked the Director General Steering Committee to advise whether this Project should be re-established (use the process); the Committee (including the Response Assessment director general, and the economists) did not re-establish it, but re-established and established the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project, and established the Environment Canada-Strategic Options or Environment Canada-Ecosystem Action Plan project. But what did other government experts know?

#### The Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project

*Ending it for Environment.* During the process of ending the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project for

Environment, the Industry economist argued to the Environmental Protection/Response Assessment director general (via the Response Assessment senior advisor) to reallocate resources to this Project (and to the Environment Canada-Strategic Options Project). Then it seemed that the Environmental Protection assistant deputy minister - the final decision-maker for this Project - decided to stop allocating resources, so the economist had no influence on the decision.

In this process, the economist was asked for advice by the Industry director general, and argued it to the Response Assessment director general (via the senior advisor). So perhaps the economist had no influence on the decision because *either she was not asked for advice by the assistant deputy minister or did not offer it to him*. But why was she asked (by anyone), and why did she offer? In the processes that were to be used in this Project - the Environment Canada-Canadian Petroleum Products Institute and Strategic Options processes - government and non-government experts were to be asked by Environment, other federal departments, and others.

Like the economist, the assistant deputy minister was a public servant, but unlike her, he was a manager (Environment senior), not an expert, although he had expertise in engineering. So perhaps the lack of influence by the economist did not make a significant difference because the assistant deputy minister knew more than she did about the science of deciding priorities. In addition, the Response Assessment director general was an Environment manager with expertise in engineering. Yet, the Industry director general was a manager with expertise in natural science. Further, the other participants - including Environment, other federal department, and provincial managers who had expertise in engineering, natural science, and economics - questioned if this Project should be ended, with the major exception of the Canadian Petroleum Products Institute who ended it. In particular, after Environmental Protection (including the assistant deputy minister) established it, the Institute seemed to establish it; the Director General Steering Committee (including the Response Assessment director general, and Agriculture and Industry economists) re-established and established it, established the Environment Canada-Strategic Options or Environment Canada-Ecosystem Action Plan projects, and did not establish the Environment Canada Project; the Response Assessment director general and third Institute senior director advised the Canadian Council of Ministers of the Environment/Environmental Protection Committee and provinces to establish it and the Environment Canada-Strategic Options Project; Industry re-established them; the senior advisor advised the Response Assessment director



general to re-establish this Project and the Environment Canada Project; Agriculture re-established this Project, and the Environment Canada-Strategic Options or Environment Canada-Ecosystem Action Plan projects; the Fisheries director general advised the Response Assessment director general to re-establish the Environment Canada Project; the Environmental Conservation/State of Environment Reporting director argued the same to the Response Assessment director general; Environmental Protection re-established it; Health and Transport re-established it. But what did other government experts know?

### The Environment Canada-Strategic Options Project

*Ending it for Environment.* During the process of ending the Environment Canada-Strategic Options Project for Environment, the Industry economist argued to the Environmental Protection/Response Assessment director general (via the Response Assessment senior advisor) to reallocate resources to this Project (and to the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project). Then it seemed that the Environmental Protection assistant deputy minister - the final decision-maker for this Project - decided to stop allocating resources, so the economist had no influence on the decision.

In this process, the economist was asked for advice by the Industry director general, and argued it to the Response Assessment director general (via the senior advisor). So perhaps the economist had no influence on the decision because *either she did not offer advice to the assistant deputy minister and was not asked for it by him.* But why was she asked (by anyone), and why did she offer? In the processes that were to be used in this Project - the Environment Canada and Strategic Options processes - government and non-government experts were to be asked by Environment and other federal departments.

Like the economist, the assistant deputy minister was a public servant, but unlike her, he was a manager (Environment senior), not an expert, although he had expertise in engineering. So perhaps the lack of influence by the economist did not make a significant difference because the assistant deputy minister knew more than she did about the science of deciding priorities. In addition, the Response Assessment director general was an Environment manager with expertise in engineering. Yet, the Industry director general was a manager with expertise in natural science. Further, the other

participants - including Environment and other federal department managers who had expertise in engineering, natural science, and economics - questioned if this Project should be ended. In particular, after the Director General Steering Committee (including the Response Assessment director general, and Agriculture and Industry economists) established it or the Environment Canada-Ecosystem Action Plan project, re-established and established the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project, and did not re-establish the Environment Canada Project; the Response Assessment director general and third Canadian Petroleum Products Institute senior director advised the Canadian Council of Ministers of the Environment/Environmental Protection Committee and provinces to establish this Project; Industry re-established it and the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project; Agriculture re-established this Project or the Environment Canada-Ecosystem Action Plan project, and the Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project; the Fisheries director general advised the Response Assessment director general to re-establish the Environment Canada Project; and the Environmental Conservation/State of Environment Reporting director argued the same to the Response Assessment director general. But what did other government experts know?

#### The Environment Canada Project, Continued

*Ending it for Environment.* During the process of ending the Environment Canada Project for Environment, it seemed that the Environmental Protection assistant deputy minister - the final decision-maker for this Project - decided to stop allocating resources to it. Government experts did not offer advice, so they seemed to have no influence on the decision.

In this process, government experts were not asked for advice, and did not offer it. So perhaps they had no influence on the decision because *either they were not asked or did not offer*. But why were they not asked, and why did they not offer? In the process that was to be developed and used in this Project - the Environment Canada process - government and non-government experts were to be asked by Environment and other federal departments, but ultimately they were not.

Like government experts, the assistant deputy minister was a public servant, but unlike them, he was a manager (Environment senior), not an expert, although he had

expertise in engineering. So perhaps the lack of influence by government experts did not make a significant difference because the assistant deputy minister knew as much as (or more than) they did about the science of deciding priorities. Further, the other participants did not question if this Project should be ended, with the minor exception of the Environmental Protection/Response Assessment senior advisor who seemed to advise the Response Assessment director general to re-establish it. But what did other government experts know?

It is important to note that one participant in the Environment Canada and other projects again questioned if experts from certain disciplines should be involved in determining environmental priorities. The Industry economist argued to the Environmental Protection/Response Assessment director general that benefit-cost analysts should help decide Environment's priorities.

Generally, however, the participants all still seemed to agree that at least some experts (not benefit-cost analysts) knew best about the science of deciding priorities. That is, until the projects ended.

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#### NOTES

<sup>1</sup> Second Health/Health Protection director general to first Health Protection director general, memo of April 29, 1994, "Environmental Priority Setting"; Environmental Protection/Response Assessment/Stakeholder Relations advisor to Advisory Committee on Environmental Protection, memo of April 15, 1994, "You will find..."; Environmental Protection/Response Assessment senior advisor to Response Assessment director general, memo of May 26, 1994, "ADM's Speaking Notes for ACEP Meeting and other correspondence"; Environmental Protection/Program Integration director to Major Industrial Accidents Council director, memo of May 10, 1994, "Environmental Issue Definition and Ranking, Draft 4."

<sup>2</sup> Environmental Protection/Response Assessment director general and third Canadian Petroleum Products Institute senior director, overheads for Canadian Council of Ministers of the Environment/Environmental Protection Committee meeting of May 11, 1994, "Strategic Options Process and Priority Setting Methodology."

<sup>3</sup> Environmental Protection/Response Assessment director general to Director General Steering Committee, memo of May 11, 1994, "Director General's Steering Committee Meeting"; Environmental Protection/Response Assessment senior advisor, interview, June 25, 1995; Environmental Protection/Response Assessment senior advisor, conversation, October 4, 1994; Environmental Protection/Program Integration director to Major Industrial Accidents Council director; Industry environmental analyst to Major Industrial Accidents Council director, memo of May 16, 1994, "April 27, 1994 Draft of Proposed Methodology," copied to Industry director general and Industry director; Industry environmental analyst to Environmental Protection/Response Assessment senior advisor, fax of May 27, 1994; Corporate Policy director to Major Industrial Accidents Council director, memo of May 17, 1994, "Comments on the Fourth Draft Report 'Environmental Issue Definition and Ranking,'" copied to Environmental Protection/Response Assessment director general; second Health/Health Protection manager to Environmental Protection/Response Assessment director general, memo of May 25, 1994, "Attached are our..."; Resource Futures executive director to Environmental Protection/Response Assessment senior advisor, draft letter of May 18, 1994, "I am writing..." copied to Canadian Environmental Network executive director.

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<sup>4</sup> Environmental Protection/Response Assessment senior advisor to Response Assessment director general; Environmental Protection/Response Assessment director general to Response Assessment senior advisor, memo, "I haven't had..."; Advisory Committee on Environmental Protection, draft agenda of eighth meeting of May 4-5, 1994; Environmental Protection/Response Assessment senior advisor, "ADM's Speaking Points for ACEP Meeting."

<sup>5</sup> Agriculture senior environmental analyst to Environmental Protection/Response Assessment director general, letter of June 17, 1994, "I write in..."; Fisheries director general to Environmental Protection/Response Assessment director general, letter of June 21, 1994, "This is further..."; Environmental Conservation/State of Environment Reporting director to Environmental Protection/Response Assessment senior advisor, memo of June 30, 1994, "Environmental Issue Definition and Ranking: A Proposed Methodology for Environment Canada," copied to State of Environment Reporting director general and Environmental Protection/Response Assessment director general; second Health/Health Protection director general to Environmental Protection/Response Assessment director general, letter of July 4, 1994, "Environmental Issue Definition and Ranking," copied to second Health Protection manager and first Health Protection director general; Queen's University research associate to Environment Canada Project manager, letter of July 2, 1994, "As part of..."; Environmental Protection/Response Assessment director general to post-doctoral fellow, memo, "Could you please...".

<sup>6</sup> Environmental Protection/Response Assessment/Options Evaluation Team, "Guidance Document on the Options Evaluation Process," Final Draft, July 14, 1994; Environmental Protection/Response Assessment/Options Evaluation executive, conversation, August 12, 1994.

<sup>7</sup> Environmental Protection/Response Assessment senior advisor, conversation, August 1, 1994

<sup>8</sup> Environmental Protection/Response Assessment senior advisor, conversation, August 17, 1994.

<sup>9</sup> Strategic Options Project Implementation Group, "Proposed Info Package to Issue Table Participants," August 24, 1994; Health/Environmental Health representative, memo of August 26, 1994, "Health Canada's participation in the SOP Issues Tables"; "Issue Tables - Members & Corresponding Members [1994-95]."

<sup>10</sup> Strategic Options Project Implementation Group, "Proposed Info Package to Issue Table Participants," August 25, 1994.; Strategic Options Project Implementation Group, "SOP - Status Report # 1," August 26, 1994; Strategic Options Project Implementation Group, "Proposed Info Package to Issue Table Participants," August 24, 1994; "Issue Tables - Members & Corresponding Members [1994-95]."

<sup>11</sup> Environmental Protection/Response Assessment senior advisor, conversation.

<sup>12</sup> Canadian Labour Congress national director to United Steelworkers of America, Canadian Autoworkers Union, Canadian Union of Public Employees, and Communications, Energy & Paperworkers Union of Canada, letter of September 21, 1994, "[Advisory Committee on Environmental Protection]," copied to Canadian Labour Congress secretary-treasurer and fourth Canadian Environmental Network representative; Environment Canada, Communications & Consultations Directorate, Consultations Division, Environmental Consultations Calendar, November 1993, 30.

<sup>13</sup> Environmental Protection/Response Assessment senior advisor, conversation, October 3, 1994; Petroleum Products Industry Advisory Committee, agenda of meeting of October 18, 1994.

<sup>14</sup> Environmental Protection/Response Assessment senior advisor, conversation, October 17, 1994.

<sup>15</sup> Fourth Canadian Petroleum Products Institute senior director, overheads for Environment & Energy Conference of Ontario of November 16, 1994, "Environmental Priority Setting"; third Canadian Petroleum Products Institute senior director, conversation.

<sup>16</sup> Environmental Protection/Communications, "Strategic Options Process Communications Plan," revised draft, November 14, 1994.

<sup>17</sup> Environmental Protection/Response Assessment director general to Response Assessment/Economic Analysis, memo of March 6, 1995, "Environmental Protection Service Standing

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Committees"; Environmental Protection/Response Assessment senior advisor, interview, June 25, 1995; Strategic Options Project Implementation Group, "Proposed Info Package to Issue Table Participants," August 25, 1994.

<sup>18</sup> Environmental Protection/Response Assessment senior advisor, conversation, March 24, 1994.

## CONCLUSION

### CHAPTER 10

#### THE LIMITS OF SCIENCE IN DETERMINING ENVIRONMENTAL PRIORITIES

In this chapter, I summarise and finally discuss the answers to my three major research questions: What influence, if any, did government experts (that is, natural, social, and applied scientists) have in establishing the Environment Canada and other projects as priorities for Environment and other federal departments? Why did they have that influence? Did their influence make a significant difference to determining "good" environmental priorities? I extend the findings from my key case, the Environment Canada Project, by combining them with those from my secondary cases. I discuss the theoretical relevance of my overall findings, and end the chapter by discussing the practical relevance.

#### What Influence Did Government Experts Have, and Why Did They Have It?

As discussed in chapters 2 through 9 and shown in Table 10.1, in some of the processes of determining the projects as priorities, some government experts had an influence, while others did not. In the other processes, there were no government experts who had any influence. This general pattern is also shown by the more relevant studies in the major literature on the role of government experts in establishing environmental priorities. Of the broader studies in policy making and expertise discussed in Chapter 1, Arnold Meltsner observes in his study on policy analysts in Washington, DC that it is often other people who determine the study agenda of a bureaucratic analyst. My study shows a further general pattern, that is, the degree of influence that government experts had depended on their type of expertise, whether or not they were asked for advice, who asked them for it, whether or not they offered it, and who they offered it to.

My study also shows a more detailed pattern in the processes within the Environment Canada Project, that is, when government experts offered advice and had a major influence, they were economists. Economists who offered advice also had a minor influence or none. When economists had a major influence, it was typically because they were asked for advice by government decision-makers and offered it to

them. Natural scientists who offered advice did not have a major influence. When they had a minor influence or none, it was because they were not asked for advice by government decision-makers, even if they offered it to them. Government experts who did not offer advice seemed to have no influence. Further, they did not offer advice unless they were asked for it, and they were not asked for it when the decision-makers were Environment senior managers. These observations about government experts and managers playing a range of roles are what one might expect given Meltsner's findings that both analysts and clients are given the discretion and leeway to do so in a bureaucracy.

But why were certain government experts asked or not asked for advice, and why did they offer or not offer it? My study does not show a pattern of answers across the processes. Further, the more relevant studies do not really answer these questions, as discussed in Chapter 1. Of the broader studies, Carol Weiss' work on the use of social science research by government decision-makers offers some possible explanations that are consistent with my observations. Specifically, in my study, in those processes where government experts had a major influence, perhaps the experts gave scientifically sound advice, it fit the decision-makers' expectations, was practical, or it challenged the status quo.

In those processes where government experts had a minor influence or none, however, perhaps the experts' advice was inappropriate, was not ready on time, was not clear or definitive, did not reach the right people, or it was overridden by combinations of various competing interests. Or perhaps the decision-makers did not understand or trust the advice, or the experts as scientists were reluctant to give it.

The processes within the other projects (my secondary cases) do not contradict any of my findings. Overall, these findings are a significant contribution to the literature, not only because they show the influence that government experts had in determining environmental priorities, but also because they show more generally how priorities were really decided. These findings may be limited to cases that are similar to the Environment Canada Project, which was basically a *formal* process of determining *one* environmental problem as a priority. Further, the purpose of the Project was to develop and use a *science-based* process for determining *many* environmental problems as priorities. Finally, the purpose of the science-based process was to *change* (increase) the influence that government experts had in deciding them. But it is precisely for these reasons that I can even begin to answer the most important question in my study: Did

the influence of government experts make a significant difference to establishing "good" environmental priorities?

### Did Their Influence Make a Significant Difference?

Some government experts advised that the Environment Canada Project should continue to be re-established as a priority. Yet ultimately, it was not and the science-based process was neither developed nor used. Government and non-government experts were not asked for advice by anyone and did not offer it. Of course, no one can know for certain whether their lack of influence made a significant difference, that is, whether or not they knew best about the science of deciding priorities. But in my view, their lack of a major influence did make a significant difference because they did not and could not make the limits of science in deciding them explicit or widely known.

During the Project, government and non-government experts (and others) identified some of the limits and tried to incorporate them into the Environment Canada process by separating questions related to science from those related to administration and policy. For example, as shown by the description of the process in Appendix 1, they did not include ability to manage, Environment's ownership and role, social equity, or public concern in the formula for calculating health, ecological, and socio-economic factor scores.

There were two ways in which other limits of science in deciding priorities were revealed to me during the Environment Canada and other projects. The first was through the arguments that government and non-government participants had about the experts who should be involved in determining priorities, including the resolution of those arguments. For example, as shown in Table 10.2, government experts and managers argued about involving benefit-cost analysts; a manager finally resolved the argument. And managers (not experts) argued about involving other federal department experts; they finally resolved the argument.

The second way the limits were revealed was through the arguments that experts had with other participants about how priorities should be established in general, including the resolution of those arguments. In particular, they argued about whether the Environment Canada and other projects themselves should be priorities, who besides experts should be involved in deciding priorities more generally, the scope of the processes for determining them, and the processes themselves.



In both ways, some of the arguments that seemed to be resolved were raised again. Further, the resolution of some of the arguments was contrary to the experts' recommendations. Moreover, some of the experts' recommendations conflicted with those of other experts, who along with other participants sometimes resolved the arguments.

Further potential limits of science were revealed by the questions that experts did not answer even though the participants all seemed to agree that they should answer them, at least until the end of the Environment Canada Project. For example, experts did not answer how to address temporal scale and whether to add a socio-cultural factor (see discussion of Draft 4 of the Environment Canada Project report in Chapter 8). Both of these questions were asked as early as Draft 1.

So who should resolve these arguments? Government experts and managers with expertise were all involved. Who should answer these questions, if not experts? And more importantly, who should decide? Perhaps the government experts could have answered the questions if their recommendations for developing the process had been followed. That is, some recommended (with other participants) that it be developed by experts, both government and non-government, from a wide range of disciplines and organizations. This recommendation was consistent with Arie Rip in his study on expertise where he defines what an expert is.

Indeed, the resolution of the most significant argument was when some government experts (with other participants) recommended that the Environment Canada Project should continue to be re-established, that is, that more resources - including Environment and other federal department experts - should be allocated. Then, however, Environment and other federal department managers decided the Project should not continue. Ironically, the process that was to change how priorities are determined, that is, how resources are allocated, was not developed (let alone used) because the resources to develop it were not allocated. My study precisely illustrates the inherent complexities of decision-making involving science, policy, *and* administration. Sheila Jasanoff makes a similar observation in her studies on risk management and on advisory committees, but primarily in the United States.

But why did the experts not advise that the Environment Canada Project should again be established? Why did some experts stop participating even earlier? And why did other experts not participate at all? Perhaps the reasons are related to administration and policy: When experts offer advice, they do not have a major

influence unless they are asked by decision-makers, as discussed above. I believe this is why the Environment Canada Project disappeared. As Jasanoff concludes in her study on risk management, science can be overshadowed in the assessment of uncertainty due to political process and institutional design.

Or perhaps the reasons are more fundamentally related to the limits of science: It is impossible for experts to answer the questions discussed above scientifically. Is it then possible to develop a science-based process? In his study on uncertainty, Brian Wynne argues that the preventive approach exposes ignorance and in particular indeterminacy in scientific knowledge, and that for environmental decisions, there is no objective level of uncertainty.

As a society, we need to know the answer to this question and, in my view, it is experts who should answer it. In other words, experts might know better than others about the science of deciding priorities, and in particular government experts, because of their ideal dual role as experts and public servants. As Jasanoff argues in her study on advisory committees, the advisory process is important for negotiating scientific differences that have political weight.

Experts should try to finish developing the Environment Canada process with others, as they recommended, and make their results widely known about the limits of science in deciding priorities. It may be that science can have very little to do with determining them because this process, science-based or not, mostly involves administration and policy. At least, we will understand the limits of science in this type of communication. The general public could then make an informed decision about who should determine priorities: government, experts, or society.

TABLE 1.1

FACTORS DETERMINING ENVIRONMENTAL PRIORITIES

This table lists the factors that can influence and control environmental priorities according to key studies in the literature.

<p>"Setting Environmental Management Priorities: Rethinking Risk Analysis," by Chociolko and Smith</p> <ul style="list-style-type: none"> <li>• typically expert opinion, not public consultation; jurisdictional and budgetary constraints, not science<sup>a</sup></li> </ul>
<p>"The Nature of Environmental Priorities: Insights from the Experiences of a Number of Selected Jurisdictions," by Christie</p> <ul style="list-style-type: none"> <li>• largely mandates and foci of organization</li> <li>• also economic, social and political forces; educational levels of the public; development of knowledge, technologies and professions; international protocols and agreements; cultural attitudes and ideals<sup>b</sup></li> </ul>
<p>"The Politics of Risk: The Identification of Toxic and Other Hazardous Substances in Canada," by Doern</p> <ul style="list-style-type: none"> <li>• department agenda: broader political environment, each department's "clientele"</li> <li>• government agenda: conflict between and within the general and department agendas<sup>c</sup></li> </ul>
<p><i>The Greening of Canada: Federal Institutions and Decisions</i>, by Doern and Conway</p> <ul style="list-style-type: none"> <li>• not public opinion; special interests pivotal; science and scientists, federal-provincial cooperation, "international paradigm-setting activities" (e.g., Brundtland Commission), Environment's internal planning exercises; ministers</li> <li>• more political and economic than scientific "but there is little doubt that science must ring the first credible alarm bells"<sup>d</sup></li> </ul>
<p>"Charting uncertainty in science-policy discourses: the construction of the chlorinated drinking-water issue and cancer," by Driedger and Eyles</p> <ul style="list-style-type: none"> <li>• suggest primarily government-science in policy, rather than policy makers (elected officials); argue primarily cancer that drives the science-policy agenda<sup>e</sup></li> </ul>
<p>"Constructing Scientific Authorities: Issue Framing of Chlorinated Disinfection Byproducts in Public Health," by Driedger, Eyles, Elliott, and Cole</p> <ul style="list-style-type: none"> <li>• sufficient scientific evidence<sup>f</sup></li> </ul>
<p>"Comparing Environmental Risks: A Consultative Approach to Setting Priorities at the Community Level," by Guidotti</p> <ul style="list-style-type: none"> <li>• a legislated mandate, recent responses to visible issues involving chemical hazards, inquiries by politicians on behalf of their constituencies, legal challenges, anticipation of issues requiring a Canadian knowledge base for resolution in the near future, typically not public input or discussion<sup>g</sup></li> </ul>
<p>"Managing Environmental Research in a Government Agency: Priorities in Chemical Hazards," by Guidotti</p> <ul style="list-style-type: none"> <li>• "historical interests of the agency, emerging areas of science, constituency interests, response to inquiries from Parliament, legislative mandate"<sup>h</sup></li> </ul>
<p>"Too Close to Home: Dioxin Contamination of Breast Milk and the Political Agenda," by Harrison</p> <ul style="list-style-type: none"> <li>• factors in "non-agenda setting": not severity of problem, absence of focusing event, or institutional factors alone, but political opponents of environmentalists and especially their self-restraint<sup>i</sup></li> </ul>
<p>"Setting the Environmental Agenda in Canada and the United States: the Cases of Dioxin and Radon," by Harrison and Hoberg</p> <ul style="list-style-type: none"> <li>• scientific and technological change, US regulatory agenda, and especially "policy entrepreneurs"<sup>j</sup></li> </ul>
<p>"Agenda-Setting: The Role of the Public in Resource and Environmental Policy Formation," by Hessing and Howlett</p> <ul style="list-style-type: none"> <li>• sometimes non-government groups, sometimes government, usually "productive and state interests"<sup>k</sup></li> </ul>
<p>"Application of Economic Analysis to the Development of Priorities for Environment Canada," by Hickling Corp.</p> <ul style="list-style-type: none"> <li>• problem is readily apparent<sup>l</sup></li> </ul>

"It's Not Easy Being Green: The Politics of Canada's Green Plan," by Hoberg and Harrison

- electoral incentives of Conservative government, budgetary incentives of Environment bureaucrats, institutional constraints of cabinet government and federalism, and "a particular social construction of the idea of sustainable development"<sup>m</sup>

"Issue-Attention and Punctuated Equilibria Models Reconsidered: An Empirical Examination of the Dynamics of Agenda-Setting in Canada," by Howlett

- government agenda drives the public, and public agenda drives the government
- suggests "due to institutional structure of parliamentary regimes which deliver extensive agenda-setting powers to governments by, among other things, curtailing public and media access to information"<sup>n</sup>

"Predictable and Unpredictable Policy Windows: Institutional and Exogenous Correlates of Canadian Federal Agenda-Setting," by Howlett

- related issues on agenda, institutionalized procedures (during run-up and immediate post-election period); not random events, crises, or behaviour of individual political actors<sup>o</sup>

"The Development of a Methodological Framework for Establishing Priorities for Environmental Protection," by Institute for Risk Research

- typically natural scientists and public opinion; not engineering, public interest, contribution of technology, economic and health effects<sup>p</sup>

"Testing Alternative Theories of Agenda Setting: Forest Policy Change in British Columbia, Canada," by Kamieniecki

- issue definition, identity and characteristics of political actors, belief systems and policy learning, causal ideas, scientific knowledge, "but largely... the ability of contending political actors and groups to transform values into science-based arguments"<sup>q</sup>

"Environmental Priority Setting Based on Comparative Risk and Public Input," by Moffet

- non-governmental organizations, industry, government officials, especially political and business decision-makers<sup>r</sup>

"Issue Attributes and Agenda-setting by Media, the Public, and Policymakers in Canada," by Soroka

- media, public, and policymakers<sup>s</sup>

"The Green Plan: From Great Expectations to Eco-Backtracking ... to Revitalization?," by Toner

- ideas, partisanship and political will, bureaucratic politics (e.g., industry departments and central agencies)<sup>t</sup>

"Setting Environmental Priorities for Canada: Issues and Strategies - A Preliminary Discussion," by Willes, Orr, Munro, Nestmann, and Davies

available scientific knowledge, public perception, economics, political realities, international initiatives<sup>u</sup>

Sources:

<sup>a</sup> Christina Chociolko and W.G.B. Smith, "Setting Environmental Management Priorities: Rethinking Risk Analysis," in *Risk Analysis and Management in a Global Economy: Proceedings of the Society for Risk Analysis (Europe) Annual Conference Held in Stuttgart, Germany, May 21-25, 1995*, ed. Ortwin Renn (Stuttgart: Centre for Technology Assessment, 1997), 75.

Based in part on my preliminary analysis.

<sup>b</sup> Joel Christie, *The Nature of Environmental Priorities: Insights from the Experiences of a Number of Selected Jurisdictions*, working document 3 (Edmonton: Environment Council of Alberta, Future Environmental Directions for Alberta, September 1993), 1.

<sup>c</sup> G. Bruce Doern, *The Politics of Risk: The Identification of Toxic and Other Hazardous Substances in Canada* (Toronto: The Royal Commission on Matters of Health and Safety Arising from the Use of Asbestos in Ontario, January 1982), 1.4-1.5.

<sup>d</sup> G. Bruce Doern and Thomas Conway, *The Greening of Canada: Federal Institutions and Decisions* (Toronto: University of Toronto Press, 1994), 231-33, 149.

- <sup>e</sup> S. Michelle Driedger and John Eyles, "Charting Uncertainty in Science-Policy Discourses: The Construction of the Chlorinated Drinking-Water Issue and Cancer," *Environment and Planning C: Government and Policy* 21 (2003): 429, 439.
- <sup>f</sup> S. Michelle Driedger, John Eyles, Susan D. Elliott, and Donald C. Cole, "Constructing Scientific Authorities: Issue Framing of Chlorinated Disinfection Byproducts in Public Health," *Risk Analysis* 22, 4 (2002): 789.
- <sup>g</sup> Tee L. Guidotti, "Comparing Environmental Risks: A Consultative Approach to Setting Priorities at the Community Level," *Public Health Reviews* 22, 3-4 (1994): 322-23.
- <sup>h</sup> Tee L. Guidotti, "Managing Environmental Research in a Government Agency: Priorities in Chemical Hazards," *Environmental Research* 68, 2 (1995): 134.
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- <sup>j</sup> Kathryn Harrison and George Hoberg, "Setting the Environmental Agenda in Canada and the United States: the Cases of Dioxin and Radon," *Canadian Journal of Political Science* 24, 1 (1991): 5.
- <sup>k</sup> Melody Hessing and Michael Howlett, "Agenda-Setting: The Role of the Public in Resource and Environmental Policy Formation," in *Canadian Natural Resource and Environmental Policy: Political Economy and Public Policy* (Vancouver: UBC Press, 1997), 130-32.
- <sup>l</sup> Hickling Corporation, "Application of Economic Analysis to the Development of Priorities for Environment Canada," final report submitted to the Environment Canada, Corporate Policy Group, Policy Directorate, April 19, 1993, 1.
- <sup>m</sup> George Hoberg and Kathryn Harrison, "It's Not Easy Being Green: The Politics of Canada's Green Plan," *Canadian Public Policy* 20, 2 (1994): 1.
- <sup>n</sup> Michael Howlett, "Issue-Attention and Punctuated Equilibria Models Reconsidered: An Empirical Examination of the Dynamics of Agenda-Setting in Canada," *Canadian Journal of Political Science* 30, 1 (1997): 30.
- <sup>o</sup> Michael Howlett, "Predictable and Unpredictable Policy Windows: Institutional and Exogenous Correlates of Canadian Federal Agenda-Setting," *Canadian Journal of Political Science* 31, 3 (1998): 500, 515.
- <sup>p</sup> Institute for Risk Research, "The Development of a Methodological Framework for Establishing Priorities for Environmental Protection," draft proposal submitted to the Advisory Committee on Environmental Protection, Institute for Risk Research, Waterloo, Ontario, November 6, 1992, 2.
- <sup>q</sup> Sheldon Kamieniecki, "Testing Alternative Theories of Agenda Setting: Forest Policy Change in British Columbia, Canada," *Policy Studies Journal* 28, 1 (2000): 176, 187.
- <sup>r</sup> John Moffet, "Environmental Priority Setting Based on Comparative Risk and Public Input," *Canadian Public Administration* 39, 3 (Fall 1996): 376.
- <sup>s</sup> Stuart N. Soroka, "Issue Attributes and Agenda-setting by Media, the Public, and Policymakers in Canada," *International Journal of Public Opinion Research* 14, 3 (Summer 2002): 279, 268.
- <sup>t</sup> Glen Toner, "The Green Plan: From Great Expectations to Eco-Backtracking ... to Revitalization?," in *How Ottawa Spends 1994-95: Making Change - Ideas and Innovation*, ed. Susan D. Phillips (Ottawa: Carleton University Press, 1994): 257.
- <sup>u</sup> R. Willes, J. Orr, I. Munro, E. Nestmann and D. Davies, "Setting Environmental Priorities for Canada: Issues and Strategies - A Preliminary Discussion," CanTox Inc., Mississauga, Ontario, February 1993, 1.

TABLE 1.2

TACTICS USED TO INCREASE STUDY QUALITY

This table lists the tactics that I used to increase the validity and reliability of my study according to the phases of my research.

RESEARCH PHASE	TACTIC	PURPOSE
Research Design	<ul style="list-style-type: none"> <li>• replication logic</li> </ul> <p>"select each case so that it either... predicts similar results... or... produces contrary results but for predictable reasons"</p>	<ul style="list-style-type: none"> <li>• reliability</li> </ul> <p>"demonstrating that the operations of a study - such as the data collection procedures - can be repeated, with the same results"</p>
Data Collection	<ul style="list-style-type: none"> <li>• multiple sources of evidence</li> </ul> <p>"evidence from two or more sources, but converging on the same set of facts or findings"</p> <ul style="list-style-type: none"> <li>• case study protocol</li> </ul> <p>a plan "to guide the investigator in carrying out the case study" that "contains the instrument" and "the procedures and general rules that should be followed in using the instrument"</p> <ul style="list-style-type: none"> <li>• chain of evidence</li> </ul> <p>"explicit links between the questions asked, the data collected, and the conclusions drawn"</p> <ul style="list-style-type: none"> <li>• case study data base</li> </ul> <p>"a formal assembly of evidence distinct from the final case study report"</p>	<ul style="list-style-type: none"> <li>• external validity</li> </ul> <p>"establishing the domain to which a study's findings can be generalized"</p> <ul style="list-style-type: none"> <li>• reliability</li> </ul> <ul style="list-style-type: none"> <li>• construct validity</li> </ul> <p>"establishing current operational measures for the concepts being studied"</p> <ul style="list-style-type: none"> <li>• reliability</li> </ul>
Data Analysis	<ul style="list-style-type: none"> <li>• pattern matching</li> </ul> <p>"compare an empirically based pattern with a predicted one (or with several alternative predictions)"</p>	<ul style="list-style-type: none"> <li>• internal validity</li> </ul> <p>"establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships"</p>
Composition	<ul style="list-style-type: none"> <li>• key informants review draft case study report</li> </ul>	<ul style="list-style-type: none"> <li>• construct validity</li> </ul>

Source: Robert K. Yin, *Case Study Research: Design and Methods*, rev. ed., Applied Social Research Methods, vol. 5 (Newbury Park: Sage Publications, 1989), 40-41, 53, 70, 84-85, 109, 113.

TABLE 1.3

## GREEN PLAN SUMMARY

National Environmental Goals - Government-Wide	Related Initiatives - Environment Canada
<ul style="list-style-type: none"> <li>• Life's Three Essentials - Clean Air, Water and Land</li> </ul>	<ul style="list-style-type: none"> <li>• Fraser River and Burrard Inlet Action Plan</li> <li>• Atlantic Coastal Action Program</li> <li>• Great Lakes/St. Lawrence Pollution Prevention</li> <li>• Control of Ocean Dumping</li> <li>• Waste Management</li> <li>• Toxic Substances Management</li> <li>• Smog Reduction and Control</li> </ul>
<ul style="list-style-type: none"> <li>• Sustaining Our Renewable Resources</li> <li>• Protecting Our Special Spaces and Species</li> </ul>	<ul style="list-style-type: none"> <li>• Protecting Canada's Heritage</li> <li>• Completing the Parks Systems</li> <li>• Commemorating Canada's Historical Heritage</li> <li>• National Wildlife Strategy</li> <li>• Arctic Environmental Strategy</li> </ul>
<ul style="list-style-type: none"> <li>• Canada's Unique Stewardship: The Arctic</li> <li>• Global Environmental Security</li> </ul>	<ul style="list-style-type: none"> <li>• Climate Change - Understanding</li> <li>• Climate Change - Convention</li> <li>• Ozone Depletion</li> <li>• Acid Rain</li> <li>• Global Warming - Assessing Progress, Consulting with Canadians</li> </ul>
<ul style="list-style-type: none"> <li>• Environmental Responsible Decision-Making</li> </ul>	<ul style="list-style-type: none"> <li>• Building International Partnerships</li> <li>• Canadian Environment Week</li> <li>• International Partnership for Youth</li> <li>• National Round Table</li> <li>• Environmental Partners Fund</li> <li>• State of the Environment Reporting</li> <li>• Montreal Biosphere</li> <li>• Canadian Environmental Citizenship Program</li> <li>• Canadian Global Change Program</li> <li>• Training Canada's Future Environmental Scientists</li> <li>• Federal Science Leadership</li> <li>• Technology for Environmental Solutions</li> <li>• Environmental Innovation</li> <li>• Enforcement and Training</li> </ul>
<ul style="list-style-type: none"> <li>• Starting in Our Own House (Federal Environmental Stewardship)</li> </ul>	<ul style="list-style-type: none"> <li>• Environmental Assessment and Review Process and Participant Funding</li> </ul>
<ul style="list-style-type: none"> <li>• Emergency Preparedness</li> </ul>	<ul style="list-style-type: none"> <li>• Federal Environmental Stewardship</li> <li>• Marine Spills</li> <li>• Spill Response</li> <li>• Spill Prevention and Mitigation</li> <li>• Spill Preparedness</li> <li>• Spill Research and Technology</li> <li>• Prediction and Warning</li> <li>• Gulf Clean-up</li> </ul>

Source: Canada, 1992-93 Estimates, Part III: Environment Canada (Ottawa: Supply & Services Canada, 1992), 2-6 - 2-8.

TABLE 1.4

CHRONOLOGY

This table lists key events related to the processes of determining the Environment Canada and other projects as priorities for Environment and others over time.

APPROVAL OF THE ENVIRONMENT CANADA PROJECT	
<b>1992</b>	
Aug	Imperial Oil senior manager drafts proposal for Imperial Oil Project. Green Plan underway. Regulatory Reform Strategy underway.
Sept	Imperial Oil senior manager advises Advisory Committee on Environmental Protection to establish Imperial Oil Project. Committee and federal governmental official question whether it should be.
Oct	Hickling advise Policy Advisory Committee to establish two Hickling projects.  Corporate Policy assistant deputy minister advises Environment deputy minister (and Conservation & Protection assistant deputy minister) to establish Environment Canada Project. Argues against Imperial Oil Project because Advisory Committee on Environmental Protection should not decide Environment's priorities (vs Environment). Deputy minister argues the same.  Canadian Petroleum Products Institute draft Canadian Petroleum Products Institute process. Advise Petroleum Products Industry Task Force to establish Canadian Petroleum Products Institute Project.  Memorandum of Understanding Steering Committee set up Interdepartmental Committee to advise whether Imperial Oil Project should be established. Interdepartmental Committee contract CanTox to review other processes.
Nov	Deputy minister asks Conservation & Protection assistant deputy minister to decide whether Environment Canada Project should be established.  Conservation & Protection/Ecosystem Sciences/Strategic Planning chief advises Ecosystem Sciences director general that Imperial Oil Project should not be established, and to advise Conservation & Protection and Corporate Policy the same.  Conservation & Protection assistant deputy minister establishes Environment Canada Project for Environment.
FORMULATION OF THE ENVIRONMENT CANADA PROJECT PLAN	
	Conservation & Protection/Ecosystem Sciences/Conservation/Environmental Economics head argues Environment Canada process should determine more than regulatory priorities.  Petroleum Products Industry Task Force set up Risk Assessment & Work Prioritization Working Group to advise whether Canadian Petroleum Products Institute Project should be established.  Conservation & Protection set up Priority Setting-Risk Assessment Committee to draft Environment Canada Project plan, and advise whether Environment should establish Canadian Petroleum Products Institute and Imperial Oil projects.  Conservation & Protection assistant deputy minister updates Environment deputy minister on his decision to establish Environment Canada Project.  CanTox finish review of other processes.  CanTox advise Interdepartmental Committee that Interdepartmental Committee Project should be established.



Interdepartmental and Priority Setting-Risk Assessment committees argue more than two years should be allocated to determine national pollution priorities, and neither industry nor advisory group should decide Canadian environmental priorities (vs federal government).

Interdepartmental Committee advise Memorandum of Understanding Steering Committee to establish Interdepartmental Committee Project, but not Imperial Oil Project. Argue benefit-cost analysts should not help decide Canadian environmental priorities (vs other experts).

Environment Canada Project coordinator advises Interdepartmental Committee (= Environment Canada) Project should be re-established, but Imperial Oil and Canadian Petroleum Products Institute projects should not be.

Ecosystem Sciences director general advises Conservation & Protection assistant deputy minister to re-establish Environment Canada (= establish Interdepartmental Committee) Project. Argues against establishing Canadian Petroleum Products Institute and Imperial Oil projects because Canadian Petroleum Products Institute and Advisory Committee on Environmental Protection should not decide Environment's priorities (vs Environment).

Deputy minister re-establishes Environment Canada Project for Environment.

Conservation draft Environment Canada Project plan. Recommend Environment Canada process should determine more than regulatory priorities, and Advisory Committee on Environmental Protection and Canadian Petroleum Products Institute should help decide Environment's priorities in the process.

Dec Conservation advise Ecosystem Sciences management board to re-establish Environment Canada Project.

Risk Assessment & Work Prioritization Working Group draft Canadian Petroleum Products Institute Project plan.  
Advise Petroleum Products Industry Task Force to establish Project.

Conservation & Protection assistant deputy minister asks Conservation & Protection/Environmental Protection and Ecosystem Sciences director generals to advise whether Environment Canada Project should be re-established (= establish Interdepartmental Committee Project); Imperial Oil, Canadian Petroleum Products Institute, and Hickling projects not established; and Priority Substances List 2 Project ended.  
Priority Substances List 2 Project underway.

Environment Canada Regulatory Review Project underway.  
Conservation & Protection assistant deputy minister establishes Conservation & Protection Fiscal Restraint Project for Environment.

Environment Canada Project manager advises Ecosystem Sciences director general to advise other Environment director generals to re-establish Environment Canada Project and other federal department director generals to establish; and for them to advise Environment whether should be re-established (use Environment Canada process). Director general advises them.

Petroleum Products Industry Task Force establish Canadian Petroleum Products Institute Project for Environment, other federal departments, Canadian Petroleum Products Institute, and two environmental groups. Set up Environmental Priorities Working Group to develop Canadian Petroleum Products Institute process, and advise whether Project should be re-established (use process).

Corporate Policy assistant deputy minister does not establish Hickling projects, but does establish Corporate Policy Project for Environment. Corporate Policy contract Hickling to develop Hickling process.

Ecosystem Sciences advise Environmental Protection director general, Corporate Policy director general, and Conservation & Protection/Policy director to re-establish Environment Canada Project, and advise other federal departments to establish. Director generals and director argue other federal departments should not help decide Environment's priorities, while Ecosystem

Sciences argue they should. Ecosystem Sciences director general, Environmental Protection director general, Corporate Policy director general, and director decide Conservation & Protection assistant deputy minister should determine this.

Industry assistant deputy minister advises Conservation & Protection assistant deputy minister to establish Interdepartmental Committee Project.

Ecosystem Sciences, Environmental Protection, and Policy finish draft Environment Canada Project plan.

Environment Canada Project manager, Environmental Protection/Regulatory Affairs director, Environmental Protection/Industrial Programs chief, and Policy director advise Ecosystem Sciences, Environmental Protection, and Policy director generals to argue to Conservation & Protection assistant deputy minister to re-establish Environment Canada Project, end Canadian Petroleum Products Institute Project, and not establish Imperial Oil Project because one (Environment) process (vs three) should determine Environment's priorities. Question whether Corporate Policy Project should be re-established.

Director generals argue the same to assistant deputy minister, and question the same. Assistant deputy minister re-establishes Environment Canada Project for Environment (develop Environment Canada process).

#### IMPLEMENTATION OF THE ENVIRONMENT CANADA PROJECT PLAN

1993  
Jan

Environment Canada Project manager advises Conservation & Protection/Policy director general, Conservation & Protection/Environmental Protection/Industrial Programs director, Environmental Protection/Regulatory Affairs director, and Corporate Policy director general to re-establish Environment Canada Project; and Health/Health Protection director general to establish.

Policy, Industrial Programs, Regulatory Affairs, Health Protection, and Industry join Core Director Working Group. Argue Environment Canada process should determine more than pollution priorities. Environment Canada Project manager recommends should not.

Petroleum Products Industry Task Force update Environment and other federal department (Health, Industry, Energy, Transport, Finance) deputy ministers on Canadian Petroleum Products Institute Project.

Corporate Policy join Core Director Working Group.

Accelerated Reduction/Elimination of Toxics Project underway.

Policy and Corporate Policy directors argue Policy Advisory Committee should determine now whether other federal departments should help decide Environment's priorities. Decide Committee should determine this later.

Conservation & Protection and Health Protection contract CanTox to help develop Environment Canada process.

Core Director Working Group advise Conservation & Protection assistant deputy minister to re-establish Environment Canada Project, and to advise Industry assistant deputy minister to establish.

He advises him (and Health Protection assistant deputy minister). Memorandum of Understanding Steering Committee do not establish Imperial Oil or Interdepartmental Committee projects. Decide neither industry, advisory group, nor benefit-cost analysts would decide Environment's priorities in the Interdepartmental Committee process.

Conservation & Protection advise Environmental Priorities Working Group that Environment Canada Project should be established (and Canadian Petroleum Products Institute Project ended). Group do not advise Petroleum Products Industry Task Force to end Canadian Petroleum Products Institute Project.

Canadian Petroleum Products Institute do not join Director General Steering Committee. Environment Canada Project manager and coordinator join Group.

Feb Core Director Working Group advises Conservation & Protection assistant deputy minister to advise other Environment (Atmospheric Environment, Parks, Corporate Policy) assistant deputy ministers to re-establish Environment Canada Project, and other federal department (Transport, Health/Health Protection, Industry, Energy, Finance) assistant deputy ministers to establish. He advises them. Sets up Director General Steering Committee to advise whether Environment should re-establish (use Environment Canada process).

Conservation & Protection advise Advisory Committee on Environmental Protection to establish Environment Canada Project.  
Advisory Committee do not join Director General Steering Committee.

Mar Environment Canada Project coordinator advises Core Director Working Group to advise more federal department (Agriculture, Fisheries, Forestry) assistant deputy ministers to establish Environment Canada Project.

Other Environment assistant deputy ministers re-establish Environment Canada Project for Environment, and other federal department assistant deputy ministers establish for other federal departments. Other Environment and other federal department director generals join Director General Steering Committee.

Environment Canada Project manager (and coordinator) advises Conservation & Protection assistant deputy minister to re-establish Environment Canada Project.

Apr Environment Canada Project coordinator questions whether Canadian Petroleum Products Institute Project should be re-established. Advises that government should establish Environment Canada-Canadian Petroleum Products Institute Project.

Environment Canada Project manager argues to Corporate Policy director that Corporate Policy Project should be ended because neither quantitative risk assessors nor benefit-cost analysts should help decide Environment's priorities (vs qualitative risk assessors and other economists). Advises director that Environment Canada Project should be re-established.

Environment Canada Project coordinator advises Core Director Working Group to advise Fisheries and Agriculture to establish Environmental Canada Project.  
Group finish draft detailed Project plan.

Hickling finish Hickling report.  
Hickling project manager advises Corporate Policy director general to re-establish Corporate Policy Project (use Hickling process).

Core Director Working Group advise Conservation & Protection assistant deputy minister to advise Fisheries and Agriculture assistant deputy ministers to establish Environment Canada Project. He advises Fisheries assistant deputy minister.

Core Director Working Group advise other Environment (Conservation & Protection, Corporate Policy, Atmospheric Environment, Parks), other federal department (Industry, Energy), and International Joint Commission directors to make Environment Canada Project a priority.

Environment Canada Project manager advises Ecosystem Sciences director general to advise Director General Steering Committee to re-establish Environmental Canada Project.

Environment Canada Project coordinator questions whether Environment should re-establish Canadian Petroleum Products Institute Project.  
Environment Canada Project manager argues (to Energy senior economist) public should help decide petroleum products industry environmental priorities (vs experts alone).

May Conservation & Protection advise Policy Advisory Committee to re-establish Environment Canada Project. Committee re-establish for Environment.

Environment Canada Project manager advises Health Protection director to make Environment Canada Project a priority.

Conservation & Protection/Wildlife director argues Environment Canada process should determine more than pollution priorities.

Conservation & Protection Fabric Project underway.

Environmental Priorities Working Group finish Canadian Petroleum Products Institute Project report (Draft 1). Recommend public should help decide petroleum products industry pollution priorities in the Canadian Petroleum Products Institute process.

Conservation & Protection/Management Accountability draft Conservation & Protection Fiscal Restraint process.

Environment Canada Project coordinator advises Conservation & Protection Fiscal Restraint Project should be ended, and Environment Canada Project should be re-established as long term priorities.

Ecosystem Sciences director general advises Director General Steering Committee to re-establish Environment Canada Project.

Conservation & Protection assistant deputy minister advises Agriculture assistant deputy minister to establish Environment Canada Project.

Fisheries assistant deputy minister establishes Environment Canada Project for Fisheries. Fisheries director general joins Director General Steering Committee.

Environment Canada Project manager advises Environment (Conservation & Protection, Corporate Policy, Atmospheric Environment, Parks), other federal department (Industry, Energy, Health Protection), and International Joint Commission staff to make Environment Canada Project a priority.

Corporate Policy and Environmental Protection director generals join Director General Steering Committee.

June Environmental Protection director general advises Ecosystem Sciences director general to establish Environment Canada-Canadian Petroleum Products Institute Project.

Corporate Policy director general advises Environment to re-establish Corporate Policy Project (use Hickling process).

Conservation & Protection assistant deputy minister establishes June Budget Project for Environment.

Environmental Protection director general advises Policy director general to end June Budget Project as long term priority.

Election project underway.

Environment, other federal department (Industry), and International Joint Commission staff join Project Team. Conservation ask Team to advise whether Environment Canada Project should be re-established. Team advise that Environment and other federal department assistant deputy ministers should re-establish.

Environmental Priorities Working Group finish Canadian Petroleum Products Institute Project report (Final Draft).

Environmental Priorities Working Group advise Petroleum Products Industry Task Force to re-establish Canadian Petroleum Products Institute Project (test Canadian Petroleum Products Institute process).

Task Force finish Petroleum Products Industry Task Force report (Draft 1).

Agriculture assistant deputy minister establishes Environment Canada Project for Agriculture. Agriculture director general joins Director General Steering Committee.

Health Protection director general re-establishes Environment Canada Project for Health. Health

Protection biostatistician joins Project Team.

Conservation advise Director General Steering Committee to re-establish Environment Canada Project.

Committee advise Environment to advise Forestry to establish Environment Canada Project.

Some Committee members question whether Corporate Policy Project should be re-established, and Environment Canada-Corporate Policy Project established. Committee question if Corporate Policy and Canadian Petroleum Products Institute projects should be re-established now. Decide Environment Canada process should determine more than pollution priorities, advise Environment should re-establish Corporate Policy Project, and recommend quantitative risk assessment and benefit-cost analysts should help decide Environment's priorities in Hickling process. Re-establish Environment Canada Project for Environment and other federal departments (develop Environment Canada process). Ecosystem Sciences director general advises some Environment (Science Advisor) and other federal department (Transport, Finance, Fisheries) director generals to re-establish.

Industrial Programs chief advises Industrial Programs director to advise Conservation & Protection assistant deputy minister to re-establish Canadian Petroleum Products Institute Project.

Environment Canada Project manager advises director and chief to advise assistant deputy minister not to re-establish now.

Petroleum Products Industry Task Force advise Canadian Petroleum Products Institute/Board of Directors to re-establish Canadian Petroleum Products Institute Project (test Canadian Petroleum Products Institute process).

Many Project Team members argue Environment Canada process should determine more than federal government priorities.

July

Team recommend process should determine more.

Conservation & Protection assistant deputy minister advises Natural Resources/Policy assistant deputy minister to establish Environment Canada Project.

Federal Government Restructuring project underway.

Corporate Policy draft Corporate Policy Project report. Argue benefit-cost analysts should help decide Environment's priorities.

Corporate Policy director general advises Policy Advisory Committee (and Core Director Working Group) to re-establish Project (test Hickling process).

Project Team finish Environment Canada Project report (Draft 0).

Some National Workshop participants argue Environment Canada process should determine more than federal government priorities. Advise Project Team to continue making Environment Canada Project a priority.

Petroleum Products Industry Task Force set up Petroleum Products Consultative Mechanism. Re-establish Canadian Petroleum Products Institute Project for Environment, other federal departments, Canadian Petroleum Products Institute, and two environmental groups (test Canadian Petroleum Products Institute process), and Competitiveness Project. Update Industry and other federal department ministers on their decision.

Aug

Environment Canada Project manager advises Project Team to continue making Environment Canada Project a priority, and other National Workshop participants to make it.

Federal Government Integration and Environment Canada Integration projects underway.

Ecosystem Sciences director general? re-establishes Environment Canada Project for Environment.

Core Project Team finish Environment Canada Project report (Draft 1). Recommend Environment Canada process should not determine more than federal government priorities.

Ecosystem Sciences director general and Core Project Team advise Director General Steering Committee to re-establish Environment Canada Project.

Health Protection Project underway.

Core Director Working Group do not recommend benefit-cost analysts should help decide Environment's priorities in Environment Canada process.

Environment Canada Project manager advises Director General Steering Committee to re-establish Environment Canada Project. Committee re-establish for Environment and other federal departments.

Sept Environmental Priorities Working Group advise Advisory Committee on Environmental Protection to establish Canadian Petroleum Products Institute Project, and to argue the same to government because one (Canadian Petroleum Products Institute) process should determine national environmental priorities.  
Advisory Committee advise Canadian Petroleum Products Institute to re-establish Canadian Petroleum Products Institute Project, Environment to re-establish Environment Canada Project, and advise that Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established. Argue (to Memorandum of Understanding Steering Committee) Environment and Industry should advise Canadian Council of Ministers of the Environment to establish Environment Canada Project because one (Environment) process should determine national environmental priorities in 1994.  
Steering Committee re-establish Environment Canada Project for Environment and Industry (use Environment Canada process). Advisory Committee establish for themselves. One environmental group senior representative does not establish Environment Canada, Canadian Petroleum Products Institute, or Expanded Environment Canada-Canadian Petroleum Products Institute projects.

#### FORMULATION OF THE REVISED ENVIRONMENT CANADA PROJECT PLAN

Environmental groups argue they should not establish Environment Canada Project because Environment Canada process should be further developed. Decide to determine whether they should later. Advise Core Project Team to continue making Project a priority. Environmental Law Centre staff counsel does not establish for Centre.

Environment Canada Project manager questions whether Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established.

Rawson Academy executive director argues to Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis senior advisor that Environment Canada Project should be re-established because more time should be allocated to develop & use Environment Canada process.

Core Project Team questions whether Environment Canada-Canadian Petroleum Products Institute and Expanded Environment Canada-Canadian Petroleum Products Institute projects should be established.

Canadian Petroleum Products Institute advise Environment and Health to re-establish Canadian Petroleum Products Institute Project.  
Conservation & Protection/Environmental Protection/Industrial Programs chief questions whether Environment Canada-Canadian Petroleum Products Institute Project should be established. Advises Environment and Health to re-establish Canadian Petroleum Products Institute Project.

Canadian Labour Congress secretary-treasurer advises Advisory Committee on Environmental Protection to re-establish Environment Canada and Legislative Framework on Pollution Prevention projects. Argues Environment Canada process should be further developed before wider consultation, and process should not include socioeconomic factor.

Oct Conservation & Protection assistant deputy minister advises National Research Council vice-president to establish Environment Canada Project.

Environment advise Canadian Environmental Protection Act/Federal Provincial Advisory Committee to establish Expanded Environment Canada-Canadian Petroleum Products Institute Project.

Environment advise National Air Issues Coordinating Committee to establish.

Conservation & Protection re-establish Canadian Petroleum Products Institute Project for Environment.

Ecosystem Risk Analysis ecological risk analyst finishes Case Studies Workbook (Draft 1).

Ecosystem Sciences director general advises Director General Steering Committee to re-establish Environment Canada Project.

Core Project Team finish Environment Canada Project report (Draft 2). Recommend allocating time to develop not use Environment Canada process, do not recommend developing process before wider consultation, and recommend process should include socioeconomic factor.

Conservation & Protection split into Environmental Protection and Environmental Conservation.

Core Project Team advise Director General Steering Committee to re-establish Environment (= establish Expanded Environment Canada-Canadian Petroleum Products Institute) Project. Committee re-establish Environment Canada Project for Environment and other federal departments (develop Environment Canada process), but question whether Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established.

Strategic Options Project underway.

Nov Canadian Petroleum Products Institute Workshop participants argue to Environmental Priorities Working Group and Industry Coordinating Group that Environment, Institute, and Health should establish Expanded Environment Canada-Canadian Petroleum Products Institute Project because one (Expanded Environment Canada-Canadian Petroleum Products Institute) process should determine national environmental priorities, and other sectors and provinces should help decide them. Advise Institute to advise other sectors and provinces to establish. Some Working Group members question whether Institute should establish Environment Canada-Canadian Petroleum Products Institute Project.

Environment Canada Project manager drafts revised Environment Canada Project plan. Questions whether Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established. Advises Environmental Protection/Response Assessment director general to advise Environmental Protection, Environmental Conservation, and Industry assistant deputy ministers, if not Environment management board, to re-establish Environment Canada Project.

Dec Environment Canada Project manager and Canadian Petroleum Products Institute Project contact draft second revised Environment Canada Project plan. Advise Response Assessment director general to re-establish Environment Canada Project, and establish Environment Canada-Canadian Petroleum Products Institute Project. Question whether Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established.

Response Assessment director general advises Environmental Protection assistant deputy minister to re-establish Environment Canada Project, and establish Environment Canada-Canadian Petroleum Products Institute Project. Questions whether Expanded Environment Canada-Canadian Petroleum Products Institute Project should be established.

Environmental Protection assistant deputy minister re-establishes Environment Canada Project (develop Environment Canada process) and establishes Environment Canada-Canadian Petroleum Products Institute Project (develop Environment Canada-Canadian Petroleum Products Institute process) for Environment. Decides Environment would advise Canadian Council of Ministers of the Environment to establish Environment Canada Project, but to develop not use Environment Canada and Canadian Petroleum Products Institute processes.

Major Industrial Accidents Council director contracted to finish Environment Canada Project report, and draft Environment Canada-Canadian Petroleum Products Institute Project report.

IMPLEMENTATION OF THE REVISED ENVIRONMENT CANADA PROJECT PLAN

1994

Jan

Major Industrial Accidents Council director finishes Environment Canada-Canadian Petroleum Products Institute Project report (Draft 1).

Major Industrial Accidents Council director finishes Environment Canada Project report (Draft 3).

Environmental Protection/Response Assessment senior advisor advises Response Assessment director general to re-establish Environment Canada Project.

Response Assessment senior advisor advises Response Assessment director general to re-establish Environment Canada Project. Director general re-establishes? for Environment.

Canadian Petroleum Products Institute advise Environment to establish Expanded Environment Canada-Canadian Petroleum Products Institute Project, and that Industry and Health should also.

Major Industrial Accidents Council director advises Director General Steering Committee to re-establish Environment Canada Project; and Environment director generals to re-establish Environment Canada-Canadian Petroleum Products Institute Project, and other federal department director generals to establish.

Committee re-establishes and establishes them for Environment and other federal departments. Response Assessment senior advisor advises that Environment should re-establish Environment Canada Project.

Committee do not establish Expanded Environment Canada-Canadian Petroleum Products Institute Project. Decide other sectors and provinces would not decide national environmental priorities in Expanded Environment Canada-Canadian Petroleum Products Institute process, and one process could not determine national environmental priorities. Advise that Canadian Petroleum Products Institute should be advised to establish Environment Canada-Canadian Petroleum Products Institute Project.

Canadian Petroleum Products Institute Project contact questions whether Canadian Petroleum Products Institute should establish Environment Canada-Canadian Petroleum Products Institute Project. Major Industrial Accidents Council director questions whether Environment should establish Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project.

Major Industrial Accidents Council director drafts detailed revised plan for Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects. Questions whether Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project should be established.

Major Industrial Accidents Council director questions whether Environment Canada-Strategic Options Project should be established.

Environment advise Canadian Council of Ministers of the Environment/Environmental Protection Committee to establish Environment Canada and Canadian Petroleum Products Institute projects. Canadian Petroleum Products Institute argue Committee should advise Council/Strategic Planning Committee to establish Canadian Petroleum Products Institute (= ending Council Planning) Project because one (Canadian Petroleum Products Institute) process should determine national environmental priorities.

Environmental Protection Committee argue (to Institute and Environment) Council should not establish Canadian Petroleum Products Institute Project because one process should not.

Major Industrial Accidents Council director, Response Assessment senior advisor, and Canadian Petroleum Products Institute Project contact advise Response Assessment director general to re-establish Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects. Question if Environment should re-establish Environment Canada-Canadian Petroleum Products Institute (vs establish Environment Canada-Canadian Petroleum Products Institute-Strategic Options) Project.

Industry assistant deputy minister questions (to Environmental Protection assistant deputy



minister) Environment decision not to use Environment Canada process to determine federal environmental priorities by Fall 1994.

Response Assessment senior advisor argues to Major Industrial Accidents Council director that Environment Canada Project should be re-established because more money & staff should be allocated to test (use) Environment Canada process. Advises that Environment and other federal department director generals and stakeholders should be advised to re-establish and establish it.

Response Assessment senior advisor argues Environment Canada-Canadian Petroleum Products Institute Project should be ended and Environment Canada Project re-established because time and resources should be allocated to develop & test (use) Environment Canada process (vs develop Environment Canada-Canadian Petroleum Products Institute and Environment Canada-Canadian Petroleum Products Institute-Strategic Options processes). Advises Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project should not be established.

Core Environmental Priorities Working Group advise Response Assessment director general to re-establish Environment Canada-Canadian Petroleum Products Institute Project, and establish Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project.

Feb Canadian Council of Ministers of the Environment establish Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects for themselves. Do not establish Canadian Petroleum Products Institute Project. Decide to help test Environment Canada and Environment Canada-Canadian Petroleum Products Institute processes.

Chemical Producers Association senior director argues to Advisory Committee on Environmental Protection to re-establish Environment Canada and Environment Canada-Canadian Petroleum Products Institute projects because Environment should develop & test Environment Canada and Environment Canada-Canadian Petroleum Products Institute processes.

Environmental Protection assistant deputy minister re-establishes for Environment. Decides to allocate more time (not money and staff) to test the processes (by early May 1994).

Environmental groups do not establish. Canadian Forest Products senior manager advises Advisory Committee to re-establish.

Environmental Protection assistant deputy minister asks Response Assessment director general to advise whether Environment Canada-Canadian Petroleum Products Institute Project should be re-established.

Environmental Protection assistant deputy minister updates Environment deputy minister on his decision to re-establish Environment Canada Project.

Environment deputy minister re-establishes Environment Canada-Canadian Petroleum Products Institute Project for Environment.

Major Industrial Accidents Council director advises Response Assessment director general to re-establish Environment Canada Project.

Response Assessment senior advisor advises Response Assessment director general to re-establish Environment Canada Project and establish Environment Canada-Strategic Options Project.

Response Assessment senior advisor argues to Response Assessment director general to re-establish Environment Canada Project because should test (use) Environment Canada process, and Environment should not weight ecological factor more than health and economic.

Response Assessment senior advisor argues to Response Assessment director general (and Major Industrial Accidents Council director) to re-establish Environment Canada Project because Environment should allocate more resources to test (use) Environment Canada process, and advises to advise other federal departments to re-establish. Questions whether Environment Canada-Canadian Petroleum Products Institute-Strategic Options and Environment Canada-Strategic Options projects should be established.

Director general decides Response Assessment could not test process.

Response Assessment ecological risk analyst finishes Case Studies Workbook (Draft 2). Argues to Response Assessment senior advisor that Environment Canada Project should be re-established because more Environment and other federal department staff should be allocated to test (use) Environment Canada process.

Major Industrial Accidents Council director finishes Environment Canada-Canadian Petroleum Products Institute Project report (Draft 2). Advises Response Assessment director general (and Canadian Petroleum Products Institute senior director) to re-establish Project.

Response Assessment senior advisor argues Canadian Petroleum Products Institute should be advised to establish Environment Canada-Canadian Petroleum Products Institute Project because Institute should test (use) Environment Canada-Canadian Petroleum Products Institute process.

Mar Environmental Conservation/Ecosystem Conservation/Ecosystem Initiatives ecological risk analyst argues Environment Canada process should determine single manager's priorities.

Canadian Environmental Network establishes? Environment Canada Project.

Canadian Labour Congress secretary-treasurer argues risk assessors should not help decide Environment's priorities (vs hazard assessors).

Ecosystem Conservation/Water Research director and science liaison officer argue to Major Industrial Accidents Council director that Environment Canada Project should be re-established because more Environment and other federal department staff and time should be allocated to develop Environment Canada process before broad consultation.

Response Assessment senior advisor argues Environment Canada process should not determine budgetary priorities, current and emerging issues should not be scored separately, and ecological factor should not be weighted more than health and socioeconomic.

Environmental Protection/Pollution Prevention senior engineering advisor argues Environment Canada process should not weight ecological factor more than health.

Industry environmental analyst advises Major Industrial Accidents Council director that Environment Canada Project should be re-established.

Response Assessment senior advisor advises Response Assessment director general to establish Environment Canada-Departmental Scan, Environment Canada-Canadian Environmental Protection Act Review, or Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects, or re-establish Environment Canada Project. Argues Core Project Team should not help decide Environment's priorities. Director general decides they should.

Apr Core Project Team finish Environment Canada Project report (Draft 4). Recommend Environment should test (not use) Environment Canada process and more staff (not time) should be allocated to develop process (not before broad consultation), Environment should weight ecological factor more than health and socioeconomic in process, process should not determine single manager's priorities, risk assessors should help decide Environment's priorities in the process; process could determine budgetary priorities, and Environment should score current and emerging issues separately in process.

Environmental Protection establish Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project for Environment. Advise Canadian Petroleum Products Institute to establish. Institute establish for themselves.

Health/Health Protection finish developing and using Health Protection process. End Health Protection Project for Health. Advise Health to establish Health Project.

Core Project Team advise Director General Steering Committee to re-establish Environment Canada Project.

Response Assessment director general advises Committee not to re-establish Environment Canada Project, but to establish Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project.  
 Committee do not re-establish Environment Canada Project for Environment and other federal departments. Re-establish Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project for Environment, and establish for other federal departments; and establish Environment Canada-Strategic Options or Environment Canada-Ecosystem Action Plan projects for Environment and other federal departments.

THE FAILURE OF THE ENVIRONMENT CANADA PROJECT TO BE APPROVED

<p>May</p>	<p>Environmental Protection/Response Assessment director general and Canadian Petroleum Products Institute senior director advise Canadian Council of Ministers of the Environment/Environmental Protection Committee and provinces to establish Environment Canada-Strategic Options and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects.</p> <p>Industry re-establish Environment Canada-Strategic Options and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects for themselves.          Industry environmental analyst argues to Major Industrial Accidents Council director, Response Assessment senior advisor, (and Response Assessment director general) that the projects should be re-established because Environment and Industry should test (use) Environment Canada and Environment Canada-Canadian Petroleum Products Institute processes; and benefit-cost analysts should help decide Environment's priorities. Advises Environment Canada Project should be re-established later (develop Environment Canada process).</p> <p>Canadian Petroleum Products Institute Project contact advises Response Assessment senior advisor Environment Canada-Canadian Petroleum Products Institute Project should be re-established.          Senior advisor advises Response Assessment director general to re-establish Environment Canada-Canadian Petroleum Products Institute-Strategic Options and Environment Canada projects.</p> <p>Response Assessment director general updates Advisory Committee on Environmental Protection on Environment Canada and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects.</p>
<p>June</p>	<p>Agriculture re-establish Environment Canada Project for themselves. Agriculture senior environmental analyst advises Response Assessment director general to re-establish later (develop Environment Canada process).</p> <p>Fisheries director general advises Response Assessment director general to re-establish Environment Canada Project (test Environment Canada process).</p> <p>Environmental Conservation/State of Environment Reporting director argues to (Response Assessment senior advisor,) State of Environment Reporting director general, and Response Assessment director general to re-establish Environment Canada Project because Environment should develop and test (use) Environment Canada process, and Environment should not weight ecological factor more than health or socioeconomic.</p>
<p>July</p>	<p>Response Assessment director general does not re-establish Environment Canada Project for Environment. Decides Environment should weight ecological factor more than health and socioeconomic in Environment Canada process, and benefit-cost analysts should not help decide Environment's priorities in the process.</p> <p>Environmental Protection re-establish Strategic Options Project for Environment. Health establish for themselves.</p>
<p>Aug</p>	<p>Response Assessment senior advisor advises? Response Assessment director general to re-establish Environment Canada Project (use Environment Canada process).</p> <p>Environmental Protection re-establish Environment Canada-Canadian Petroleum Products</p>

Institute-Strategic Options Project for Environment.  
Health and Transport re-establish for themselves.

Sept Response Assessment senior advisor presents Environment Canada process to Ontario  
Environment & Energy Project.

Oct Canadian Petroleum Products Institute end Environment Canada-Canadian Petroleum Products  
Institute-Strategic Options Project for themselves. Decide not to test Environment Canada-  
Canadian Petroleum Products Institute process.  
Environmental Protection assistant deputy minister? ends for Environment.  
Health and Transport end for themselves.

Nov Canadian Petroleum Products Institute advises Ontario Environment & Energy to establish  
Canadian Petroleum Products Institute Project.

**1995**

Mar Program Review project ends. Advisory Committee on Environmental Protection cut.

Environmental Protection assistant deputy minister? ends Environment Canada-Strategic Options  
and Environment Canada projects for Environment. Decides not to test Environment Canada  
process. Does not establish Environment Canada-Ecosystem Action Plan project.

TABLE 1.5

CHAPTER ORGANIZATION

This table shows how the processes of determining the Environment and other projects as priorities for Environment and other federal departments are organized according to each chapter section.

Chapter	Environment Canada Project	Imperial Oil Project	Canadian Petroleum Products Institute Project	Interdepartmental Committee Project	Expanded Environment Canada-Canadian Petroleum Products Institute Project	Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project	Environment Canada-Strategic Options Project
2	Conservation & Protection Assistant Deputy Minister Approval of the Project	Not establish for Environment & Industry	Establish for Environment & other federal departments+	Not establish for Environment & Industry	Not establish for Environment & other federal departments	End for Environment	End for Environment
3	Conservation & Protection Assistant Deputy Minister Approval of the Plan (Phase 1)						
4	Policy Advisory Committee Approval of the Plan						
5	Director General Steering Committee Approval of the Plan (Phase 1)	Re-establish for Environment & other federal departments (2)	Re-establish for Environment & other federal departments+	Not establish for Environment & Industry	Not establish for Environment & other federal departments	End for Environment	End for Environment
6	Conservation & Protection Assistant Deputy Minister Approval of the Plan (Phase 3)						
7	Director General Steering Committee Approval of the Report (Draft 2)	Re-establish for Environment & other federal departments (3)	Re-establish for Environment & other federal departments+	Not establish for Environment & Industry	Not establish for Environment & other federal departments	End for Environment	End for Environment
8	Environmental Protection Assistant Deputy Minister Approval of the Revised Plan						
9	Director General Steering Committee Approval of the Report (Draft 3)	Re-establish for Environment & other federal departments (4)	Re-establish for Environment & other federal departments+	Not establish for Environment & Industry	Not establish for Environment & other federal departments	End for Environment	End for Environment
	Environmental Protection Assistant Deputy Minister Re-Approval of the Revised Plan	Re-establish for Environment (5)	Re-establish for Environment & other federal departments+	Not establish for Environment & Industry	Not establish for Environment & other federal departments	End for Environment	End for Environment
	Director General Steering Committee Approval of the Revised Plan	Re-establish for Environment (6)	Re-establish for Environment & other federal departments+	Not establish for Environment & Industry	Not establish for Environment & other federal departments	End for Environment	End for Environment
	Environmental Protection Assistant Deputy Minister Re-Approval of the Revised Plan	Re-establish for Environment (7)	Re-establish for Environment & other federal departments+	Not establish for Environment & Industry	Not establish for Environment & other federal departments	End for Environment	End for Environment
	Environmental Protection Assistant Deputy Minister Failure to Approve the Project	End for Environment	End for Environment	End for Environment	End for Environment	End for Environment	End for Environment

TABLE 1.6

KEY PROJECTS AND PURPOSES

Environment Canada Project	<ul style="list-style-type: none"> <li>to develop and use a science-based process to determine <u>Environment's priorities - the Environment Canada process</u></li> </ul>
Imperial Oil Project	<ul style="list-style-type: none"> <li>to develop and use a science-based process to determine national pollution priorities - the Imperial Oil process</li> </ul>
Canadian Petroleum Products Institute Project	<ul style="list-style-type: none"> <li>to develop and use a science-based process to determine petroleum products industry pollution priorities - the <u>Canadian Petroleum Products Institute process</u></li> </ul>
Hickling projects	<ul style="list-style-type: none"> <li>to develop and use science-based processes to determine <u>Environment's priorities - the Hickling processes</u></li> </ul>
Interdepartmental Committee Project	<ul style="list-style-type: none"> <li>to develop and use a science-based process to determine Canadian environmental priorities - the Interdepartmental Committee process</li> </ul>
Corporate Policy Project	<ul style="list-style-type: none"> <li>to develop and use a science-based process to determine <u>Environment's policy priorities - the Hickling process</u></li> </ul>
Conservation & Protection Fiscal Restraint Project	<ul style="list-style-type: none"> <li>to develop a process to determine Conservation &amp; Protection's program priorities - the Conservation &amp; Protection Fiscal Restraint process</li> </ul>
Environment Canada-Canadian Petroleum Products Institute Project	<ul style="list-style-type: none"> <li>to develop and use the Environment Canada and Canadian Petroleum Products Institute processes to determine petroleum products industry environmental priorities - the Environment Canada-Canadian Petroleum Products Institute process</li> </ul>
June Budget Project	<ul style="list-style-type: none"> <li>to use the Conservation &amp; Protection Fiscal Restraint process <u>(to determine Conservation &amp; Protection's program priorities)</u></li> </ul>
Environment Canada-Corporate Policy Project	<ul style="list-style-type: none"> <li>to develop and use the Environment Canada and Hickling processes to determine <u>Environment's priorities</u></li> </ul>
Canadian Council of Ministers of the Environment Planning Project	<ul style="list-style-type: none"> <li>to use the Canadian Council of Ministers of the Environment Planning process to determine national environmental <u>priorities</u></li> </ul>
Expanded Environment Canada-Canadian Petroleum Products Institute Project	<ul style="list-style-type: none"> <li>to develop and use the Environment Canada-Canadian Petroleum Products Institute process to determine national environmental priorities - the <u>Expanded Environment Canada-Canadian Petroleum Products Institute process</u></li> </ul>
Strategic Options Project	<ul style="list-style-type: none"> <li>to develop and use the Strategic Options process to determine federal government pollution priorities - the Strategic Options process</li> </ul>
Environment Canada-Strategic Options Project	<ul style="list-style-type: none"> <li>to use the Environment Canada and Strategic Options processes to determine federal government pollution priorities</li> </ul>
Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project	<ul style="list-style-type: none"> <li>to use the Environment Canada-Canadian Petroleum Products Institute and Strategic Options processes to determine federal government and petroleum products industry pollution priorities - the <u>Environment Canada-Canadian Petroleum Products Institute-Strategic Options process</u></li> </ul>
Environment Canada-Ecosystem Action Plan Project	<ul style="list-style-type: none"> <li>to use the Environment Canada process to determine regional environmental priorities</li> </ul>

TABLE 2.1  
GROUP PARTICIPANTS

This table lists members of key groups of participants according to their organization, position, and type of expertise if known.

Advisory Committee on Environmental Protection - late 1992

federal government	Conservation & Protection	assistant deputy minister (co-chair)	engineering
	Industry	assistant deputy minister (co-chair)	
industry	Canadian Chemical Producers Association	president	engineering
	Delmar Chemicals Inc.	president	
	Canadian Forest Products	vice-president	forest science
	Pulp & Paper Research Institute of Canada	president & chief executive officer	
	Stelco Inc.	general manager	
	Mining Association of Canada	president	
	Noranda Minerals Inc.	vice-president	
	Shell Canada Ltd.	director	Dr.
labour	Imperial Oil Ltd.	vice-president	
	General Motors of Canada	manager	
	3M Canada Inc.	senior specialist	
	Canadian Labour Congress	executive vice-president	
environmental groups	Energy & Chemical Workers Union	president	
	United Steelworkers of America	national director	
	Canadian Papermakers Union	president	
	Pollution Probe Foundation	executive director	
institutions	La Fondation Quebecoise en environnement	vice-president	
	Rawson Academy of Aquatic Sciences	executive director	
	Environmental Law Centre	staff counsel	
	Conference Board of Canada	vice-president	PhD
secretariat	Memorial University	president & vice-chancellor	Dr.
	International Institute for Sustainable Development	president & chief executive officer	Dr.
	National Research Council	vice-president	Dr.
	Canadian Imperial Bank of Commerce	general manager	
secretariat	Conference Board of Canada		

Memorandum of Understanding Steering Committee

Conservation & Protection	assistant deputy minister	engineering
Industry	assistant deputy minister	

**Imperial Oil and Interdepartmental Committee Projects:  
Interdepartmental Committee**

Conservation & Protection/Environmental Protection/Regulatory Affairs	director (Environment lead)	engineering
Industry	chief executive	economics
	environmental analyst	engineering
		economist
Health/Health Protection	director	PhD microbiology

**Environment Canada Project:  
Priority Setting-Risk Assessment Committee**

Conservation & Protection/Ecosystem Sciences/Conservation	director (Project manager)	economics
Conservation & Protection/Environmental Protection/Regulatory Affairs	chief economist	economics
Conservation & Protection/Environmental Protection/Industrial Programs	chief manager	engineering
Conservation & Protection/Environmental Protection/Waste Management	director	engineering,
Conservation & Protection/Environmental Protection/Commercial Chemicals		
Conservation & Protection/Wildlife		MSc

**Canadian Petroleum Products Institute**

refiners & marketers	Chevron Canada Ltd.	marketers	ARCO Products Company (US)
	Husky Oil Operations Ltd.		Canadian Tire Corp Ltd.
	Imperial Oil Ltd.		Mohawk Oil Co Ltd.
	NOVA Chemicals (Canada) Ltd.		Pennzoil Products Canada
	Parkland Industries Ltd.		Petroles Norcan Inc.
	Petro-Canada		Safety-Kleen Canada Inc.
	Shell Canada Products Ltd.		
	Sunoco Inc., Suncor Energy Inc.		
	Ultramar Ltee.		



Canadian Petroleum Products Institute Project:  
Petroleum Products Industry Task Force - mid-1993

industry	Canadian Petroleum Product Institute	senior director consultant	
	Petro-Canada	senior manager senior manager	
	Sunoco Inc. Imperial Oil Products Division	senior manager senior manager	
	Shell Canada Inc. Canadian Ultramar Ltd.	senior manager senior manager (co-chair)	
	Husky Oil Marketing Co.	senior manager	
	federal government	Energy	assistant deputy minister (co-chair) director
	Finance	director	natural science, MSc
	Industry Transport Conservation & Protection Conservation & Protection/Environmental Protection	assistant deputy minister assistant deputy minister assistant deputy minister director general	engineering natural science, MSc
	Corporate Policy Health/Health Protection	assistant deputy minister director general	economics pharmacology, PhD
environmental groups	Pembina Institute for Appropriate Development Society to Overcome Pollution	executive manager senior representative	

Canadian Petroleum Products Institute Project:  
Risk Assessment & Work Prioritization Working Group

industry	Canadian Petroleum Products Institute	senior director (chair) consultant	
	federal government	Energy	director senior economist
	Finance	director chief	economics
	Industry	director general senior analyst senior analyst	engineer
	Transport Conservation & Protection/Industrial Programs	director (Environment lead)	engineering
environmental groups	Pembina Institute for Appropriate Development Society to Overcome Pollution	executive manager senior representative	

**Canadian Petroleum Products Institute Project:  
Environmental Priorities Working Group - early 1993**

industry	Canadian Petroleum Products Institute	senior director	engineering
	Petro-Canada	senior manager (co-chair)	engineering
	Imperial Oil	senior manager	
	Ultramar Canada	senior manager	
federal government	Conservation & Protection/Environmental Protection	director general (co-chair)	natural science
	Conservation & Protection/Environmental Protection/ Industrial Programs	chief	engineering
	Conservation & Protection/Ecosystem Sciences/ Conservation	director (Project manager)	economics, MA
	Conservation & Protection/Ecosystem Sciences/ Conservation/Ecosystem Risk Analysis	head (Project coordinator) senior advisor	economics, sociology, MA medicine
	Energy	socioeconomic risk analyst director	economics, sociology, MA natural science
	Finance	senior economist	
	Transport	chief	economics
	Health/Health Protection	director manager	natural science, Dr.
		biostatistician	statistics, economics, PhD
	Industry	executive	engineering
environmental groups	Pembina Institute for Appropriate Development	executive manager	
	Society to Overcome Pollution	senior representative	

**Environment Canada Project:  
Core Director Working Group - mid-1993**

Conservation & Protection/Ecosystem Sciences/Conservation	director (chair)	economics, MA
Conservation & Protection/Environmental Protection/Regulatory Affairs	director	economics
Conservation & Protection/Environmental Protection/Industrial Programs	chief	engineering
Conservation & Protection/Policy	director	social science, MA
Conservation & Protection/Wildlife	director	biology
Corporate Policy	director	economics
Atmospheric Environment	director	engineering
Parks	director	natural science, MSc
Science Advisor	director	social science
Health/Health Protection	director	
Industry	director	
Finance	chief	economics

**Environment Canada Project:  
Assistant Deputy Ministers - mid-1993**

Conservation & Protection	assistant deputy minister	engineering
Corporate Policy	assistant deputy minister	economics, MA
Atmospheric Environment	assistant deputy minister	meteorology, PhD
Parks	assistant deputy minister	
Transport	assistant deputy minister	
Health/Health Protection	assistant deputy minister	
Industry	assistant deputy minister	
Energy	assistant deputy minister	economics, engineering
Finance	assistant deputy minister	economics
Agriculture	assistant deputy minister	agricultural science
Fisheries	assistant deputy minister	
Natural Resources/Policy	assistant deputy minister	engineering

**Environment Canada Project:  
Director General Steering Committee - mid-1993**

Conservation & Protection/Ecosystem Sciences	director general (chair)	natural science
Conservation & Protection/Environmental Protection	director general	natural science, MSc
Conservation & Protection/Policy	director general	natural science
Conservation & Protection/Wildlife	director general	natural science, MSc
Conservation & Protection/State of Environment Reporting	director general	meteorology, PhD
Science Advisor	science advisor	natural science, PhD
Corporate Policy	director general	economics, MA
Atmospheric Environment	director general	
Energy	director	natural science, MSc
Industry	director general	natural science, MSc
Transport	director general	
Health/Health Protection	director general	pharmacology, PhD
Finance	director	science, MSc
Agriculture	director general	natural science, PhD
Fisheries	director general	

Environment Canada Project:  
Project Team - mid-1993

Conservation & Protection/Ecosystem Sciences/ Conservation	director (Project manager)	economics, MA
Conservation & Protection/Ecosystem Sciences/ Conservation/Ecosystem Risk Analysis	head (Project coordinator)	economics, sociology MA
	senior advisor	medicine
	ecological risk analyst socioeconomic risk analyst	physical science economics, sociology, MA
Conservation & Protection/Ecosystem Sciences/ Eco-Health	environmental quality guidelines specialist	natural science
	environmental quality guidelines specialist	natural science
Conservation & Protection/Ecosystem Sciences/ Water Research	science liaison officer	ecology, PhD
Conservation & Protection/Environmental Protection/ Industrial Programs	chief	engineering
	senior engineer	engineering
Conservation & Protection/Environmental Protection/ Pollution Prevention	senior engineering advisor	engineering
Conservation & Protection/Environmental Protection/ Regulatory Affairs	economist	
Conservation & Protection/Environmental Protection/ Waste Management	manager	engineering
Conservation & Protection/Wildlife	resource economist	
Conservation & Protection/State of Environment Reporting	senior economic advisor	economics
Atmospheric Environment Corporate Policy	director	engineering
	director	economics
Parks Science Advisor	economist	
	forest ecologist	
	senior advisor	natural science
International Joint Commission Industry	senior environmental advisor	limnology, PhD
	executive	engineering
Energy Health/Health Protection	environmental analyst	economics
	senior economist	
	director	
Agriculture	biostatistician	statistics, economics, PhD
	senior environmental analyst	economics

Environment Canada Project:  
Environmental Group Workshop

Sierra Club	senior representative
Ecology Action Centre (Nova Scotia)	senior representative
Canadian Environmental Network	senior representative (morning only)
Environmental Law Centre (Alberta)	staff counsel
Manitoba Environmentalists Inc.	senior representative
Canadian Nature Federation	senior representative
Society to Overcome Pollution (Quebec)	senior representative
Alliance for Public Wildlife	senior representative

Sources: Advisory Committee on Environmental Protection, list of members, November 1992; Advisory Committee on Environmental Protection, terms of reference, November 18, 1992, 1; Conservation & Protection/Ecosystem Sciences director general to Conservation & Protection assistant deputy minister, memo of November 25, 1992, "Priority Setting and Risk Assessment"; Industry assistant deputy minister to Conservation & Protection assistant deputy minister, letter of December 18, 1992, "ACEP Proposal on Priority Setting"; Conservation & Protection/Environmental Protection/Regulatory Affairs director to Environment Canada Project manager, memo of November 18, 1992, "Delegates for the Priority Setting-Risk Assessment Committee"; Conservation & Protection/Environmental Protection/Regulatory Affairs economist, briefing note of November 27, 1992, "Federal response to ACEP re: [Imperial Oil senior manager's] 'Setting Priorities for Environmental Protection: An Action Plan'"; Canadian Petroleum Products Institute, Annual Report, 1997; first Canadian Petroleum Products Institute senior director to Petroleum Products Industry Task Force, memo of June 16, 1993, "Report of the Petroleum Products Industry Task Force"; Environment Canada Project manager to Risk Assessment & Work Prioritization Working Group, memo of November 16, 1992, "Please find attached..."; Conservation & Protection/Ecosystem Sciences director general to Conservation & Protection assistant deputy minister, memo of November 25, 1992, "Priority Setting and Risk Assessment"; "CPPI Task Force: Environmental Priorities Working Group Distribution List (Revised 6 April 1993)"; Environment/Conservation & Protection/Ecosystem Sciences/Conservation, "Environmental Issue Ranking: A Proposed Priority Setting Methodology for Environment Canada," Draft, August 26, 1993, 49-52; Project Team, minutes of first meeting of June 9, 1993; Project Team, minutes of second meeting of June 29, 1993; Resource Futures facilitator, "Ranking Environmental Issues: A Priority Setting Methodology: Report on the September 10, 1993 Workshop," Environment/Conservation & Protection/Ecosystem Sciences/Conservation, September 1993, 7.

TABLE 2.2

## SUMMARIES OF KEY PROJECTS

This table summarizes major similarities and differences of key projects.

Imperial Oil Project	<ul style="list-style-type: none"> <li>• develop &amp; use process</li> <li>• based on risk assessment, benefit-cost analysis</li> <li>• to determine national pollution priorities</li> <li>• Advisory Committee on Environmental Protection steer (industry, labour, environmental groups, institutions)</li> </ul>
Hickling projects	<ul style="list-style-type: none"> <li>• develop &amp; use process</li> <li>• based on risk assessment, benefit-cost analysis</li> <li>• to determine toxic substances regulation priorities</li>   <li>• develop process</li> <li>• based on risk assessment, benefit-cost analysis</li> <li>• to determine Environment's planning, decision-making, and budgeting priorities</li> <li>• consulting company steer (Hickling Corporation)</li> </ul>
Canadian Petroleum Products Institute Project	<ul style="list-style-type: none"> <li>• develop &amp; use process</li> <li>• based on risk assessment, benefit-cost analysis</li> <li>• to determine petroleum products industry pollution priorities</li> <li>• Petroleum Products Industry Task Force steer (petroleum products industry, federal government, environmental groups)</li> <li>• Environmental Priorities Working Group</li> </ul>
Environment Canada Project	<ul style="list-style-type: none"> <li>• develop &amp; use process</li> <li>• based on risk assessment</li> <li>• to determine Environment's priorities</li> <li>• Director General Steering Committee steer (Environment and other federal departments)</li> <li>• Core Director Working Group</li> <li>• Project Team</li> </ul>
Interdepartmental Committee Project	<ul style="list-style-type: none"> <li>• develop &amp; use process</li> <li>• based on risk assessment</li> <li>• to determine Canadian environmental priorities</li> <li>• federal government, Advisory Committee on Environmental Protection, selected individuals steer</li> </ul>
Corporate Policy Project	<ul style="list-style-type: none"> <li>• develop &amp; use process</li> <li>• based on risk assessment, benefit-cost analysis</li> <li>• to determine Environment's priorities</li> <li>• Environment steer</li> </ul>



end	for Environment	by Environmental Protection assistant deputy minister	government experts	not asked, did not offer			
Canadian Petroleum Products Institute Project							
establish	for Environment, other federal departments, & others	by Petroleum Products Industry Task Force	Regulatory Affairs economist;	asked by Regulatory Affairs director, as Priority Setting-Risk Assessment Committee member, did not offer	unknown	Energy economist; Industry engineer;	asked by Risk Assessment & Work Prioritization Working Group, as members, offered to Task Force
re-establish	for Environment, other federal departments, & others	by Petroleum Products Industry Task Force	unknown		unknown	others unknown	asked by Environmental Priorities Working Group, as members, offered to Task Force
Imperial Oil Project							
establish (not)	for Environment & Industry	by Memorandum of Understanding Steering Committee	unknown		unknown	Regulatory Affairs economist;	asked by Regulatory Affairs director, as Priority Setting-Risk Assessment Committee member, offered to Memorandum of Understanding Steering Committee
Interdepartmental Committee Project							
establish (not)	for Environment & Industry	by Memorandum of Understanding Steering Committee	Regulatory Affairs economist;	asked by Priority Setting-Risk Assessment Committee, as member, offered to Memorandum of Understanding Steering Committee	unknown	Industry economist;	asked by Interdepartmental Committee, as member, offered to Memorandum of Understanding Steering Committee
Expanded Environment Canada-Canadian Petroleum Products Institute Project							
establish (not)	for Environment & other federal departments	by Director General Steering Committee	Ecosystem Risk Analysis economist, Industry economist, statistician, Industrial Programs engineer;	asked by Core Project Team, as members, offered to Director General Steering Committee; asked by Canadian Petroleum Products Institute Workshop participants, as participants, offered to Environmental Priorities Working Group	unknown	unknown	unknown
Environment Canada-Canadian Petroleum Products Institute Project-Strategic Options							
end	for Environment	by Environmental Protection assistant deputy minister	Industry economist;	asked by Industry director general, argued via senior advisor, to Response Assessment director general	unknown	unknown	unknown
Environment Canada-Strategic Options Project							
end	for Environment	by Environmental Protection assistant deputy minister	Industry economist;	asked by Industry director general, argued via senior advisor, to Response Assessment director general	unknown	unknown	unknown



TABLE 10.2

## ARGUMENTS THAT INVOLVED EXPERTS

Who Argued To Who or Who Resolved	Arguments or Resolution
Interdepartmental Committee (Industry economist+) and Priority Setting-Risk Assessment Committee (Conservation & Protection/Environmental Protection/Regulatory Affairs economist+)	industry and an advisory group should not decide Canadian environmental priorities
Interdepartmental Committee (Industry economist+) Director General Steering Committee	benefit-cost analysts should not help decide Canadian environmental priorities industry, an advisory group, and benefit-cost analysts would not decide decide Canadian environmental priorities (in Interdepartmental Committee process)
Environment Canada Project manager	should end Corporate Policy Project - because quantitative risk assessors and benefit-cost analysts should not help decide Environment's priorities
Director General Steering Committee (Agriculture economist+)	should re-establish Corporate Policy Project - because quantitative risk assessors and benefit-cost analysts should help decide Environment's priorities (in Hickling process)
Corporate Policy Core Director Working Group	benefit-cost analysts should help decide Environment's priorities benefit-cost analysts should help decide Environment's priorities (in Environment Canada process)
Canadian Labour Congress secretary-treasurer	risk assessors should not help decide Environment's priorities
Core Project Team (Corporate Policy economist+)	risk assessors should help decide Environment's priorities (in Environment Canada process)
Industry economist	benefit-cost analysts should help decide Environment's priorities
Response Assessment director general	benefit-cost analysts should not help decide Environment's priorities (in Environment Canada process)
Conservation & Protection/Environmental Protection director general, Corporate Policy director general, and Conservation & Protection/Policy director	other federal departments (experts+) should not help decide Environment's priorities
Ecosystem Sciences	other federal departments (experts+) should help decide Environment's priorities
Ecosystem Sciences director general, Environmental Protection director general, Corporate Policy director general, and director	Conservation & Protection assistant deputy minister should decide if other federal departments (experts+) should help decide Environment's priorities
Environment Canada Project manager, Environmental Protection director, Environmental Protection/Industrial Programs chief, and Policy director	should re-establish Environment Canada Project, end Canadian Petroleum Products Institute Project, and not establish Imperial Oil Project - because one (Environment Canada) process should determine Environment priorities
Environmental Priorities Working Group (Natural Resources/Energy economist, Health/Health Protection statistician+)	should end Canadian Petroleum Products Institute Project, would develop Canadian Petroleum Products Institute process
Environmental Priorities Working Group (Energy economist, statistician+)	government should decide Canadian Petroleum Products Institute Project - because one (Canadian Petroleum Products Institute) process should determine national environmental priorities
Advisory Committee on Environmental Protection	Environment and Industry should advise Canadian Council of Ministers of the Environment to re-establish Environment Canada Project - because one (Environment Canada) process should determine national environmental priorities in 1994

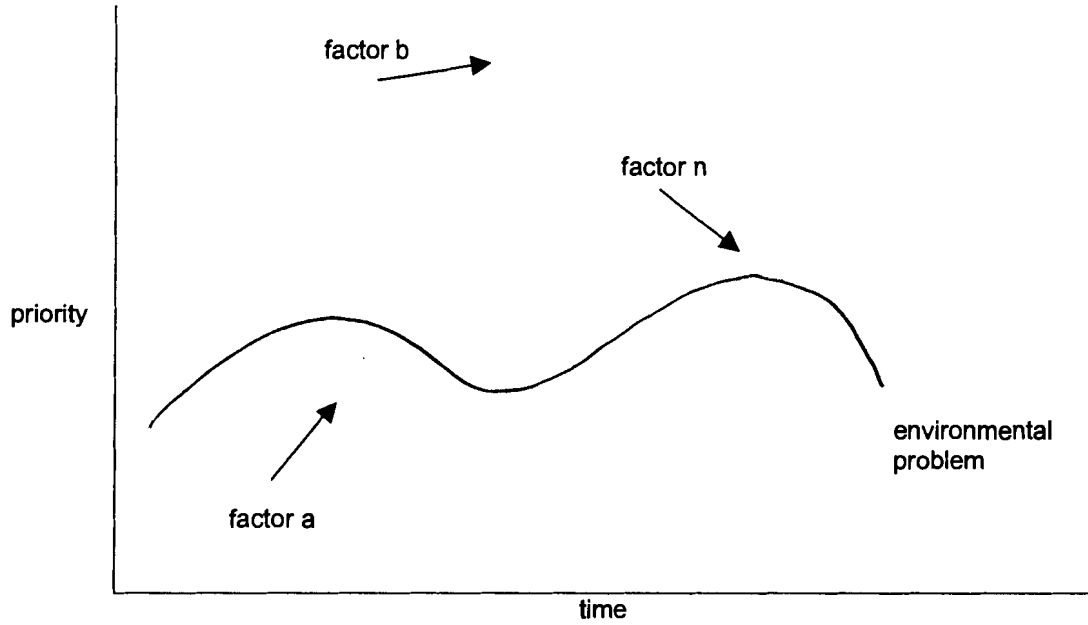
Canadian Petroleum Products Institute Workshop (Environmental Protection/ Industrial Programs engineer, statistician+)	argued to Environmental Priorities Working Group (Energy economist, statistician+) and Industry Coordinating Group	should establish Expanded Environment Canada-Canadian Petroleum Products Institute Project - because one (Expanded Environment Canada-Canadian Petroleum Products Institute) process should determine national environmental priorities and other sectors and provinces should help decide national environmental priorities not establish Expanded Environment Canada-Canadian Petroleum Products Institute Project for Environment & other federal departments, other sectors and provinces would not help decide national environmental priorities (in Expanded Environment Canada-Canadian Petroleum Products Institute process), one process could not determine national environmental priorities
Director General Steering Committee	decided	
Core Director Working Group	argued to Environment Canada Project manager	Environment Canada process should determine more than pollution priorities
Environment Canada Project manager	recommended	Environment Canada process should not determine more than pollution priorities
Conservation & Protection/Wildlife director	argued to Environment Canada Project manager	Environment Canada process should determine more than pollution priorities
Director General Steering Committee (Agriculture economist+)	decided	Environment Canada process should determine more than pollution priorities
Environment Canada Project manager	argued to Energy economist	public should help decide petroleum products industry pollution priorities
Environmental Priorities Working Group (Energy economist, statistician+)	recommended	public should help decide petroleum products industry pollution priorities (in Canadian Petroleum Products Institute process)
many Project Team members	argued to Ecosystem Sciences/Conservation	Environment Canada process should determine more than federal government priorities
Project Team (Conservation/Ecosystem Risk Analysis, Ecosystem Sciences/ Water Research, and Ecosystem Sciences/Eco-Health natural scientists; Ecosystem Risk Analysis, Wildlife, Regulatory Affairs, Corporate Policy, and Industry economists; engineer; statistician+)	recommended	Environment Canada process should determine more than federal government priorities
some National Workshop participants	argued to Project Team (Ecosystem Risk Analysis, Water Research, and two Eco-Health natural scientists; Ecosystem Risk Analysis, Ecosystem Sciences/Strategic Planning, Wildlife, Regulatory Affairs, Corporate Policy, Natural Resources/Forestry, two Energy, and Industry economists;engineer; statistician+)	Environment Canada process should determine more than federal government priorities
Core Project Team (Ecosystem Risk Analysis natural scientist, Ecosystem Risk Analysis and Industry economists+)	recommended	Environment Canada process should not determine more than federal government priorities
Rawson Academy executive director	argued to Core Project Team (Ecosystem Risk Analysis and Industry economists, statistician+) and Canadian Environmental Network senior representative	should re-establish Environment Canada Project - because should allocate more time to develop and use Environment Canada process
Canadian Labour Congress secretary-treasurer	argued to Advisory Committee on Environmental Protection	should develop Environment Canada process before wider consultation, Environment Canada process should not include socioeconomic factor
Core Project Team (Ecosystem Risk Analysis and Industry economists, statistician+)	advised	should re-establish Environment Canada Project - because should allocate more time to develop (not use) Environment Canada process
senior advisor	recommended	Environment Canada process should include socioeconomic factor
	did not recommend	should develop Environment Canada process before wider consultation
	argued to Response Assessment director general and Major Industrial Accidents Council director	should re-establish Environment Canada Project - because Environment should allocate more resources (Environment & other federal department staff+) to test Environment Canada process
Environmental Protection/Response Assessment (former Ecosystem Risk Analysis) natural scientist	argued to senior advisor, Major Industrial Accidents Council director, and Core Project Team (Corporate Policy economist+)	should re-establish Environment Canada Project - because should allocate more Environment & other federal department staff (experts+) to test Environment Canada process
Environmental Conservation/Water Research (former Water Research) director and natural scientist	argued to Major Industrial Accidents Council director and Core Project Team (Corporate Policy economist+)	should re-establish Environment Canada Project - because should allocate more Environment & other federal department staff (experts+) and time to develop Environment Canada process before broad consultation
Core Project Team (Corporate Policy economist+)	advised	should re-establish Environment Canada Project - because Environment should test Environment Canada process
	recommended	and should allocate more Environment & other federal department staff (not time) to develop Environment Canada process (not before broad consultation)

Industry economist	argued to Major Industrial Accidents Council director, senior advisor, and Response Assessment director general	should re-establish Environment Canada-Strategic Options and Environment Canada-Canadian Petroleum Products Institute-Strategic Options projects - because Environment and Industry should test Environment Canada and Environment Canada-Canadian Petroleum Products Institute processes should re-establish Environment Canada Project - because Environment should develop and test Environment Canada process end Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project for Canadian Petroleum Products Institute, Institute would not test Environment Canada-Canadian Petroleum Products Institute process
Environmental Conservation/State of Environment Reporting director Canadian Petroleum Products Institute	argued to senior advisor, state of Environment Reporting director general, and Response Assessment director general decided	end Environment Canada-Strategic Options and Environment Canada projects for Environment, Environment would not test Environment Canada process
Environmental Protection assistant deputy minister	decided	
senior manager	argued to Response Assessment director general	Environment Canada process should not weight ecological factor more than health and socioeconomic
senior manager	argued to Major Industrial Accidents Council director and Core Project Team (Corporate Policy economist+)	Environment Canada process should not determine budgetary priorities, should not score current and emerging issues separately, should not weight ecological factor more than health and socioeconomic should not weight ecological factor more than health
Environmental Protection/Pollution Prevention senior engineering advisor	argued to Major Industrial Accidents Council director and Core Project Team (Corporate Policy economist+) recommended	Environment should weight ecological factor more than health and socioeconomic (in Environment Canada process), Environment Canada process could determine Environment budgetary priorities, Environment should score current and emerging issues separately (in Environment Canada process)
Core Project Team (Corporate Policy economist+)		
State of Environment Reporting director	argued to senior manager, State of Environment Reporting director general, and Response Assessment director general decided	Environment Canada process should not weight ecological factor more than health and socioeconomic Environment Canada process should weight ecological factor more than health and socioeconomic
Response Assessment director general		
Environmental Conservation/Ecosystem Conservation/Ecosystem Initiatives (former Response Assessment) natural scientist	argued to senior manager, Response Assessment director general, Major Industrial Accidents Council director, and Core Project Team (Corporate Policy economist+) recommended	Environment Canada process should determine a single manager's priorities
Core Project Team (Corporate Policy economist+)		Environment Canada process should not determine a single manager's priorities
senior manager	argued to Response Assessment director general	Core Project Team (Corporate Policy economist+) should not help decide Environment priorities
Response Assessment director general	decided	Core Project Team (Corporate Policy economist+) would help decide Environment priorities (in Environment Canada process)

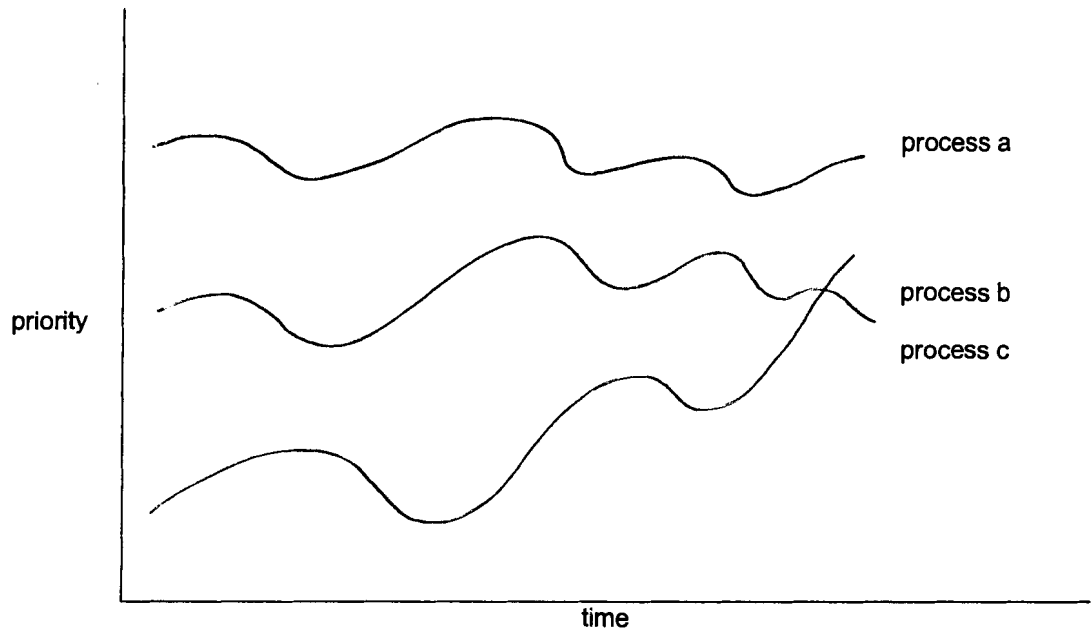
FIGURE 1.1

INTERPLAY OF DETERMINING FACTORS

This figure shows how various factors can interplay to influence and control priorities.



Single Process



Multiple Processes

FIGURE 1.2

FEDERAL GOVERNMENT DECISION-MAKERS AND EXPERTS

This figure shows the categories of government decision-makers and experts and their roles in establishing priorities.

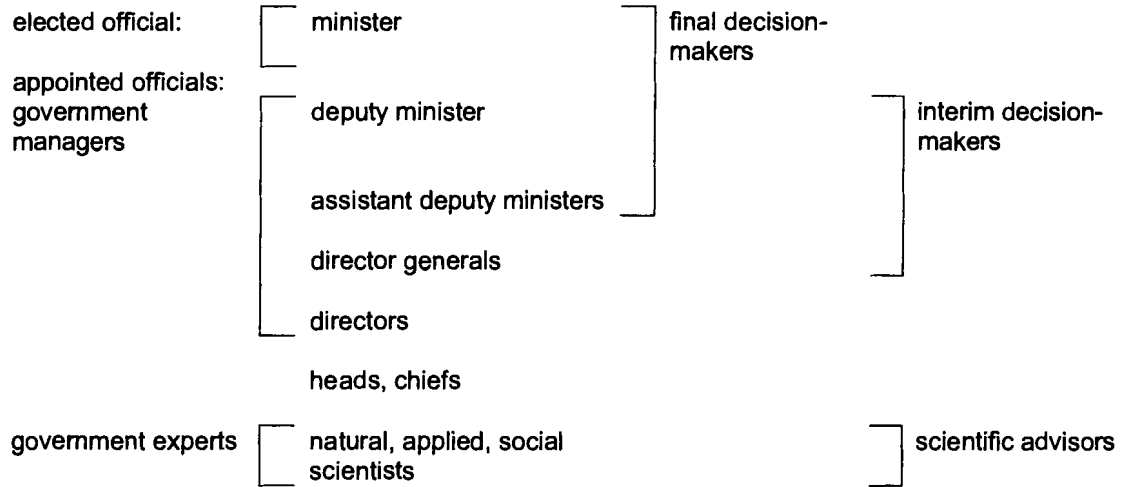
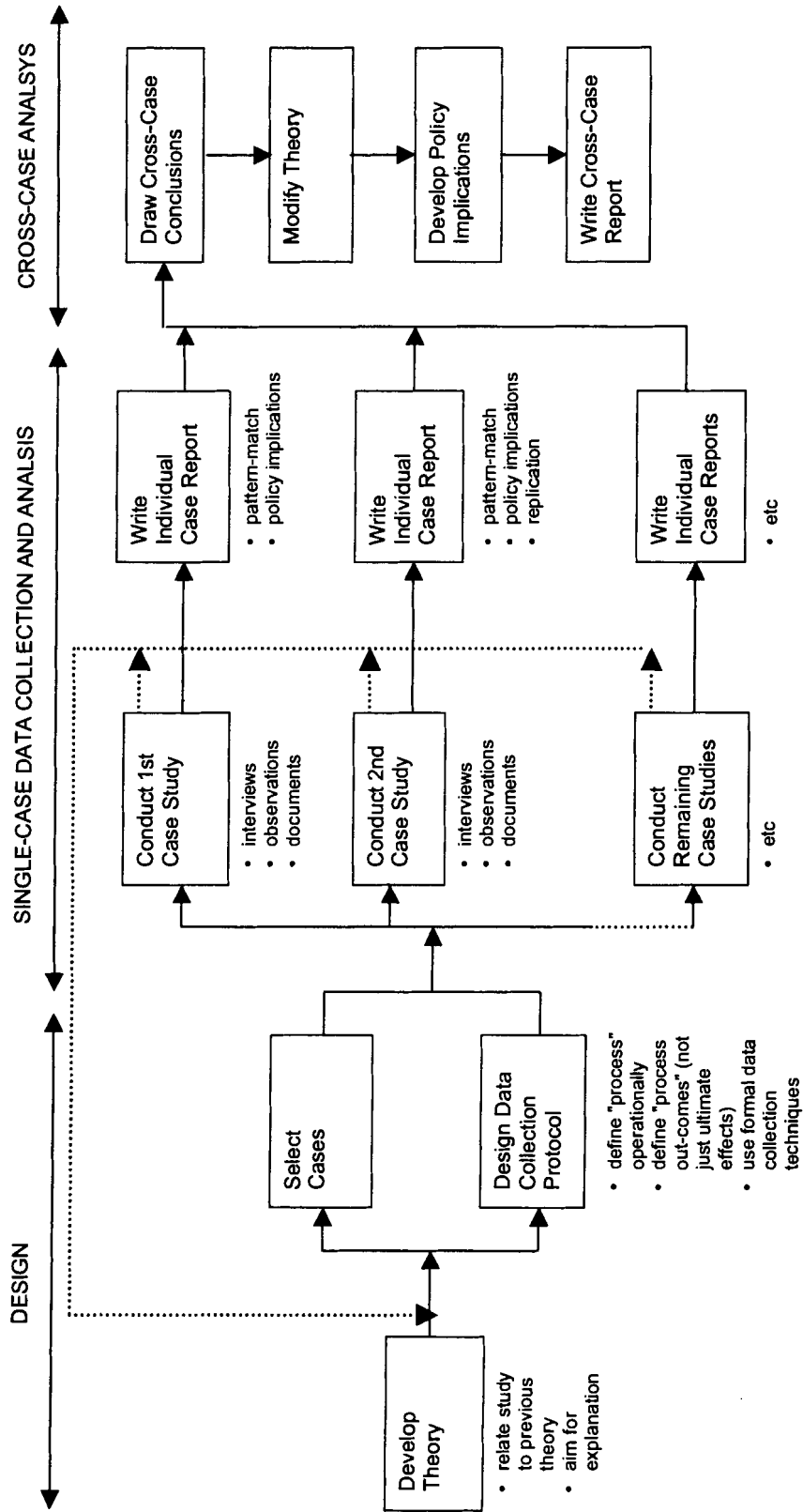


FIGURE 1.3  
CASE STUDY METHOD



Source: Robert K. Yin, *Case Study Research: Design and Methods*, rev. ed., Applied Social Research Methods Series, vol. 5 (Newbury Park: Sage Publications, 1989), 56, by permission.

FIGURE 1.4  
 KEY FEDERAL GOVERNMENT STRUCTURE RELEVANT TO ENVIRONMENT CANADA PROJECT - LATE 1992

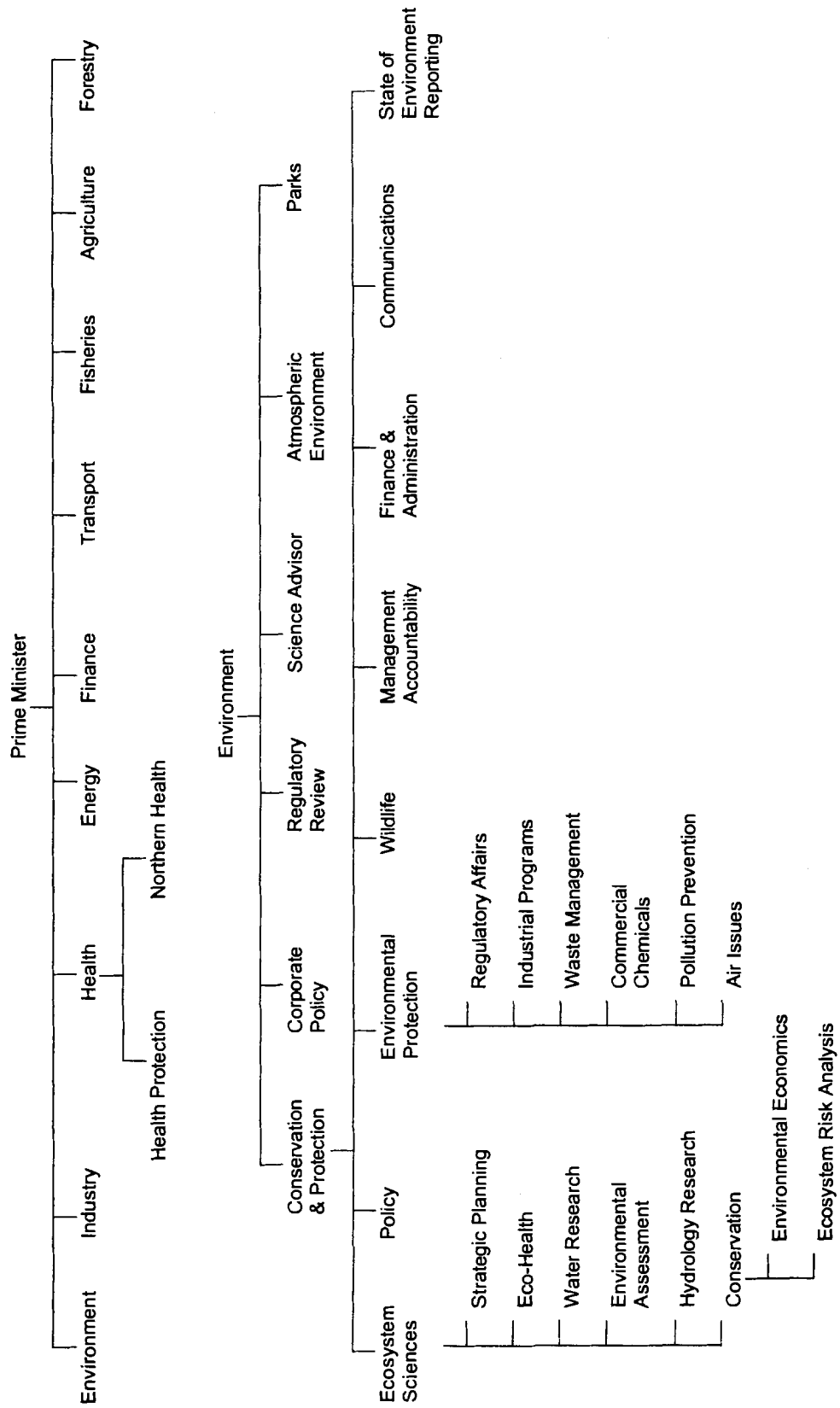
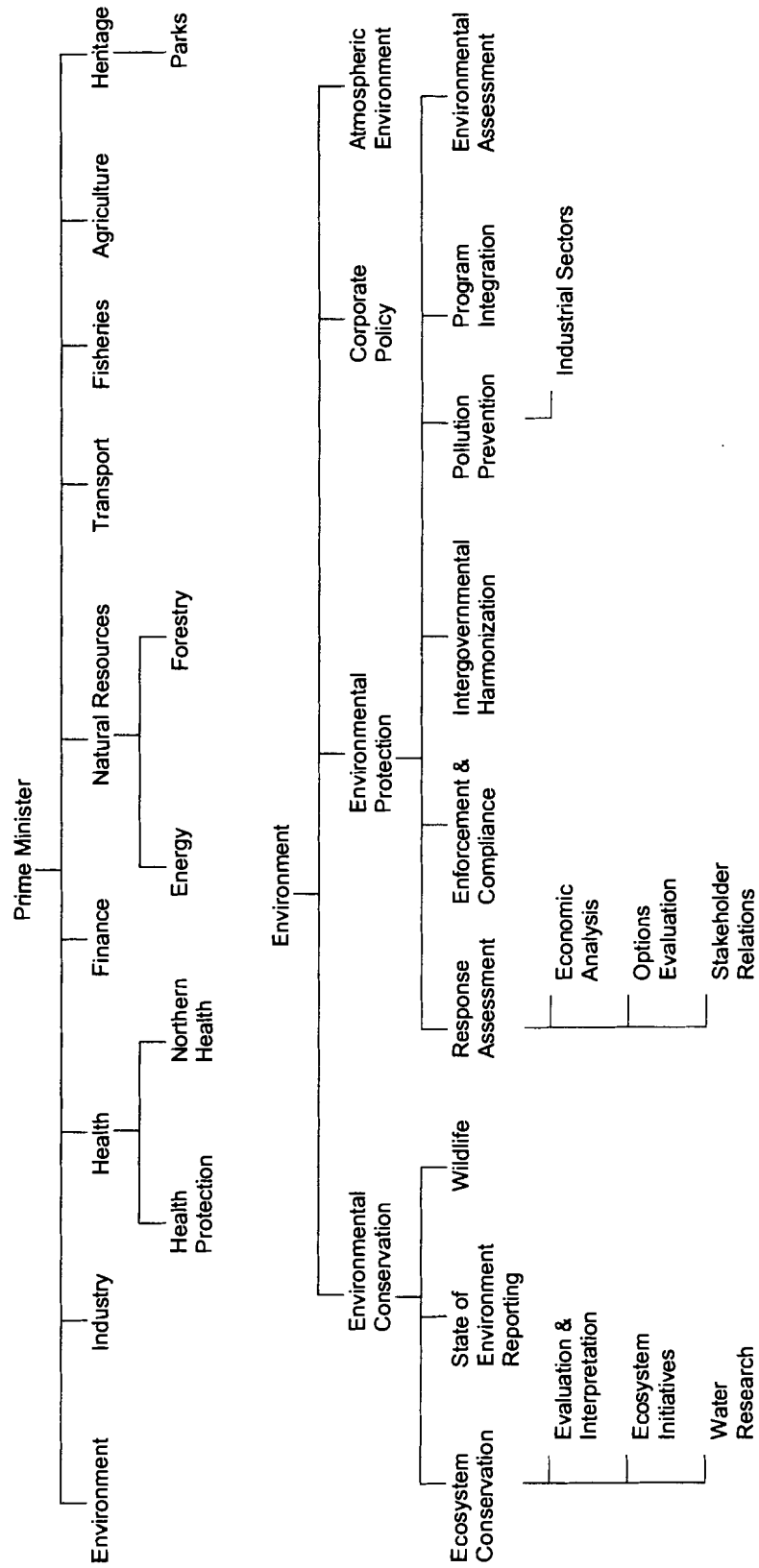


FIGURE 5.1  
KEY FEDERAL GOVERNMENT STRUCTURE RELEVANT TO ENVIRONMENT CANADA PROJECT - EARLY 1994





APPENDIX 1  
ENVIRONMENT CANADA PROJECT DETAILS

Process

EXECUTIVE SUMMARY

The need for a transparent and consistent framework and methodology to define, sort and rank environmental issues based on ecosystem risk is clear and is generally accepted. Concerns may remain as to how, when, for what purposes, and by whom the methodology might be used.

The framework proposed to define environmental issues is the Stress-Exposure-Response... framework which would operate within the Activity-Stress-Exposure-Response-Adaptation... paradigm. Environmental issues can be aggregated or disaggregated as necessary and desirable, through the aggregation or disaggregation of the stressors, the environmental exposures, or the responses.

The methodology requires that environmental concerns, problems and events be first scanned and scoped in a systematic manner and that information in respect to an established set of factors and other characteristics be determined and recorded in a preliminary manner. At this point a mini-profile (information) sheet is established on each concern, problem or event which is to be retained for tracking purposes over time. As a second step, each such concern, problem or event is then screened and more fully characterized to separate initially those which are believed to have significance for more detailed treatment as potential issues, either of a current or of a probably or future nature; care being taken to note what is known, suspected or feared in respect of each. Some of this data or information is established as a score (to be used for ranking) and other information used for the purposes of establishing flags (for the purposes of sorting). The third step is to actually score the issues in respect (at the present time) to their consequences for ecological, human health and socio-economic effects, and to establish the height of the flags in respect to the non-scored aspects. In the final, fourth step, the issues are clustered into groups and ranked. At this point, a relatively coherent set of information on environmental issues can enter formal or informal decision-making processes within the Department and perhaps be the basis for discussions with other stakeholders.

This framework and methodology is not necessarily to be used by other agencies at either the federal or provincial level to sort, screen or rank environmental issues, although it is recognize that he manner in which environmental issues are treated by Environment... may influence other departments or agencies at both levels of government, and will influence industry and other groups. Nor is it intended that any particular environmental concern, problem or event, or indeed issue, be taken off the agenda. Some, for obvious reasons, may be set aside temporarily to be monitored over time (e.g., they may [sic] judged not to have immediate significance, or they may be found to be outside the jurisdiction or responsibility of Environment...); others may be judged to require research (either scientific or applied); others may require public communication programs (because public and scientific perceptions appear at variance); and yet others may require the development of response options.

Events, concerns and problems judged to be significant through this open and transparent process, would be treated as issues, to be grouped or clustered into appropriate bundles and ranked within those bundles. Decision-making in respect to the issues may involve work planning decision, but does not necessarily imply the allocation of specific levels of resources; it is expected that each issue will be treated with the level or type of response appropriate to its significance and state.

<b>ISSUE PROFILE</b>	
<b>Step 1: SCAN &amp; SCOPE</b>	<ul style="list-style-type: none"> <li>• to identify early warning signs of emerging issues</li> <li>• to communicate &amp; define concerns as environmental issues</li> <li>• to compare, sort &amp; group issues</li> </ul>
1) IDENTIFY ORIGIN OF CONCERN: (e.g., media, interest groups, scientists, managers)	.....
2) ISSUE DEFINITION: Provide a statement of the problem in the form of a scientifically valid Stress-Exposure-Response relationship.	..... .....
3) PROXIMATE CAUSE: Indicate the points in the chain of contributing human activities where a change in behaviour would potentially have the effect of reducing the stress on the environment.	Physical restructuring (e.g., land use, dredging & diversions) .....  Harvesting & extraction (e.g., fisheries, forestry & mining) .....  Agriculture .....  Dispersed applications (e.g., fertilizers & pesticides) .....  Primary resource transformation (e.g., milling, smelting & processing) .....  Manufacturing & assembly (e.g., emissions, effluents & solid waste) .....  Transportation & distribution (e.g., storage, spills & leaks) .....  Energy production/use (e.g., thermal power) .....  Domestic consumption/use (e.g., household products) .....  Disposal (e.g., land fills & incineration) .....  Natural processes & events (i.e., background level of exposure) .....
4) What is currently being done to reduce the associated environmental risks?	.....
5) If known, what percentage of the (residual) risk could be attributed to each activity/source?	.....
6) Are the activities contributing to these risks likely to increase, decrease or remain the same over time?	..... .....

**ISSUE PROFILE SHEET (Continued)**

<p><b>7) STRESSORS involved:</b> Check as many that apply.</p>	<ul style="list-style-type: none"> <li>• Physical               <ul style="list-style-type: none"> <li>• Disturbance ( )</li> <li>• Temperature change ( )</li> <li>• Precipitation ( )</li> <li>• Radiation ( )</li> <li>• Noise ( )</li> <li>• Other (please specify) .....</li> </ul> </li> <li>• Biological               <ul style="list-style-type: none"> <li>• Depletion ( )</li> <li>• Introduction of non-native species ( )</li> <li>• Biotechnological manipulation ( )</li> <li>• Other (please specify) .....</li> </ul> </li> <li>• Chemical               <ul style="list-style-type: none"> <li>• Toxins ( )</li> <li>• Nutrients ( )</li> <li>• Other (please specify) .....</li> </ul> </li> </ul>
<p><b>8) EXPOSURE PATHWAYS involved:</b> Check as many as apply.</p>	<ul style="list-style-type: none"> <li>• Air ( )</li> <li>• Surface Water ( )</li> <li>• Groundwater ( )</li> <li>• Sediment ( )</li> <li>• Soil ( )</li> <li>• Biota ( )</li> </ul>
<p><b>9) VALUED ECOSYSTEM COMPONENTS/ATTRIBUTES affected:</b> Identify the desired characteristics which are exposed and potentially affected.</p>	<ul style="list-style-type: none"> <li>• Ecological Integrity ( )</li> <li>.....</li> <li>• Human Health ( )</li> <li>.....</li> <li>• Social and Economic Welfare ( )</li> <li>.....</li> </ul>
<p><b>10) ECOSYSTEM RESPONSE:</b> Identify potential impairment, damage or loss.</p>	<ul style="list-style-type: none"> <li>• Ecosystems .....</li> <li>• Community .....</li> <li>• Population/Species .....</li> <li>• Individuals .....</li> <li>• Abiotic .....</li> </ul>
<p><b>11) ISSUE SCOPE:</b> a) Geographical  b) Temporal</p>	<ul style="list-style-type: none"> <li>• Transboundary - Global ( )</li> <li>• Interprovincial - National ( )</li> <li>• Provincial - Regional ( )</li> <li>• Local community or site ( )</li> <li>• Current - Risk ( )</li> <li>• Emerging - Risk ( )</li> <li>• Anticipated - Risk ( )</li> <li>• Feared - Risk ( )</li> </ul>

ISSUE PROFILE SHEET (Continued)

Step 2: SCREEN & CHARACTERIZE				<ul style="list-style-type: none"> <li>• to determine whether or not an issue is environmentally significant</li> <li>• to collect the information necessary to score and rank the issue</li> </ul>
12) An environmental issue is significant if...  Check as many as apply.		<ul style="list-style-type: none"> <li>• Human populations are exposed to a health hazard ( )</li> <li>• Ecosystem integrity is threatened ( )</li> <li>• Social or economic welfare is impacted ( )</li> <li>• Future generations' wellbeing could be affected ( )</li> <li>• There is substantial public concern ( )</li> </ul>		
13) What is Environment Canada's role in the issue?		<ul style="list-style-type: none"> <li>• Direct (Sponsor) ( )                             <ul style="list-style-type: none"> <li>• Commitment ( )</li> <li>• Jurisdiction ( )</li> <li>• Regulatory duty ( )</li> <li>• Ownership of lands/facilities ( )</li> </ul> </li> <li>• Shared (Partner) ( )                             <ul style="list-style-type: none"> <li>• Approvals, funding ( )</li> <li>• Another Ministry ( )</li> <li>• Federal/Provincial cooperation ( )</li> </ul> </li> <li>• Indirect (Advisor) ( )                             <ul style="list-style-type: none"> <li>• Scientific leadership ( )</li> </ul> </li> </ul>		
14) Should the information necessary to score and rank the issue be collected?		<ul style="list-style-type: none"> <li>• If the issue is not environmentally significant or the Department does not have a role in the issue, do not proceed.</li> <li>• If the issue is significant but primarily the responsibility of another jurisdiction or ministry, then the issue should be referred to the lead authority for resolution.</li> </ul>		
15) Characterization of health risks				
HEALTH CRITERIA	DESCRIPTION (Examples)	EXTENT (Population Exposed)	EXTENT (Level of Risk)	
CRITICAL	• Death			
SERIOUS	• Permanent disability			
ADVERSE	• Temporary disability			
MINOR	• Subclinical health effects			

**ISSUE PROFILE SHEET (Continued)**

**16) Characterization of ecological risks**

ECOLOGICAL CRITERIA	DESCRIPTION (Examples)	EXTENT (Effects of concern)	EXTENT (Percent)
<b>CRITICAL</b> Ecosystem structure and function are fundamentally changed; ecosystem is rendered virtually lifeless.	<ul style="list-style-type: none"> <li>• Habitat loss (e.g., loss of wetlands due to agricultural drainage)</li> <li>• Species extinction (e.g., sea mink)</li> </ul>		
<b>SERIOUS</b> Ecosystem structure and function are damaged; species and populations decline and communities change; habitats and abiotic resources are lost; less robust food chain.	<ul style="list-style-type: none"> <li>• Loss of range (e.g., clearcutting).</li> <li>• Decline in species richness and abundance (e.g., reproductive problems of peregrine falcons due to egg shell thinning).</li> <li>• Alteration of trophic structure (e.g., introduction of exotic species).</li> </ul>		
<b>ADVERSE</b> Ecosystem structure or functioning affected; infrequent or intermittent effects; individuals may die but populations are not at risk; habitat is intact; impairment of primary processes; loss of resilience.	<ul style="list-style-type: none"> <li>• Changes in size of nutrient pools, cycling and decomposition processes, energy fluxes.</li> </ul>		
<b>MINOR</b> Ecosystem structure and functions are exposed to stress but system integrity is intact, transitory effects on (habitats), species or individuals.	<ul style="list-style-type: none"> <li>• Spills causing a loss of capacity to store, buffer or neutralize contaminants for a time.</li> </ul>		

**17) Characterization of socio-economic risks**

SOCIO-ECONOMIC CRITERIA	DESCRIPTION (Examples)	EXTENT (Effects of concern)	EXTENT (Percent)
<b>CRITICAL</b>	<ul style="list-style-type: none"> <li>• Permanent decline or loss in the sustainable use of resources.</li> <li>• Communities may be abandoned or population decline.</li> </ul>		
<b>SERIOUS</b>	<ul style="list-style-type: none"> <li>• Reversible decline or loss in use of resources, or substitution or adaptation possible.</li> <li>• Loss of community infrastructure and services.</li> </ul>		
<b>ADVERSE</b>	<ul style="list-style-type: none"> <li>• Decline in resource productivity.</li> <li>• Satisfaction with community life declines - community opportunities are lost or delayed.</li> </ul>		
<b>MINOR</b>	<ul style="list-style-type: none"> <li>• Activities that depend on environmental quality decline temporarily.</li> <li>• Identifiable community nuisances or irritants occur (noise, odour or visibility).</li> </ul>		

SCORE SHEET	
Step 3: SCORING	<ul style="list-style-type: none"> <li>• Use comparative descriptive criteria to rate each risk factor</li> <li>• Multiply sum of criteria scores (Severity x Extent) by Trend to derive Risk Factor</li> </ul>

18) HEALTH	SEVERITY SCORE (S)	EXTENT SCORE (E)	(S x E)
Critical	4		
Serious	3		
Adverse	2		
Minor	1		

Sum of Criteria (S x E) Scores

X Trend

HEALTH FACTOR SCORE

19) ECOLOGICAL	SEVERITY SCORE (S)	EXTENT SCORE (E)	(S x E)
Critical	8		
Serious	4		
Adverse	2		
Minor	1		

Sum of Criteria (S x E) Scores

X Trend

ECOLOGICAL FACTOR SCORE

20) SOCIOECONOMIC	SEVERITY SCORE (S)	EXTENT SCORE (E)	(S x E)
Critical	8		
Serious	4		
Adverse	2		
Minor	1		

Sum of Criteria (S x E) Scores

X Trend

[SOCIOECONOMIC] FACTOR SCORE

**ISSUE PROFILE SHEET (Concluded)**

Comments: Issues may be flagged in any of the following ways to draw important concerns to the attention of decision-makers.

<p>21) Recovery time (reversibility): when the stress is removed or inputs cease, how long it is anticipated to take the system to return to normal (i.e., observed effects will dissipate or fall within an acceptable background range).</p>	<ul style="list-style-type: none"> <li>• Weeks ( )</li> <li>• Years ( )</li> <li>• Decades ( )</li> <li>• Centuries ( )</li> <li>• Indefinite ( )</li> </ul>
<p>22) Scientific uncertainty: about exposure or consequences or data quality or interpretation affecting the degree of confidence in the assessment of the relative risk.</p>	<ul style="list-style-type: none"> <li>• High ( )</li> <li>• Medium ( )</li> <li>• Low ( )</li> </ul>
<p>23) Ability to manage: will assess whether or not: there is enough knowledge of the causes and effects mechanisms; the technology is available or if behavioural change is needed, the method of doing so is available; the benefits exceed the costs; the optimum intervention points, time and duration are known.</p>	<ul style="list-style-type: none"> <li>• High ( )</li> <li>• Medium ( )</li> <li>• Low ( )</li> </ul>
<p>24) Ownership and role: relate to Environment Canada's relationship to the issue: none (another level of government has clear responsibility); indirect (leadership or advisory role based on scientific competence of Environment Canada): shared (other federal or provincial department has specific shared responsibility); and direct (Environment Canada is directly responsible due to legislation or agreements, treaties and accords, etc.)</p>	<ul style="list-style-type: none"> <li>• High - direct role ( )</li> <li>• Medium - shared + indirect role ( )</li> <li>• Low - indirect role only ( )</li> </ul>
<p>25) social equity: extent to which a disproportionate burden falls on an identifiable social group (e.g., Native peoples, the poor).</p>	<ul style="list-style-type: none"> <li>• High ( )</li> <li>• Medium ( )</li> <li>• Low ( )</li> </ul>
<p>26) Public concern: the perceived seriousness of an issue not only includes an objective assessment of the benefits, costs, impacts and effects involved but also an accompanying emotional response which includes feelings of outrage, dread, and fear of the unknown.</p>	<ul style="list-style-type: none"> <li>• High ( )</li> <li>• Medium ( )</li> <li>• Low ( )</li> </ul>

**SUGGESTED OVERALL DECISION MAKING FRAMEWORK – STEPS AND CONTENT**

Group	Steps	Suggested Overall Framework...	Report Methodology...
A	1	Identify and describe environmental issues including determining the contributing proximate cause(s) (pollutants or activities)	1. Scan and scope 2. Screen and characterize
	2	Cluster and Rank issues	3. Score 4. Rank and cluster
B	3	Determine sectoral contribution(s)	Not covered
	4	Determine sector(s)' ability to influence	
	5	Examine intervention points and possible actions	
	6	Compare across all contributing sectors (if multi-sectoral)	
D	7	Select actions	
C	8	Monitor results and recommence the cycle	



Matrix

CASE STUDY RANKING MATRIX							
Case Study	Health					Score H	
	Extent (s8)	Extent (s4)	Extent (s2)	Extent (s1)	x trend		
UVB	8	8	2	8	1.5	162	
Contaminated Sites	1	1	2	4	1.5	30	
Hazardous Chemicals	0	1	2	2	1.5	15	
SMOG – [Industrial Programs]	0	8	8	8	1.5	84	
SMOG – [ecological risk analyst]	0	8	8	8	1.5	84	
Acid Rain	0	4	0	0	1.5	24	
Forest decline	0	0	0	1	1.5	1.5	
Land Degradation	0	0	0	0	0	0	
SMOG – [biostatistician]	2	2	8	8	1	48	
GMO's	0	0	0	2	1.5	3	
Hazardous Air Pollutants	1	1	2	4	1	20	
Wetland Decline	0	0	0	0	1	0	
Exotic Species (Zebra)	0	0	0	0	0	0	
Exotic Diseases (fish)	0	0	0	0	0	0	
Electro Mag. Fields	2	0	0	0	1	16	
Insecticide	0	0	0	0	1	0	
Acid Rain 2	0	0	0	0	0	0	
	Socioecon.					Score S	
	Extent (s8)	Extent (s4)	Extent (s2)	Extent (s1)	x trend		
UVB	0	0	8	0	1.5	24	
Contaminated Sites	2	4	4	4	1.5	66	
Hazardous Chemicals	2	2	4	8	1.5	60	
SMOG – [Industrial Programs]	0	0	4	4	1.5	18	
SMOG – [ecological risk analyst]	0	0	4	0	1.5	12	
Acid Rain	4	2	2	2	1	46	
Forest decline	2	4	2	4	1.5	60	
Land Degradation	0	2	4	8	1.5	36	
SMOG – [biostatistician]	0	0	4	0	1	8	
GMO's	0	1	3	4	1.5	21	
Hazardous Air Pollutants	0	0	2	2	1	6	
Wetland Decline	0	0	0	0	1	0	
Exotic Species (Zebra)	0	0	4	4	1.5	18	
Exotic Diseases (fish)	0	0	4	2	1.5	15	
Electro Mag. Fields	0	0	0	0	1	0	
Insecticide	0	0	0	1	1.5	1.5	
Acid Rain 2	0	0	2	0	1	4	
	Ecological					Score E	TOTAL
	Extent (s8)	Extent (s4)	Extent (s2)	Extent (s1)	x trend		
UVB	0	0	8	0	1.5	0	186
Contaminated Sites	1	2	8	4	1.5	54	150
Hazardous Chemicals	2	2	4	8	1.5	60	135
SMOG – [Industrial Programs]	0	2	4	0	1.5	24	126
SMOG – [ecological risk analyst]	0	2	0	0	1.5	12	108
Acid Rain	1	2	2	1	1	21	91
Forest decline	1	1	1	1	1.5	22.5	84
Land Degradation	0	2	4	8	1.5	36	72
SMOG – [biostatistician]	0	2	0	0	1.5	0	56
GMO's	0	2	2	2	1.5	21	45
Hazardous Air Pollutants	0	1	1	2	1	8	34
Wetland Decline	1	2	2	0	1.5	30	30
Exotic Species (Zebra)	0	0	2	4	1.5	12	30
Exotic Diseases (fish)	0	0	4	0	1.5	12	27
Electro Mag. Fields	0	0	0	0	1	0	16
Insecticide	0	1	2	0	1.5	12	13.5
Acid Rain 2	0	2	0	0	1	8	12

**ENVIRONMENTAL ISSUE FLAGS**

<b>Issue</b>	<b>Uncertainty</b>	<b>Ability</b>	<b>Ownership</b>	<b>Equity</b>	<b>Concern</b>	<b>Status</b>
UVB	low	high	high	low	high	mature
Contaminated Sites	medium	high	high	medium	high	mature
Hazardous Chemicals	low	high	medium	medium	high	mature
SMOG – [Industrial Programs]	low	medium	high	low	medium	mature
SMOG – [ecological risk analyst]	low	medium	high	low	medium	mature
Acid Rain	medium	medium	high	high	high	mature
Forest decline	high	medium	medium	high	high	mature
Land Degradation	high	medium	medium	high	high	mature
SMOG – [biostatistician]	low	medium	high	medium	medium	mature
GMO's	high	high	high	low	high	arising
Hazardous Air Pollutants	medium	medium	medium	medium	high	mature
Wetland Decline	medium	high	medium	high	high	arising
Exotic Species (Zebra)	medium	medium		low	medium	arising
Exotic Diseases (fish)	medium	medium	high	medium	high	mature
Electro Mag. Fields	high	medium	low		high	arising
Insecticide	medium	high	high	low	medium	mature
Acid Rain 2	low	medium	low	low	medium	mature

Sources: Environment Canada, Environmental Protection Service, Response Assessment Directorate, "Environmental Issue Definition and Ranking: A Proposed Methodology for Environment Canada," Hull, Quebec, April 27, 1994, iv-v, 58-63, 17; Conservation & Protection/Ecosystem Sciences/Conservation/Ecosystem Risk Analysis ecological risk analyst, "Setting Priorities for Environmental Issues: Case Studies," October 14, 1993, Figure 3, Figure 4.

APPENDIX 2  
OTHER PROJECT DETAILS

Imperial Oil Project

Proposal Summary

Objectives

- establish national environmental priorities
  - based on comparative risk
- confirm national environmental goals and sequence response strategies
  - based on giving preference to opportunities for the greatest risk reduction
  - within a cost profile Canada can afford
  - build on Green Plan

Expected Outcomes... End '92?

1. methodology to assess comparative health and ecological risks
  - models available
2. prioritized list of environmental threats
  - some useful experiences outside Canada
3. methodology to evaluate costs/benefits of risk reduction options
  - seek least cost path for a range of risk reduction levels
4. action plan to develop cost/benefit relationships for highest priority environmental threats
  - focus effort on critical few

Expected Outcomes... End '93?

5. cost/benefit relationships for the highest priority threats
  - disaggregate costs for analysis (sectoral, regional)
  - identify gaps in science and/or socio-economic impacts for priority research programs
6. prioritized list of national environmental goals and associated response strategies
  - define path of greatest risk reduction benefit on integrated basis within affordable cost profile for nation
  - goals are a function of overall affordability and relative risk reduction benefit/cost ratios
7. process to integrate results into stakeholder decision-making.
8. process to update/realign priorities

Resourcing

- Environment... leads
- [Advisory Committee on Environmental Protection] steers

Source: First Imperial Oil senior manager, overheads for Advisory Committee on Environmental Protection meeting of September 9-10, 1992, "Setting Priorities for Environmental Protection: An Action Plan."

Canadian Petroleum Products Institute Project

Original Process

[CANADIAN PETROLEUM PRODUCTS INSTITUTE]  
ENVIRONMENTAL PRIORITIZATION [sic] MODEL

The [Institute] issue analysis is divided into five categories, in descending order of importance:

1. Health (What are the human health impacts/risks?)
2. Environment (What are the impacts on the ecosystem?)
3. Impacts (What are the socio-economic impacts?)
4. Contribution (What is Canada's contribution to the issue?)
5. Costs (What is the estimated cost for controlling/eliminating the issue?)

Within each category, the following questions need to be answered:

1.0 Health Section

- 1.1 Is the intrinsic health hazard serious?
- 1.2 Is there an established acceptable exposure level?
- 1.3 Are there exceedences beyond acceptable levels?
- 1.4 What percentage of the Canadian population is potentially exposed to the hazard?

2.0 Environment Section

- 2.1 Are the intrinsic environmental hazards serious?
- 2.2 Is there any established acceptable level?
- 2.3 Are there exceedences beyond acceptable levels?
- 2.4 How widespread is the environmental impact?
- 2.5 Is the emission chronic, persistent, or bioaccumulative?

3.0 Socio-Economic Impacts Section

- 3.1 Are there economic benefits to be gained by undertaking controls?
- 3.2 What is the jurisdictional scope of the problem?
- 3.3 How critical is timing in addressing the issue?
- 3.4 Does the issue impact public safety?

4.0 Contribution Section

- 4.1 Is Canada a significant source of the total global emissions/problem?
- 4.2 Are Canadians significantly impacted by global emissions?
- 4.3 Will Canadian emissions have an impact outside Canada?

5.0 General Costs Section

- 5.1 What are the Canadian costs of controlling the issue?
- 5.2 Will controls result in significant impairment of the Canadian standard of living?

For each question, a "weight" value is assigned. Generally, health issues have a weight of "3", environmental issues... a "2", and the remainder... a "1". There is also a "score" ranging from 1 to 10 for each question, with the most serious impacts having a score of 10. Therefore, it is possible to develop a weighted numeric value for each of the above sections which yields an overall numeric value for each issue.

## Proposal Summary

- 1) Scan Canada's identified current or emerging problem areas in which the petroleum [sic] has a role to play and prioritize [sic] those topics from the overall Canadian perspective.
- 2) Identify potential solutions which the petroleum downstream industry might contribute in response to the current or emerging Canadian problems and prioritize [sic] those topics from the industry's perspective.
- 3) Broaden the review of potential solutions to include those of all other relevant stakeholders and a) prioritize [sic] this larger collection of initiatives from the perspective of the cost to Canadians based on cost-effectiveness toward meeting the stated goals, b) develop a strategy which includes a phased implementation of the initiatives, beginning with the most cost-effective solutions.

## Plan

### WORK PLAN

#### Mandate

To more fully develop [the Canadian Petroleum Products Institute's] environmental prioritization methodology... and make recommendations to the [Petroleum Products Industry] Task Force regarding its suitability as a tool for setting environmental priorities in the downstream petroleum industry.

#### Framework

[The Institute's] proposed... Methodology has stimulated considerable discussion among Task Force and [Risk Assessment & Work Prioritization] Working Group members about the difficulties associated with setting environmental priorities. [The Institute's Methodology] should continue to provide the framework for improving this methodology.

#### Tasks and Timelines

##### January 1993:

Identify environmental issues related to the petroleum products industry from the bottom-up (i.e. linked to products and processes, as well as existing government regulations and policies). Develop methodology for assessing the ecological health priorities associated with these issues.

##### February 1993:

Identify other factors which must be considered in setting environmental priorities for the industry (perhaps building on some of the criteria included in the existing [Institute] model such as socio-economic impacts and costs). Review and try to build consensus on the scoring and weights for all the criteria - environment, health and others. Report progress to the Task Force.

##### March 1993:

Undertake a simulation of the revised methodology to test its general acceptability as a tool for setting environmental priorities for the downstream petroleum industry.

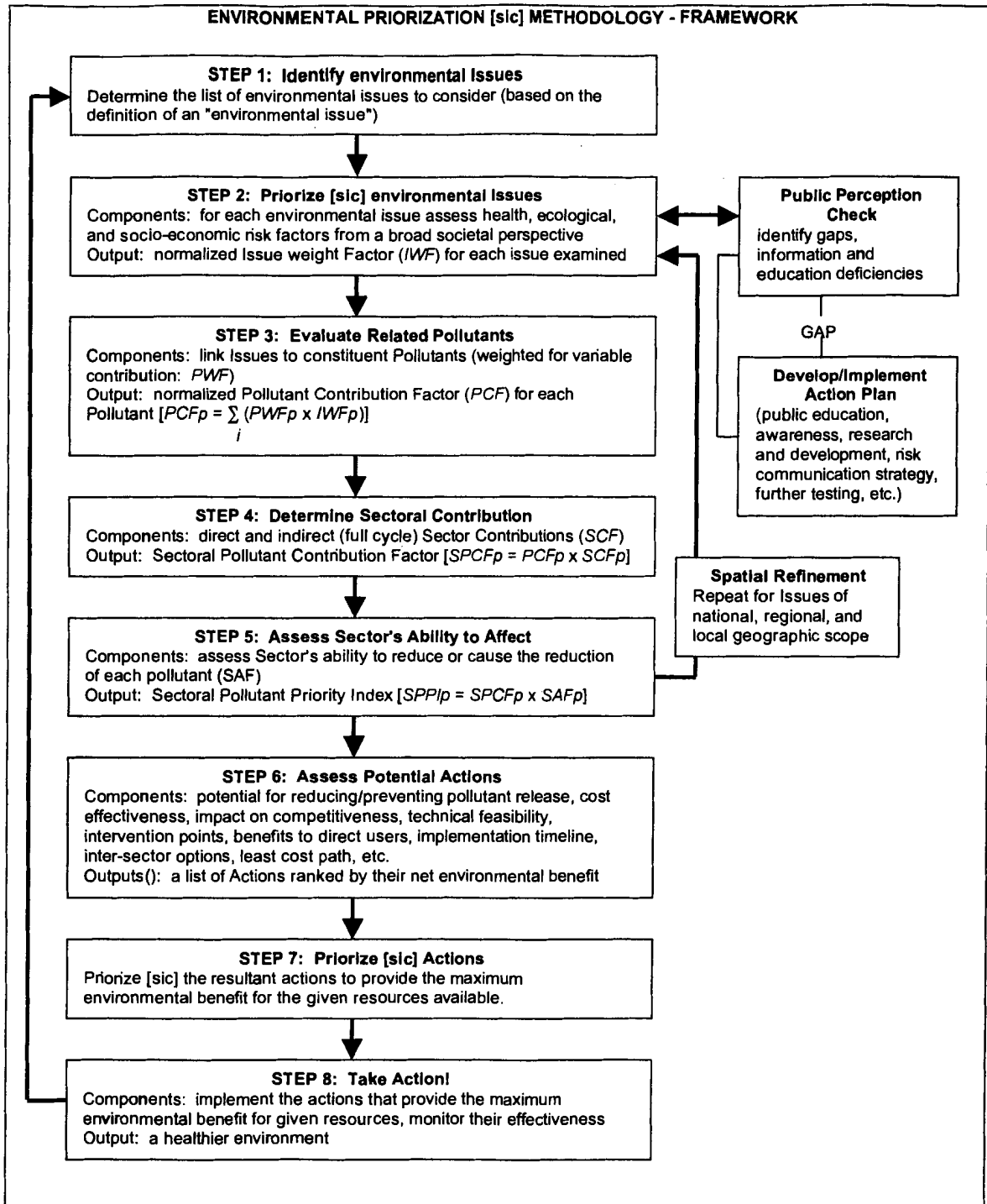
##### May 1993:

Draft report and recommendations to Task Force

##### June 1993:

Review/revise report, based on feedback from Task Force. Final report to Task Force.

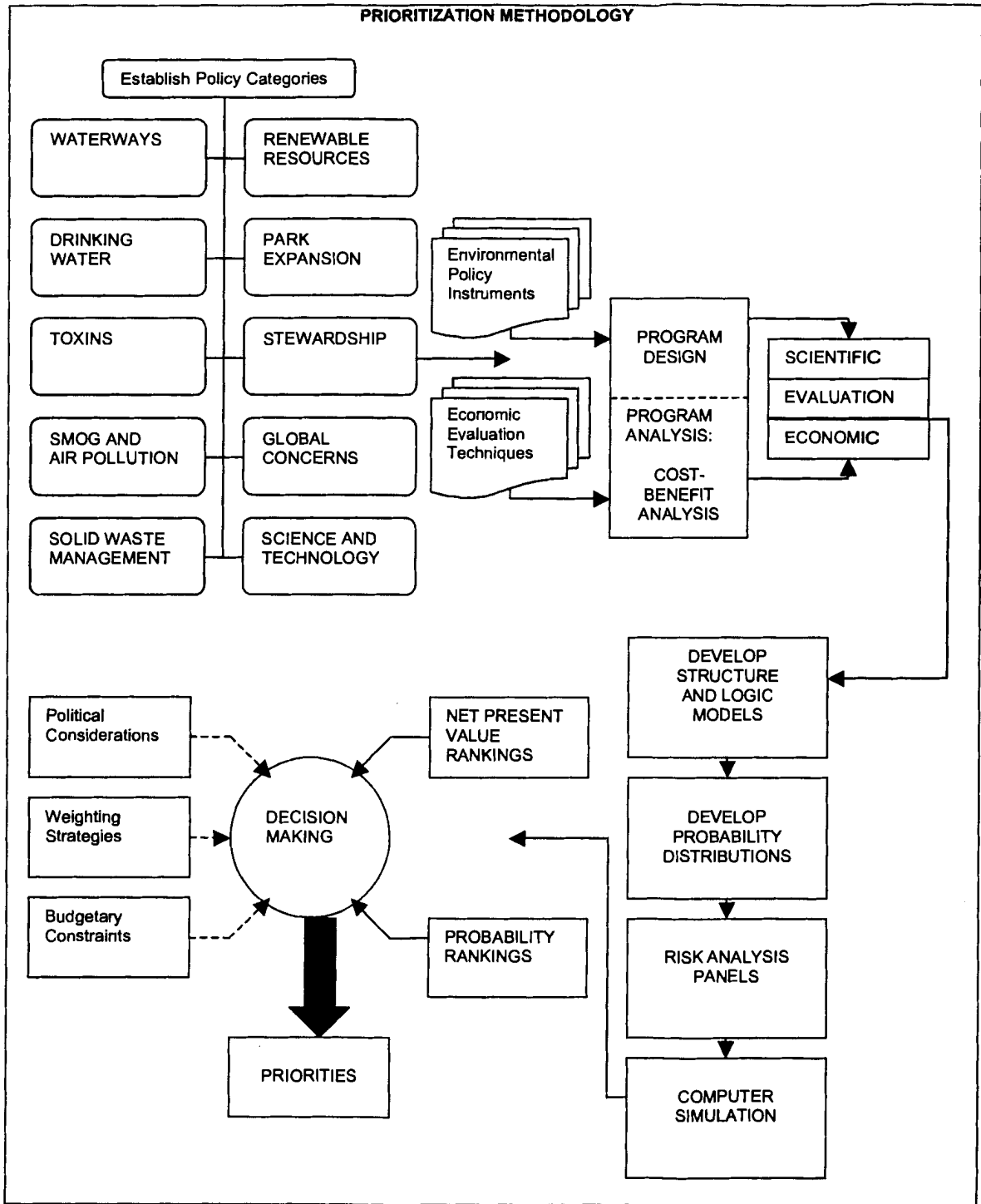
Process



Sources: Environmental Priorities Working Group, "Environmental Priority Setting Methodology," August 1993, Appendix 1, Appendix 2, Figure 1; Conservation & Protection/Ecosystem Sciences director general to Conservation & Protection assistant deputy minister, memo of November 25, 19892, "Priority Setting and Risk Assessment.

Corporate Policy Project

Hickling Process



## Corporate Policy Process

### KEY GENERIC QUESTIONS FOR ASSESSING BENEFITS AND COSTS OF ENVIRONMENTAL INITIATIVES

#### Benefits

- Scope of the initiative:
  - What is the surface of the area considered for protection?
  - What type of adverse effect is reduced or avoided?
  - How does the targeted environmental risk reduction compare with a complete elimination of adverse effects (e.g., to what extent would a 20% reduction of [carbon dioxide] emissions by the year 2010 reduce adverse effects from global warming)?
- Description of the effects which could occur in the absence of action:
  - What environmental changes can be expected?
  - Can most of the environmental effects be classified as effects on human health, ecosystems, equity and economic activity?
  - Are there any other effects which could affect the well-being of Canadians (loss of cultural heritage, changes in landscapes, increase in noise and other nuisances, etc.)?
  - How can these effects be described?
- Severity of the effects in the absence of action:
  - What is the severity of effects on human health?
  - What is the severity of effects on ecosystems?
  - To what extent is equity affected (intergenerational and other)?
  - What is the severity of effects on economic activity?
  - What is the severity of other effects on well-being (social and cultural, etc.)?
- How does this information compare with available data on people's willingness to pay?
- Probability that adverse effects will occur in the absence of action:
  - What is the probability that changes in the environment will occur?
  - What is the probability that there will be adaptation to those changes? For example, adverse effects on economic activity are minor if new activities emerge (e.g., some crops potentially adversely affected by global warming might be replaced by more resistant or more suitable ones)
- Further benefits of taking action (besides above-mentioned reductions in risks):
  - Will the action reduce the costs of other programs? (e.g., measures to reduce [carbon dioxide] emissions can sometimes simultaneously reduce other types of adverse emissions)
  - Will the action result in development of new technologies or new markets?
  - Will the action be used as a model and trigger voluntary initiatives to reduce environmental risks?
  - Will the action affect Canadian industries' competitiveness?
  - Will the action improve environmental data or increase education in the area of sustainable development?

#### Costs

- What is the expected contribution of each [policy] tool [voluntary action, market based alternatives, information disclosure, mandatory obligations, other] used toward the target?
- How much has been or is likely to be spent by Environment... on each tool?
- How much has been or is likely to be spent by other federal departments?
- How much has been or is likely to be spent by provincial government or municipalities?
- How is industry affected? (environment related capital expenditures, operating costs, labour costs, input costs, etc.)
- How are consumers affected?
- Are some of the gains/losses to consumers compensated by gains/losses to producers (or vice-versa)?

Sources: Hickling Corp., "Application of Economic Analysis to the Development of Priorities for Environment Canada," submitted to Environment Canada, Corporate Policy Group, Policy Directorate, Final Report, April 19, 1993, 42; Corporate Policy, "Integrating Economics into Environmental Priority Setting," Draft for Discussion, July 21, 1993.



June Budget Project

Process

QUESTIONS

- Q1: Does legislation require result?
- Q2: If no legal requirement, is there Cabinet directive/direction (e.g., Green Plan) requiring result?
- Q3: Is the result required by a federal-provincial agreement?
- Q4: Is the result required by an international commitment?
- Q5: Does the result contribute to reducing the deficit?
- Q6: Does the result contribute to enhancing competitiveness?
- Q7: Does the result contribute to environmental sustainability?
- Q8: Does the result address a health issue?
- Q9: Does the result address employee or public safety issues?
- Q10: Does the result require direct interaction with the public?

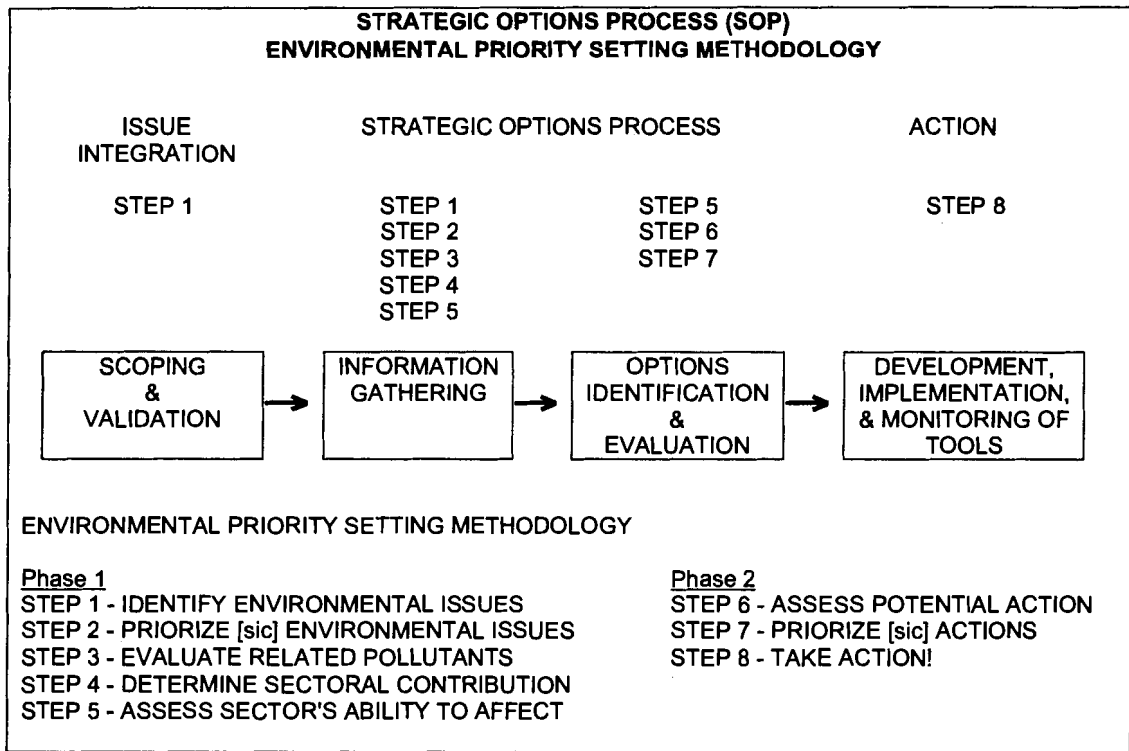
CONSERVATION & PROTECTION/ENVIRONMENTAL PROTECTION DIRECTORS  
INTERPRETATION OF THE QUESTIONS

- I1: Unless the legislation says the Minister "shall or "must" there should be no score for this.
- I2: Our original interpretation was that it is impossible to score on 1 and 2, it was either/or. However, the question apparently has now been rephrased to drop the reference to "if no legal requirement". In this case, we have agreed if it is a single Minister who has provided the direction, it does not score. It must be Cabinet.
- I3: In order to score here, you must have a signed agreement or a [Canadian Council of Ministers of the Environment]-endorsed product.
- I4: In order to score here, you must have a special and specific obligation set out in a Treaty (not simply participation in a working group).
- I5: The yardstick here is "increased revenue." You must be able to demonstrate that the result in fact creates increased revenue.
- I6: No specific interpretation required. But, be prepared to demonstrate the clear linkage.
- I7: We have looked at questions 7, 8 and 9 as a "block". In our view, question 7 relates to environmental health. Question 8 relates to human health and question 9 relates to workplace safety (from the [Environmental Protection] perspective). You must show a direct linkage in order to score.
- I10: Our indication was that all of the [Environmental Protection] results at level III require direct interaction with the public.

Source: Conservation & Protection/Environmental Protection/Operations director to Conservation & Protection/Ecosystem Sciences/Environmental Assessment director, memo of June 18, 1993, "Interpretation of Proposed Criteria for Priority Setting Exercise."

Environment Canada-Canadian Petroleum Products Institute-Strategic Options Project

Process



Source: Environmental Protection/Response Assessment director general and third Canadian Petroleum Products Institute senior director, overheads for Canadian Council of Ministers of the Environment/ Environmental Protection Committee meeting of May 11, 1994, "Strategic Options Process (SOP) Environmental Priority Setting Methodology."

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