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Assessing the Impact Assessment Process of the Ontario Waste Management Corporation

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FOREWORD

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PREFACE

The Canadian Environmental Assessment Research Council (CEARC) was established on January 30, 1984 by the Federal Minister of the Environment to advise government, industry and universities on ways to improve the scientific, technical and procedural basis for Environmental Impact Assessment (EIA) in Canada.

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ABSTRACT

This report provides an initial assessment of the impact assessment process undertaken by the Ontario Waste Management Corporation in its site selection for a liquid industrial and hazardous waste treatment and disposal facility. Although a preferred site for an integrated (incinerator/treatment/landfill) facility in the Township of West Lincoln was announced in September, 1985, the impact assessment and facility plans are still to be reviewed through a public hearing under the Environmental Assessment Act.

Since Ontario generates more than **1.5** million tonnes of hazardous wastes each year, the development of a waste processing facility is a particularly pressing technical and political problem in this province. However, this case also raises questions about assessment procedures which are relevant to other environemntal impacts experienced elsewhere.

Problems of evaluation in social impact assessment are emphasized in this report, and issues related to risk assessment more generally are also addressed, including the role of public participation in "acceptability" decision-making and the practice of ongoing project monitoring.

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1.0 INTRODUCTION

> The hidden agenda in the existing debate over impact assessment, at the levels of both methodology and public policy, concerns the conflict between the technocratic and participatory modes. This agenda is what underlies questions of procedure in methodological arguments and political disputes.
>
> -- Douglas Torgerson
> Industrialization and Assessment (198035)

1.1 THE SCOPE OF THIS REPORT

Any process of environment impact assessment must attempt to take account of the uncertainties related to incomplete information. Some problems of this sort, such as the Ontario Waste Management Corporation's inability to know just how much potentially hazardous waste is being generated by Ontario industry, are surmountable if enough resources are committed to the task of monitoring and measuring. The different problem of not being able to predict the separate or combined impacts of all industrial wastes on the health of living things is also partly a matter of the resources committed to the testing of synthetic toxins, but moreover a matter of our inadequate understanding of ecosystems. Similarly, the problems of assessing social impacts for a particular development project like a waste disposal facility --and the impact of the assessment process itself--owe much to the unpredictable nature of social interaction.

The assessment contained in this report of the impact assessment process followed by the Ontario Waste Management Corporation **(OWMC)** in the site selection for its proposed waste treatment and disposal facility is also based on limited resources, the incomplete information available to an outside observer, and the uncertaintities arising from the fact that the process is not yet complete. Nevertheless, the importance of hazardous waste management as an environmental issue, and the self-proclaimed openness and thoroughness of the OWMC's assessment process, warrant an examination at this stage.

Beyond presenting a brief descriptive account of the OWMC's site selection

and impact assessment process for those unfamiliar with this case, this report attempts to provide a preliminary assessment of the extent to which the OWMC has adopted a technocratic or participatory approach to the task it has been given. The report is primarily, but not exclusively, focused on the assessment of social impacts.

More specifically, this report addresses several of the issues associated with Social Impact Assessment (SIA) that were raised and discussed in two previous CEARC publications (1985a and 1985b). These issues include questions about the practice of community monitoring and compensation as well as questions about the orientation and scope of SIA, including the evaluation of significance or "acceptability."

1.2 APPROACHES TO IMPACT ASSESSMENT

The fact that hazardous wastes from industrial production can have very long-term environmental and social impacts should cause us to adopt a time perspective extending well into the future. The understanding of current impact assessment practices demands an equally extended look at the past.

The earliest roots of SIA can be traced back to the long pre-induistrial period of transition from ancient to modern traditions of social investigation, characterized by the spread of a belief that fact and value can be strictly separated. Reason was increasingly applied to instrumental techniques of social control but no longer to the ends of human action.

The rate of development of "social technology" paralleled the enormous rate of industrial expansion, particularly in this century after the challenge of the Great Depression and the stimulus of the Second World War. Impact assessment has been described as a direct extension of this technocratic tradition, with practice narrowly focused on a specific project rather than on a consideration of the project within a broader social context (Torgerson, 1980).

The dominant, technocratic approach, involving a typically elitist orientation toward "expert" knowledge, has not been the only approach to

SIA practice. Exceptions to the dominant routine,. like the MacKenzie Valley Pipeline Inquiry in Canada headed by (then) Mr. Justice Thomas Berger, are notable because they explicitly rejected a narrow consideration of development issues and included an exceptional effort to make public participation an educative experience for both professional and non-professional participants (Berger, 1977).

It has recently become fashionable to contrast technocratic practice with a more critical approach, alternatively termed a "process approach" (Boothroyd and Rees, 1984), a "political model" (CEARC, 1985a), or "integrated" impact assessment (Harman, 1983). Part of the aim of this newer approach is said to be "consciousness" raising (Gale, 1983; Tester, 1984), but attention to date seems to have remained focused on academic awareness rather than participatory practice.

The critical question about how values are to be treated in impact assessment - how values are to be defined and who is to participate in that process of definition - arises with respect to both SIA and other forms of "risk" assessment focused on environmental impacts. The latter forms of assessment tend to be even more technocratic in orientation than SIA. But even pioneering practitioners of risk awareness like Chauncey Starr have come to admit that assessment is, in practice, very much a political process (Starr, 1985). Public perception of the degree to which important values are being threatened, and public confidence in the ability of risk management agencies to recognize and deal effectively with such impacts, are crucial in determining the "acceptability" of risks posed by industrial development.

1.3 'ACCEPTABILITY" AS A CONTESTABLE CONCEPT

The concept of "acceptability" with respect to the management of risks or probable impacts has the characteristics of an "essentially contested" concept (Gallie, 1956). It is an evaluative concept, the application of which entails judging the desirability of a specific situation. It is also internally complex, involving both this evaluative dimension and the technical calculation or estimation of event probabilities.

Another characteristic of this essentially contested concept is that the criteria or rules of application remain open to reinterpretation. This is not simply a matter of ambiguity or incomplete information. Rather, disputes exist about whether standard criteria such as cost-benefit analysis are even appropriate with respect to some valued situations (Kelman, 1981). Any application of the concept of acceptability entails a fundamental claim about the meaning of the concept.

More simply put, the resolution of "acceptability" questions require both knowledge and consent. Assessment becomes a straight forward calculation only where knowledge is certain and consent complete. But with respect to many social and environmental impacts, knowledge is uncertain and consent is contested (Douglas and Wildavsky, 19825).

With regard to knowledge about the environmental risks related to newer forms of industrial production, it is now recognized that questions can still be posed in terms of probabilities and magnitudes, but frequently they cannot be answered with any degree of scientific certainty. (Weinberg, 1972). This problem of uncertainty also often exists in the case of social change processes and community impacts, unless the indicators used are limited to narrowly defined measures such as direct economic investment and employment opportunities.

One of the few assessment inquiries to explictly reflect this uncertainty was the review of Eldorado Nuclear's proposal for a uranium refinery at Warman, Saskatchewan by the Federal Environmental Assessment Review Office (FEARO). Here the FEAR0 panel rejected the project proposal because the proponent's assessment gave inadequate consideration to community impacts, including possible effects on religious and ethnic traditions (FEARO, 1980). While the panel suggested that knowledge about probable impacts of this type could be objectively determined by the proponent, Eldorado responded that such considerations lay outside established assessment guidelines and were, moreover, "difficult if not impossible, to access (Humphries and Rush, 1980:2).

A lack of certainty undoubtedly contributes to the fact that consent often remains contested. Yet even when knowledge is not doubted or distrusted, there may still be disagreement about the evaluation of predicted impacts. Whenever values are disputed, the tendency inherent in a technocratic approach is to treat the process of evaluation as simply a matter of information gathering or fact finding about values. Community values become defined as individual preferences expressed through opinion surveys or revealed through behaviour.

Alternatively, a more process oriented approach would acknowledge that

> the whole point of personal or social choice in many situations is not to implement a given system of values in light of the perceived facts, but rather to define, and sometimes deliberately to reshape, the values-and hence the identity-of the individual or community that is engaged in the process of choosing (Tribe, 1972:99).

This type of approach to the question about acceptability would have implications for decision making, even where present values are initially accepted at face value:

> If an instrumental anlaysis in terms of present values indicates only marginal advantage in one choice over another, doubts as to what sorts of values and what sort of society one of the choices would yield, linked with doubts as to whether we should become that sort of society (and doubts about how questions like the latter should be approached), might well be given controlling weight (Tribe 1973:659).

An assessment of the particular weighting and weighing procedures used by the OWMC in impact assessment for hazardous waste facility site selection is given in the following sections of this report.

2.0 THE ONTARIO WASTE MANAGEMENT CORPORATION AS PRACTITIONER

> It's gotta be in somebody's backyard.
>
> - Dr. Donald Chant, Chairman
> Ontario Waste Management Corporation (OWMC, 1983a:13)

2.1 EMBRACING THE HAZARDOUS WASTE PROBLEM

Although wastes from industrial production have undoubtedly posed some threat to human health and natural ecosystems since the industrial age began, the hazards of inadequate methods of waste disposal have only been recognized quite recently. It is currently estimated that industry adds to its arsenal of more than 55,000 chemicals at the rate of about 700 new ones each year. In Ontario there are over 16,000 industrial facilities together generating at least 1.5 million tonnes of hazardous wastes, about half the Canadian total (OWMC, 1985b:4).

The rise of public consciousness and subsequent demands for political action regarding hazardous wastes become most apparent after major incidents like the toxic waste landfill leakage at Love Canal in New York State. During the last decade, comparable political impacts from technological system failure have been evident following the radiation leak from the nuclear energy reactor at Three Mile Island, Pennsylvania, the toxic chemical freight train derailment in Mississauga, Ontario, and the deadly gas leak from the Bhopal, India chemical plant. Where public concern, as reflected in the mass media, tends to dissipate, it readily regenerates with the next major failure, as happened most recently with the nuclear reactor explosion at Chernobyl in the Soviet Union.

In Ontario, the continuing problems of landfill leakage into the Niagra River, the recently discovered chemical spills in the St- Clair River, and the spreading impacts of toxic rain have all contributed to making hazardous waste disposal a major environmental issue.

It has been argued that for most of the 1970's the overall decision-making

orientation of the Ontario government with respect to the problem of industrial waste management was one of "defensive avoidance" (Leemans, 1982). Despite enactment of the Environmental Protection Act in 1971, the problem of liquid industrial waste dumping in landfill sites was largely ignored until the later part of the decade when attempts were made to interest private industry in building disposal facilities. After two such proposals for waste solidification plants were dropped because of community opposition, the Government announced in 1980 the formation of the Ontario Waste Management Corporation to construct and manage a disposal facility on crown owned land in South Cayuga. The Ontario minister of the environment would later recall the decision to go with a crown corporation as "a way to get the problem out of the political street" (Leemans, 1982: 70). (In the other province where a similar facility is also being developed, the Alberta Special Waste Management Corporation has supplied crown land for a newwastetreatment plant at Swan Hills, Alberta, which is being built and will be operated by a private company).

Although the Government had exempted the South Cayuga site selection from the necessity of a public hearing process under the 1975 Environmental Assessment Act, one of the conditions given by Dr. Donald Chant for accepting the job of OWMC chairman was that public hearings would still have to be held (OWMC, 1983a:12). Thus, in 1981 a three person (expanded in 1984 to five person) Hearing Panel on Industrial Waste Management was appointed specifically for this purpose.

Environmental groups in the province were generally opposed to the decision not to allow a full hearing under the Environmental Assessment Act, while local opposition was directed more against the site selection itself. Opposition of the latter type has been commonly termed the "Not-In-My-Backyard" (NIMBY) Syndrome, but the label is unfairly applied where public opposition becomes "a logical response to an ill-conceived project" (Armour, 1984:v).

It took only a matter of months for the OWMC board to unanimously decide that the South Cayuga siting proposal had been ill-conceived. The site had

been previously rejected because of its agricultural capability but was reconsidered by consultants at the request of the provincial environment minister and then selected after the criteria were changed to give land use less importance than the transportation cost factor. The final rejection by the OWMC was made on the basis of hydrogeological information which indicated that the site could not provide enough natural containment for a secure landfill.

The decision to turn down this site led to a situation within the OWMC of "internal shock" and wonderment about what to do, according to its chairman, but this eventually served to broaden the organization's horizons "from focus obsession with south Cayuga to the whole province as far as the siting is concerned, selection and technologies and so on" (OWMC, 1983a:6).

In returning to the beginning point of the site selection process, the OWMC also became determined to overcome the type of public hostility the South Cayuga proposal generated. Dr. Chant recognized the need to develop a plan that provided for input before, not after, the major decisions were made, rather than "asking for trouble" by rushing the assessment process and "then justifying the decision later" (Armour, 1984:117). According to the OWMC's director of communications, Michael Scott, this new public involvement strategy also recognized that "there are hundreds of organizations across this province who will never be affected by the site selection effort but who have concerns and a legitimate role to play" (Armour, 1984:194).

The OWMC thus embraced public involvement, but with a clearly instrumental conception of its proper function. The chairman argued that public participation would help the OWMC to avoid a "half-baked plan" and mistakes which could "set the cause of toxic waste disposal back years." Dr. Chant further explained:

> We're not naive enough to think that we won't have opposition. Of course we will. But at least an incredibly large number of people will understand the issue, will have looked over our shoulder and helped us develop our plans. And therefore, for impulse won't

> have to feel that they have to man any barricades, that in fact they have become part of the process. So we think that will expedite the hearing process and probably cut down the chances of emotional opposition (OWMC, 1983a:7, 13).

There are two fundamental questions on which the OWMC has expected all interest groups to come together: the first has to do with need, the second with site selection criteria.

From the outset, the OWMC anticipated widespread public acknowledgement of the need for liquid industrial and-hazardous waste treatment and disposal facilities. This is assumed in the Ontario Waste Management Corporation Act, which mandates the agency "to search, develop, establish, operate and maintain facilities for the transmission, reception, collection, examination, storage treatment and disposal of wastes including sewage" (S.O. 1981, Ch. 21, Section 3(a)).

The choice has been defined as one of either developing major new facilities or continuing to tolerate less adequate treatment and disposal practices, including illegal landfill dumping. The only commercial hazardous waste landfill site in the province near Sarnia recently received approval for expansion from a Joint Hearing (Environmental Assessment and Ontario Municipal) Board, but the OWMC (unsuccessfully) argued that the expanded dump should operate only five years, until its own, more sophisticated disposal technology is in place (Ferguson, 1986; Kidd, 1986).

Both local and provincial environmental groups have challenged the degree to which the OWMC has emphasized disposal needs rather than waste reduction and recycling opportunities. A Memorandum of Understanding with the Ministry of the Environment requires the OWMC to "recycle, reduce, recover and exchange waste; and to stimulate, encourage and assist others to do so" (OWMC, 1984a:7). Based on consultants' reports, OWMC's strategy has been to improve the flow of information about new technologies and markets through industry surveys and an Ontario's Waste Exchange Program established with the Ontario Research Foundation. While critics continue to call for financial incentive programs, the OWMC will be unable to implement any waste disposal pricing policy until its own facilities have been constructed.

The other fundamental question about which the OWMC has presumed considerable public consensus is whether criteria for deciding the "proper" or "best" location can be determined in a relatively straightforward manner. The chairman of OWMC has repeatedly expressed optimism about the prospect that local opposition to site selection proposals can be shifted to where optimization according to environmental standards overrides narrower self-interest concerns (Armour, 1984:118; OWMC, 1983a:14).

2.2 THE SITE SELECTION PROCESS

It took the OWMC almost four years from the time of the South Cayuga site rejection to select another preferred site. This selection process also necessitated a choice of technologies for the treatment and disposal of "special" (liquid industrial and hazardous) wastes. (The OWMC's mandate does not cover "conventional" wastes such as municipal garbage and domestic sewage, or radioactive wastes, which are a federal responsibility). In September, 1985, it was announced the best option was an integrated facility (including rotary kiln incinerator, physical and chemical treatment plant, and landfill for solidified residues) located on a 135 hectare site in the Township of West Lincoln, Regional Municipality of Niagra--some thirty kilometres from South Cayuga.

The declared goals of the OWMC in site selection are the development of a facility which minimizes, in order of priority, the risk to human health, the impact to the environment, and the financial cost to the people of Ontario. At the final selection stage, the OWMC reported that it decided in favour of the West Lincoln site (referenced as LF-9C) over other sites in the Niagara Falls and Milton areas because of lower human health risks. However, more than sixty risk and impact factors had to be weighted and compared before this stage was reached (OWMC, 1985c).

The OWMC initially narrowed its search to the Golden Horseshoe region surrounding the west end of Lake Ontario because that is where an estimated seventy percent of Ontario's "special" wastes are generated. On the condition that hydrogeological tests would indicate suitable sites in this

region, the determining factor became the minimization of the risks and costs associated with transportation. The OWMC noted that this choice of candidate region also happened to be consistent with "the public concern for social justice" in that the risks would accrue to the area which enjoyed the benefits of the waste generating industries (OWMC, 1983b:8, 32). Another publicly expressed social justice concern, that of dispersing the risks among more than one community, was not reflected in the final decision.

After the final group of eight candidate sites were selected from a list of 152 potential sites in 20 candidate areas of the Golden Horshoe, each of the eight locations was subject to further investigation and assessed to determine if there were any major constraints that should lead to rejection. This "basic acceptability analysis" resulted in one site being dropped because of hydrogeological inadequacies. However, "in some disciplines, such as social impact analysis, no clear criterion of this kind could be established" (OWMC, 1985c:5).

The "risk factors" used in comparing candidate sites pertain only to the human health risks from toxic chemical exposure related to transportation, air, surface water and ground water. Threats to the natural environment are included as an "impact factor" along with non-health effects on residents, businesses, community and recreational features, land use, agriculture, and broader social and economic concerns. "Cost factors" pertain to property acquisition and facility construction and operation.

Cost factors were ranked by totalling estimated costs. Risk and impact factors were ranked initially on a scale of one to five, and later one to ten, based on consultants' judgements about safety and suitability. These were determined by considerations of impact probability or uncertainty, frequency and duration, severity and significance, and mitigation potential. Factors considered most significant for site selection decision-making were ranked at level ten.

Risk factors related to toxic chemical exposure, for example, were ranked as highly important (levels eight to ten) but the risk levels associated

with plant operation were said to be low because of the low emission levels predicted. The "predicted" risk levels were also said to exceed "actually expected" levels because the analysis adopted "worst case" assumptions such as daily exposure to maximum contaminant concentration over a thirty year period (OWMC 1985a:67). However, the OWMC's report noted that the issue remains a key concern for residents living near the site, and, in a subsequent discussion of possible health monitoring programs, revealed one reason for such concern:

> There are no standard, scientific procedures accepted throughout the world for monitoring the many contaminants in human populations. This is in contrast to procedures for monitoring simple, single contaminents, such as blood lead levels, which are well-established (OWMC, 1985 a:68).

Public concern about social impacts was reflected in the OWMC's highest possible ranking of population displacement and property disruption factors, and also in their eventual selection of a site which would directly displace the fewest number of residents. With respect to broader community and regional impacts, consultants attempted to assess social stability, social cohesion and community character but found that

> these are social concepts which are difficult to precisely evaluate because they require prediction of the attitudes and behaviour of the residents, which are, in part, influenced by the attitude and behaviour of the OWMC. ... These special impacts can be defined with certainty only after the fact (OWMC, 1985e: 234).

These methodological problems nevertheless influenced assessment recommendations. Social cohesion wasweightedless than social stability because the former was found to be relatively more difficult to assess, although both were largely based on displacement and voluntary migration effects (OWMC, 1985e:235). Community character assessment was based simply on the degree of non-industrial land use, the presence of "heritage sites" (of potential historical or archeological interest), and the visual compatibility or intrusion of the facility for local residents and passing traffic. The consultants note at one point that the analysis was not based on the perceived self-images of the candidate communities because no data

of this type was collected. Yet two pages later the same report states that "percieved compatibility of the facility with community character" did not indicate sufficent differences to allow site compasisons because "the information collected through resident surveys and agency contacts showed that most people believe the waste facility would be incompatible with their community" (OWMC, 1985e: 220,222).

Although the consultants recognized the importance of giving affected residents input into the factor weighting process, they 'had difficulty generating this type of involvement. Several community group leaders, including those from the "Group of Eight" coalition representing residents from the short-listed sites, chose not to participate in this part of the process (OWMC, 1985e:227). The factors of social stability, cohesion and community characters were subsquently ranked quite high by the OWMC because these concerns were repeatedly raised by the public and potentially might affect a large number of people with "more serious impacts than anticipated because of the role of perception" (OWMC, 1985a:Appendix 2). However, the community and regional impacts cited in the final site comparison were narrower factors such as effects on tourism and municipal finances. In part this was because the existance of differences on these factors, however minor, made site comparisons possible.

In general, public involvement in the site selection process has been noteworthy because of its extensiveness and openness, despite the concerns of some groups about whether information supplied by the OWMC is specific or complete enough to allow for an independent analysis of risks and impacts (McLaren, 1984). From the earliest stages of the process, the OWMC has organized a series of public meetings and workshops with local community and provincial interest groups in addition to conducting numerous site surveys and publishing frequent reports.

About six months before the preferred site was announced in September of 1985, a Funding Adjudicator selected by an OWMC-appointed search committee began to distribute funds to community groups which have demonstrated an interest in obtaining an independent review of the OWMC's technical assessment reports. A total of $102,000 was awarded at this stage,

including $81,000 to the Group of Eight coalition (OWMC, 1985e :20; McLaren, 1985:14).

Since the announcement of the West Lincoln site selection, the focus in public involvement programs has shifted to this community. The OWMC has established a new regional office in the area to serve as an information centre and is planning to sponsor a tour of waste treatment facilities in Europe for community representatives. The OWMC has also proposed that citizens from the community be involved in an ongoing community monitoring program the corporation is now planning.

The OWMC has also made a commitment to involve the community in a compensation program to deal with land expropriation issues and with "property va 1 ue protection" for property owners living in close proximity to the planned facilities. However, no property acquisition or compensation will be negotiated until the entire OWMC proposal has been approved following public hearings conducted by the Environmental Assessment Board.

2.3 LOOKING TOWARDS A HEARING

In July of 1985, the new Liberal government in Ontario announced that the OWMC's impact assessment and waste facility proposals would receive a full public hearing under the Environmental Assessment Act and that the special hearingpanel previously appointed would be disbanded. The OWMC chairman, who had been looking forward to a speedy hearing process because of the extensive preparation and public consultation already achieved, said he expected an even quicker response with the assessment board than the special hearing panel because the board had considerable experience and established procedures (Stephens, 1985).

The OWMC is currently in the process of conducting or sponsoring more intensive testing and investigation of the West Lincoln site as preparation for its submission to the Environmental Assessment Board. The specific concerns being addressed include the potential for mitigation or compensation with regard to assessed impacts.

Public consultation programs are also ongoing, involving local residents, businesses, and regional and local officials. The OWMC has promised further funding for community groups at the public hearing stage. In an earlier submissiion to the special hearing panel regarding rules of procedure, the Corporation stated that "perhaps the firmest and strongest tenet of OWMC's beliefs about the review process is that persons who wish to participate and can meet the hearing panel's criteria should be funded" (OWMC, 1984b:6). The major criterion suggested for eligibility was a "demonstrated interest" in the management of liquid industrial waste or hazardous waste in Ontario or in the OWMC's facilities development process.

The Environmental Assessment Board retains the right to specify which persons have an interest in the proceedings and will therefore be considered parties to the preview. It remains to be seen whether interest will be interpreted in broader terms than the traditional pecuniary or proprietary-interest that frequently defines judicial interpretations. Review boards in Ontario have a mixed record of granting standing and funding to intervenors. While Environmental Assessment Board decisions can be changed by the provincial minister of the environment, they cannot be appealed through the courts except with respect to basic procedural standards (under the Statutory Powers Procedure Act).

Both the West Lincoln site which will be the focus of the facilities development proposal submitted to the Board, and a Niagara Falls site which provided somewhat less assurance of natural landfill containment, were considered "acceptable" by site selection consultants (OWMC, 1985c:8). Although the choice, according to the OWMC chairman, was "quite close," the Niagara Falls site will not be considered a "backup choice." If the West Lincoln site is eventually rejected by the Board after the public hearing, the OWMC would "go back and look at the whole site selection process again" (McLaren and Platiel, 1985).

3.0 SIGNIFICANT ISSUES

> The problem of siting waste disposal facilites is far more of a political problem than a technical one.
>
> -- Dr. Harry Parrot, former Ontario Minister of the Environment (Armour, 1984:123).

3.1 TECHNICAL RISK ORIENTATION

Although the OWMC has engaged in a massive public consultation program over the last five years, the emphasis it has given to technical risk calculation seems more typical of a technocratic than participatory approach to impact assessment. While considerable effort has been extended to allow for flexibility in the process of facilities development, the decision-making criteria employed nonetheless reflect a technocratic orientation.

This particular orientation towards resolving the issue of acceptability in waste management facility siting appears to be less contestable here than has been true for agencies dealing with other environmental issues because current waste disposal practices are so bad as to make even technocratic solutions seem desirable. There is little uncertainty that a new waste treatment facility would be a big improvement, and this promise tends to overwhelm other concerns about whether the OWMC's plans are the best choice for Ontario communities. The OWMC's proposals are presented as "optimizing" the selection of facility sites, but they appear to be only "satisficing" with respect to the more fundamental question of what to do about hazardous industrial wastes.

A technocratic approach underemphasizes the degree of uncertainty involved in risk calculation and the implications of this problem. Transportation risks, for example, which became an important consideration in site selection, are very difficult to estimate with any degree of certainty, particularly when past experience is a poor predictor of future

performance , as is true in the transportation of hazardous goods (Norton, 1984:185-186). The problem of uncertainty in estimating a number of the risks included in the impact assessment of siting options is one important reason why some public interest groups continue to argue that the OWMC has not given a high enough priority to encouraging waste reduction.

Despite the major problems involved in achieving quantitative risk estimates, these calculations become the focus of decision-making in site selection. Although considerable uncertianty may exist with respect to impact assessments, quantitative estimates nevertheless permit the comparison of setting options according to some criteria independent of communtiy perceptions and evaluations. It is a more straightforward task to contrast quantitative differences among alternative sites than qualitative ones, especially when the latter are linked to fundamental community values--such as how to treat uncertainty--and therefore may not vary widely. Thus, the selection criteria used by the OWMC to justify the West Lincoln site choice tend to be those on which some quantitative differentiation could be achieved. While this is understandable, given that sight selection was the task at hand, this process reflects the view that such choices are best made on the basis of technical calculation rather than community evaluations.

3.2 EVALUATION OF SOCIAL IMPACTS

The irony of the OWMC's impact assessment process is that technical solutions are sought for what are admittedly political problems. In this case of social impact assessment, factors such as social stability and community character were recognized as important areas of community concern which could be subject to "more serious impacts than anticipated because of the role of perception" (OWMC, 1985a: A-2-16). Although the importance of public perception became a qualifier for the "expert" evaluation of impacts, the difficulties of measurement left the assessment dependent largely on more straightforward quantitative estimations of population displacement. Indeed, the selection of preferred site reflects this particular treatment of social impacts in that the local population figures are simply the lowest of all the sites under consideration.

Other social impact assessment literaturesuggeststhat there are ways to deal with the evaluation of social impacts in a more sophisticated way. The OWMC did seek public input in identifying and ranking issues related to waste management and facility siting, but they did not incorporate these findings at the final site selection stage in the type of issue report that could help decision-makers deal with qualitative social impacts as contrasted with more technical data (Lang and Armour, 1980:104).

Developing improved methods for eliciting values and conducting theoretical analyses of value issues are two possibilities for assisting the evaluation of social impacts (Fischhoff et al., 1981:162; Creighton, 1983). But such efforts are unlikely to be made as long as values are conceived of merely as individual preferences based on emotive rather than cognitive claims. Public opinion surveys alone cannot lead to any determination of "basic acceptabi 1 ity" unless the criterion is to be simple majority preference. And assessments of this type are much more likely to uncover local area hostility to facilities siting than a more sophisticated expression of value positions on underlying issues such as risk uncertainty and long-term management commitment.

There is a risk that public participation can systematically serve to encourage the siting of facilities in those locations where populations are least capable of responding to development proposals or subsequent social impacts (Freudenberg, 1983231). One method of encouraging more effective publ ic participation involves supporting group processes aimed at generating scenarios related to anticipated events and their implications for community values (Harman, 1983). Some studies have shown that community groups who achieve such value-oriented assessments are also capable of taking account of the type of technical consideratrions usually thought to be better left to the experts (Bronfman, 1983). Again, what seems to be working against more intensive, rather than just extensive, forms of public participation in the OWMC case is the conceived role of public involvement as being instrumental to the speedy achievement of a 1 ready established goals rather than being more constitutive of acceptability criteria.

From the perspective of local community groups, on the other hand, any opportunity to oppose facility siting can be seen as instrumental to protecting their own immediate interests. What Donald Chant, the OWMC chairman, has repeatedly called for is the adoption of a less narrowly focused interest cast in terms of the larger provincial community. But this appeal to moral principle requires reciprocation in practice:

> That means, for example, treating a community **as an end** in itself, rather than as a means to some proposed goal, such as siting a facility. If a community is to be asked to act on behalf of the larger, political entity, that entity is obliged to consider its reciprocal obligations to respect the worth of that community operating as a community, by being seen to act in its best interests as well (Timmerman, 1984:15).

The social impact assessment prepared for the OWMC acknowledged that since

> the social impact analysis cannot and should not be seen as an actual forecast of future social conditions ... the social impacts of the OWMC facility siting must be monitored on an ongoing basis and compensation and mitigation mechanisms must be in place to respond to impacts that materialize (OWMC, 1985e:5).

Like other aspects of waste management, the evaluation of social impacts is part of a process that extends beyond the period of waste facility planning and construction. Evaluation must therefore be concerned not only with direct impacts but also with the institutional arrangements which will influence the ongoing organizational and community responses.

3.3 INSTITUTIONAL ARRANGEMENTS

The waste treatment and disposal facility proposed **for** West Lincoln is expected to operate for at least 30 years. The OWMC has declared in principle a commitment to a monitoring program guided by a local monitoring committee including community representatives. The program is expected to "evolve through detailed discussions with the community" but will provide "an opportunity to review appropriate operating data related to the facilities and other possible community-related impacts" (OWMC, 1985c).

The OWMC has noted that other monitoring programs and legal agreements have been reached between major facility operators and local communities.

However, until the OWMC's intended program takes shape, the actual form and extent of community involvement will not be known.

Monitoring programs have sometimes been negotiated as part of larger "community impact agreements" such as the one struck in 1977 betweeen Ontario Hydro and the Town of Newcastle with regard to the Darlington nuclear power plant on Lake Ontario (Shrybman, 1983b:75). As in all compromise agreements,whether achieved through a formal mediation process or another type of negotiation, questions arise about whether the outcomes simply reflect unequal bargaining resources. In the Darlington case, for example, "substantial sums of money changed hands" in return for a willingness on the part of the town to withdraw its objections to exemption of the project from a public hearing under the Environmental Assessment Act (Shrybman, 1983a:109).

A focus on monitoring programs also can undercut discussion of alternatives to development or an examination of the social and moral issues on which opposition is based. Monitoring programs are by their nature an indicator that obstacles to development have been overcome.

Compensation for impacts related to property values, which is the type of compensation being emphasized by the OWMC in planning the West Lincoln facility, can occur at the time of construction or be tied to ongoing monitoring programs. While compensation can alternatively be conceived of as including access to information and other means of control, it is more commonly defined in purely monetary terms.

The Ontario Ministry of the Environment developed a set of "perpetual care' recommendations as part of its 1984 Blueprint for Waste Management. The proposals centred around three forms of monetary compensation related to facility monitoring: (1) environmental impairment insurance; (2) performace bonds or similar financial guarantees; and (3) security funds covering claims not provided for through the first two sources.

In the United States, steps have been taken toward compensating claims regarding hazardous waste related impacts from a "Superfund" administered

by a Toxic Victims Compensation Board (AEI, 1984: 11). In Ontario, the recently proclaimed "Spills Bill" relies on pooled private insurance coverage to cover lossses from spills of hazardous substances, but payment recovery for those parties not at fault will be possible through application to the Environmental Compensation Board (Polanyi, 1985).

Monetary compensation schemes assume a basic commensurability between financial status and other community value impacts. Thus, one of the benefits which the OWMC identified as helping to off-set the negative impacts on community charcter and stability is the projected increases in municipal revenue resulting from payments in lieu of taxes on the new facility (OWMC, 1985d). However, this type of cost-benefit analysis might well remain a contestable, and ultimately unacceptable, procedure for local residents.

A more appropriate institutional arrangement might involve the application of criteria which give local populations a share in decision-making authority rather than simply a share of project financing:

> The solution might be to propose to a recipient community a series of criteria which, if met, would be sufficient to close the facility permanently, no matter what the cost. This would be legally binding on both parties, and would commit the proposer to ripping the facility out of the ground and starting over again elsewhere if X incidents occurred. The package would then have closure built into it, and could be pointed at as evidence of good faith on the part of the proponents. It would also serve to reassure the community that they were, in perpetuity, to be given proper and equal consideration (Timmerman, 1984:17).

While not cited here as an immediate solution to the problems of waste facility siting, this example nevertheless serves as an example of the type of response that encourages local communities to play a role in solving the problems rather than resisting them outright.

4.0 CONCLUSIONS: FROM CALCULATION TO COMMITMENT

The difficulties of drawing any final conclusions about the OWMC's impact assessment process will remain even after a waste treatment site is constructed, whether at West Lincoln or elsewhere. As noted above, the process will be ongoing through a program of monitoring the impacts of facility operation.

Our preliminary assessment, however, does indicate that the process to date has been oriented toward the "expert" determination of impacts, despite a very ambitious series of consultations with private and public interest groups. These consultations have served to keep the public informed about the process of facilities development, and the OWMC has explicitly stated that the pursuit of this goal has been intended to implicate the public in the decisions made -including those to come as part of the public hearing stage.

The Initial Assessment Guide recently published by the Federal Environment Review Office stresses the importance of determining the "threshold of concern" for environmental impacts at which the impacts "take on new importance" (FEAR0 198621). The OWMC's assessments incorporated a similar concept with their "basic acceptability" criteria. The assessment of "importance" or the evaluation of "acceptability" are to be determined by "experts" rather than made subject to community evaluation.

Although technical tasks are no longer seen as absolutely separable from political considerations in impact assessment processes, political "problems" are defined not as opportunities for generating a community-based evaluation but as obstacles to be overcome in the path of development. The political nature of assessment processes is recognized not as a challenge to organizational commitments but as an impediment to straightforward technical calculation.

Despite considerable local hostility to facility siting, the OWMC is advantaged by being able to argue that technical solutions can offer a

considerable improvement over the hazards of current disposal practices. In other areas of environmental impact assessment, the greater contestability of technical forecasts may further contribute to acceptability issues.

The effort that the OWMC has put into preparing its case will likely prove instrumental to achieving final project approval and facility operation, but any further organizational commitment to the communities affected should not be expected to be one of the impacts of this assessment process.

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