

DRAFT ONLY

POLLUTION FROM  
LAND USE ACTIVITIES  
REFERENCE GROUP  
LEGISLATIVE STUDY  
INTERIM REPORT NO.4

TRANSPORTATION  
CORRIDORS

SEPTEMBER 1976.

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FEDERAL CONTROLS

PART II

PROVINCIAL AND  
MUNICIPAL CONTROLS

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I. OVERVIEW

Federal control of water pollution from sediments, nutrients and chemicals associated with the construction, operation and maintenance of pipelines, railways, airports and related development activities within exclusive federal jurisdiction is in its infancy. No comprehensive legislative framework exists to direct departments, agencies or federal crown corporations to adopt the appropriate measures to prevent and abate water pollution from such nonpoint sources. Recent experience with piecemeal legislative and regulatory changes directed to control of water pollution and soil erosion indicates that, with some exceptions, such mechanisms need considerable supplementation and enforcement to be effective. Administrative procedures or directives to federal departments, agencies and crown corporations to control pollution, while of value, still must compete with an agency's prime legislative mandate which often does not speak to environmental matters. Where legislative and administrative policy conflicts develop, such administrative mechanisms, with some exceptions, are inadequate to ensure that water pollution control measures are adopted and appropriately carried out. Where cleanup funds for existing sources of pollution are available this conflict is less pronounced. However, no funds exist for pollution prevention for new federal activities.

Existing federal environmental legislation is generally too narrow in mandate (e.g. fisheries or migratory bird protection) or insufficiently detailed or altogether silent on control procedures which must be followed, to be effective as a nonpoint water pollution control strategy.

## II. GENERAL ENVIRONMENTAL CONTROLS

Federal environmental legislation that has been discussed in previous reports will not be duplicated. For general reference therefore therefore, recourse should be had to previous reports.

### A. Migratory Birds Act and Regulations

The Act is administered and enforced by the Migratory Birds Branch of the Department of Environment.

This convention between Canada and the U.S. for the protection of migratory birds in both countries prohibits any person from depositing or permitting the deposit of oil, oil wastes or any other substance harmful to migratory birds in any waters or any area frequented by migratory birds except under conditions, quantity and type authorized by government Act or regulations. <sup>1</sup> Penalty for the violation of this prohibition, upon conviction may include a fine of not more than three hundred dollars and not less than ten dollars or to imprisonment for a term not exceeding six months or to both fine and imprisonment. <sup>2</sup> If a conviction and fine results from information and evidence provided by any member of the public, one-half of the fine may be paid to that person. <sup>3</sup> The above provisions could be construed to cover a situation where either a pipeline oil spill or other transportation construction or operation phase activity resulted in contamination, including oil and possibly sediments, adversely affecting migratory bird land/water areas. However, the Act does not grant authority to an agency to control the manner in which a pipeline or other transportation corridor activity is conducted to prevent such an occurrence. Moreover, the small amount that can be assessed, even as a maximum penalty is, it is submitted, an insufficient deterrent to controlling such activities in or near sensitive migratory bird land/water areas. It is understood that the Act has been used in the western part of Canada principally in relation to oil exploration activities and bird areas.

## III. OTHER STATUTORY MECHANISMS

### A. National Energy Board Act

#### 1. Purpose and Administration

The purpose of the Act includes the approval and regulation of the construction and operation of oil and gas pipelines and international powerlines. These functions are the responsibility of the Board established under the Act whose members are appointed by the federal cabinet. The Board is responsible to the Minister of Energy, Mines and Resources.

#### 2. Key Provisions

##### (a) Powers of Board

The Board may make rules respecting the procedure for making applications, representations and other matters to it and

the conduct of hearings before the Board. <sup>4</sup> The Board has full and exclusive jurisdiction to inquire into, hear and determine any matter where it appears to the Board that any person has failed to observe any matter required of him pursuant to the Act, regulations or any certificate, licence, permit, order or direction made by the Board or that violations of the above are or have taken place. Where it appears to the Board that circumstance requires it in the public interest, the Board may make any order, direction or approval authorized under the Act, regulations or any certificate. <sup>5</sup> The Board may make mandatory orders for the observance of the Act, regulations or any certificate where activities are being done or are continuing <sup>6</sup> in violation of the Act, regulations or any certificate. <sup>6</sup> The Board's decisions or orders may be enforced as if they were <sup>7</sup> a rule, order or decree of the Federal Court of Canada. <sup>7</sup> An appeal lies from a decision or order of the Board to the <sup>8</sup> Federal Court of Appeal on questions of law and jurisdiction.

(b) Certificates of Public Convenience and Necessity.

The Board has the power to determine the proposed location and may require re-location <sup>9</sup> of proposed pipelines and international power lines <sup>10</sup> and for such purposes may require plans, documents, a description of lands to be affected and any further information it deems necessary. <sup>11</sup> The Board can place terms and conditions on its approvals <sup>12</sup> and such special provisions may include requiring the applicant to take such steps as are necessary during and after the construction of its pipeline to recondition or restore any land through which its pipeline passes and to separate, save and after construction of its pipeline, replace the topsoil on any land through which the pipeline passes. <sup>13</sup> In all such instances, no construction or operation may be commenced until the Board has issued a certificate deciding all matters. <sup>14</sup> The basis of the issuance of a certificate must be the present and future public convenience and necessity. <sup>15</sup> The Board may make orders exempting pipelines or parts or extensions thereof not exceeding twenty-five miles in length, or international power lines, and associated works from Board approval for certain matters including submission of material respecting location of proposed lines and navigable water crossings. <sup>16</sup> Board approval <sup>17</sup> is necessary before a line is abandoned by a company.

(c) Intervenors and Public Hearings

When the Board considers an application for a certificate, it must also consider the objections of any interested person. The decision of the Board as to whether a person is or is not an interested person is conclusive. <sup>18</sup>

Hearings before the Board with regard to the issue, revocation or suspension of certificates or licences, or for leave to abandon the operation of a pipeline or international power line must be public. The Board may hold a public hearing respecting any other matter

if it considers it advisable to do so. <sup>19</sup>

(d) Revocation and Suspension

The Board, with the approval of the federal cabinet, may revoke or suspend a certificate if any term or condition has not been complied with or has been violated. No such order may be made unless notice of the alleged non-compliance or violation has been given to the holder of the certificate and the Board has afforded him an opportunity to be heard. <sup>20</sup>

3. Key Regulations Rules and Procedures

a. General Environmental Impact Assessment Information Requirement

Information which must be filed by applicants for certificates respecting international power lines and oil and gas pipelines includes an assessment of the probable environmental impact of the pipeline including a description of the existing environment and a statement of the measures proposed to mitigate the impact. <sup>21</sup>

b. Environmental Provisions for Gas Pipeline Construction and Operation

(i) General Design and Installation Criteria

Gas pipeline owners and operators must ensure that construction and operation of pipelines do not interfere with the quality of soil and water. <sup>22</sup> Prior to gas pipeline construction, investigations must be undertaken to determine ground conditions along the proposed pipeline route and the capacity of the soil to support vegetation following disturbance. River and lake bottom conditions must be evaluated to determine the potential incidence of bottom erosion and silting pollution that will result from the installation of the pipeline at such crossings. <sup>23</sup>

(ii) Matters Relating to Control of Construction Activities

Construction contractors and subcontractors must be instructed on the requirements of all conservation laws, rules and regulations applicable to the construction area. This is to be ensured by the applicant for a certificate. <sup>24</sup> Excavation of materials, the disruption of established natural drainage or the disturbance of natural vegetation cover from construction work must be minimized. <sup>25</sup> Where such disturbance of ground by construction work occurs, the applicant company must restore the area to prevent erosion and, where practicable must employ specified erosion control measures as long as such measures do not disturb substantial areas of stream beds or appreciably degrade water quality. The company must further ensure that



all disturbed areas are stabilized before the site is left. Such stabilization measures shall include vegetation, seeding, planting or mulching or by placement of mat-binders, soil-binders, rock or gravel blankets or structures.<sup>26</sup> Other conservation measures which the company must ensure include the practice of good forest management in respect of cutting and removal of trees; protection of fish spawning beds from sediment from all sources associated with construction work or rehabilitation thereof.<sup>27</sup> Pesticides and herbicides may not be used on the right-of-way without prior written approval of the Board.<sup>28</sup>

Pipeline construction must be inspected to ensure that the pipeline is being constructed in accordance with the regulations. Such inspection must be performed by the applicant company or its authorized agent and must not be performed by the construction contractor or his authorized agent.<sup>29</sup> Inspectors must be competent in their fields of supervision or inspection.<sup>30</sup> Where the Board has appointed officer(s) for inspecting pipeline construction and receiving, considering and deciding in-the-field applications for changes to the design, construction, testing, operation and maintenance of the line, the officer must, upon receipt of a written application for any such changes consider and decide upon the application and give a written copy of his decision to the applicant. The applicant may appeal such decision to the Board. No decision of an officer or of the Board on an appeal may permit or be construed as permitting the company to change design, construction, testing, operation or maintenance of its pipeline so as to contravene the provisions of the regulations regarding same.<sup>31</sup> Board officers, where they are of the opinion that a company is not complying with the regulations,<sup>32</sup> must in writing inform the Board and company of their opinion.

(iii) Other Pollution Prevention and Control Measures

The applicant company must employ pollution prevention and control measures to minimize the pollution effect of the operation of its pipeline and must take reasonable steps to prevent the pipeline operation from causing the erosion of soil; the deterioration of vegetation, and the damage to fish and wildlife.<sup>33</sup>

(iv) Accident Reporting

An applicant company must inform the Board of incidents including leaks, breaks in the pipeline,<sup>34</sup> and follow-up reports must include a description of the dispersal of escaped substances, particularly in relation to soil and natural waters.

B. The Railway Act

1. Purpose and Administration

The purpose of the Act is the approval and regulation of the construction,

tion, operation, maintenance and abandonment of railways. Railway companies who engage in the above are subject to the sanction of the Canadian Transport Commission and its Railway Transport Committee. The Minister of Transport has principal responsibility for the Act and its administration to Parliament.

2. Key Provisions

a. Powers Respecting Construction of Railways

Construction of railways or parts thereof may not be commenced until the general location has been approved by the Commission, nor until the plan, profile and book of reference have been sanctioned by the Commission.<sup>36</sup> All watercourses to be crossed or affected must be shown in such plans.<sup>37</sup> Such watercourses, rivers, streams, drains must be restored as nearly as possible to their former state if they are diverted or altered.<sup>38</sup> The Commission may authorize deviations from the established or proposed routes,<sup>39</sup> or may by regulation or order exempt a company from the requirement of submission of plans.<sup>40</sup>

b. Matters Incidental to Construction

The construction of railway or ancillary works over or in navigable waters or on the beach of such waters is under the supervision of the Commission and the cabinet. The powers of the Commission in such circumstances include powers to order construction on such terms and conditions as it deems expedient; capacity to give directions respecting the supervision of any such work; capacity to make alterations in plans and specifications submitted to it as necessary. All such orders are to be directed toward securing the protection, safety and convenience of the public.<sup>41</sup> Companies constructing railways must make and maintain suitable ditches and drains for areas surrounding the railway, to connect with ditches, drains and watercourses upon the lands through which the railway runs.<sup>42</sup> The Company must annually remove all noxious weeds along the right-of-way.<sup>43</sup>

c. Carrying Dangerous Commodities

Railway companies and passengers may not carry dangerous goods except in conformity with the regulations made by the Commission.<sup>44</sup>

d. Offences and Penalties

Orders of the Commission that are disobeyed make the offending company upon conviction liable to a penalty of not less than twenty dollars and not more than five thousand dollars. Officers of the company may also be liable to such penalty.<sup>45</sup> Every

railway company that fails to comply with cabinet or Commission directives respecting matters incidental to construction, including directions as to construction of bridges is subject to a two hundred dollar per day forfeiture for every day<sup>46</sup> after the expiry date set for compliance by the Commission. Every railway company that fails to remove noxious weeds along the right-of-way is subject to a two dollar per day penalty for every day during<sup>47</sup> which such failure continues after weeds have matured to seed. Every company that carries dangerous goods except in conformity with Commission regulations is liable to a five hundred dollar fine for each such offence.<sup>48</sup> Persons are subject to two thousand<sup>49</sup> dollar fines and to imprisonment not exceeding two years.

3. Key Regulations

a. Transport of Dangerous Commodities by Rail 50

These regulations generally prescribe Commission requirements respecting packaging, marking, labelling and other matters relating to the safe transport of dangerous commodities by railway.

Dangerous commodities are listed, specifications for shippers and carriers detailed, procedures for accident reporting outlined and commission inspections and investigations authorized. Pre-publication of and public hearings on proposed regulations may also be undertaken by the Commission.<sup>51</sup>

C. Atomic Energy Control Act

Principal provisions of this statute have been outlined in previous reports.

Further provisions respecting transport of radioactive materials include; the AECB may regulate the transportation of prescribed radioactive substances.<sup>52</sup>

1. Key Regulations

a. Shipping Radioactive Prescribed Substances

No one may ship any radioactive prescribed substances unless the shipment complies with the requirements respecting packaging and labelling and any other requirements prescribed by any body having jurisdiction by statute over the proposed mode of transport; or by the Canadian Transport Commission, if no requirements have been prescribed by any other statutory body. The AECB may exempt any shipment of radioactive prescribed substances from CTC requirements upon such conditions as the AECB may specify. 53

D. Ministry of Transport and Airports

As the owner and operator of all or most national airports, the federal Ministry of Transport has the power to construct and permit the construction of airports and airport runways and to oversee their operation and maintenance.<sup>54</sup> As such the Ministry has the implied power to adopt measures to control water pollution from such facilities both in their construction and operation phases. Ministry and related agency activity in this area will be discussed below.

E. Transportation of Dangerous Goods(Proposed)

It is understood that consideration is being given to introduction of a bill respecting dangerous goods transportation by truck and other modes. Its purposes would include promotion of the public health and safety and protection of the environment from the transport of such goods. Mechanisms are understood to include provision for the promulgation and enforcement of uniform safety standards and procedures for carrying or handling such goods. Administration of the Bill would be the exclusive responsibility of the Transport Ministry. No other information as to the contents of this Bill is available at the time of writing.

IV. NON-STATUTORY ACTIVITIES

A. Environmental Assessment and Review Process and Guidelines on Pipelines, Transmission Lines, Airports and Related Development

General discussion of the Environmental Assessment and Review Process (EARP) has been undertaken in previous reports. In summary the process is intended to apply to all federal departments and agencies for projects or groups of projects initiated by the federal government, or where federal funds are solicited, or where federal property is required. Federal proprietary crown corporations and regulatory agencies are invited to participate.<sup>55</sup>

Because the process has no basis in law, its success as an environmental protection mechanism rests on the good will of the above noted entities. For example, departments are responsible in first instance for screening all of their projects or groups of projects for potentially adverse environmental effects. If they find on the basis of existing information, if any, that no adverse environmental effects will result, their decision is determinative of the issue and no further reference to EARP required. No administrative appeal from such a determination is outlined in the procedures. A second finding that the department or "initiating agency" may make is that it does not know what the environmental effects will be. If this is the case the EARP envisions that the department or agency will prepare an "initial environmental evaluation" to assess significance. For the purposes of this stage, the Department of Environment has prepared a series of guidelines for the use by other government departments and agencies in preparing initial environmental evaluations.<sup>56</sup> These guidelines cover such areas as oil and gas pipelines, electrical power trans-

mission lines, railways and airports. The guidelines generally suggest that the initiating agency outline the proposal including its construction, operation, maintenance and abandonment phases, state of the existing environment, including aquatic environment to be effected, and the significance of the impacts expected and the anticipated mitigation measures to be undertaken. The guidelines clearly anticipate that the initiator will address matters respecting water<sup>57</sup> quality impact and protection from such land use activities. Like the first phase, however, the EARP acknowledges that the initiator will decide on the significance of the environmental effects. If the initiator does not consider these effects significant, the project may proceed as planned without further reference to EARP. No administrative or other appeal procedure from such an initiator determination is outlined in EARP. The initiator is expected to implement the appropriate environmental design measures to mitigate adverse environmental effects identified in the I.E.E. 58 No description or procedures are outlined in EARP to ensure that such measures will be followed. Third, if the initiator makes a finding that significant environmental effects are involved with a proposal, the matter is referred to the Chairman of the Department of Environment, Environmental Assessment Panel. The Chairman arranges for the establishment of a review panel, which must include a member of the initiating agency. This group is responsible for issuing further guidelines to the initiating agency for the preparation of a full environmental impact statement. The guidelines are available to the public, unless otherwise directed by the Minister of Environment in consultation with the initiating Minister(s). The resulting impact statement and panel report recommendations to the Minister may be made available<sup>59</sup> to the public unless otherwise directed by the Ministers. Public meetings may also be held by the Panel though this is obviously contingent on whether the guidelines and the impact statement have been made public.

Responsibility for surveillance and monitoring based on Ministerial decisions and the Panel recommendations are to be assumed by the "appropriate" agency. This usually results in Environment and the initiating agency having joint responsibility for such matters. However, the details of such surveillance and monitoring are not outlined in the EARP. The Department of Environment and the initiating agency are expected, though, to keep the Chairman of the Environmental Assessment Panel informed of how Ministerial agreements arising out of or based upon Panel recommendations are being carried out. The EARP is silent on whether such reports may be available to the public.

A further important issue is the relationship of EARP procedures to matters coming under the legislative jurisdiction of regulatory agencies such as the National Energy Board. This will be discussed further below.

#### B. Other Guidelines

Other guidelines respecting environmental, including water quality, matters arising from airport or pipeline development, have been

or are being developed by the Department of Environment as well as other government departments and agencies. The relationship of these guidelines to each other, to those noted above, and to mechanisms established by agencies with exclusive jurisdictional or proprietary control, both in circumstances where environmental assessments are required and where they are not required, is complex, if not ambiguous. For example, the Department of Environment has also drafted guidelines on gas pipeline development, distinct from the guides noted above.<sup>60</sup> These are understood to be distinguishable from the above guidelines in that they are design oriented and could presumably be used on "non-major" projects. However, the National Energy Board has also prepared environmental guidelines for applicants for construction and operation of oil and gas pipelines.<sup>61</sup> There are also NEB gas pipeline regulations which, as legislatively authorized, would supercede any non-statutory instruments, including guidelines.<sup>62</sup>

The federal Ministry of Transport is also developing guidelines relating to environmental protection in the environmental assessment, design, construction and operation of airport facilities. These guidelines also include sections on preventing soil erosion and surface and ground-water pollution from new and existing airport facilities.<sup>63</sup> There are also several internal Transport manuals respecting various aspects of construction of airport facilities and environmental and other matters.<sup>64</sup>

Site specific guidelines for proposed airports have also been developed or are in the process of being developed.<sup>65</sup><sup>66</sup>

### C. Control and Abatement of Pollution From Federal Facilities

The control of water pollution from existing federal facilities is authorised by Cabinet directive.<sup>67</sup> The main elements surrounding the directive have been outlined in previous reports. Abatement of water pollution from airports which are federally owned and operated, for example has been a facet of the program. Studies of airport problems have generally revealed for example, that aircraft de-icing activities are a major source of pollution to surface drainage; fueling and defueling operations are a contributor to surface drainage pollution through spills; and the application of urea for airfield de-icing results in contamination of storm-water runoff.<sup>68</sup> Recommendations for remedial measures have included stormwater management including collection, storage and treatment of contaminated runoff from airport facilities. Further studies respecting treatment of urea contaminated runoff have been urged.<sup>69</sup>

#### Comment

##### Pipelines

Despite the existence of the Environmental Assessment and Review Process, federal jurisdiction with respect to environmental measures

that must be followed by pipeline companies, rests with the National Energy Board and not the Department of Environment. The Fisheries Act <sup>70</sup> theoretically would permit of an interpretation that the federal Minister of Environment could require plans and specifications from anyone, presumably including pipeline companies proposing to construct works, which might adversely effect waters frequented by fish through the deposit of deleterious substances. The act has not been used in such manner to date. However, at least one Fisheries Act prosecution has been undertaken in relation to construction activities. The trial court held that silt deposited by a bulldozer stirring up a river bed was a "deleterious substance." The Court of Appeal however reversed the trial court on the following grounds: First, the Court of Appeal held that the essential quality of a deleterious substance must be that it is harmful to fish or to the use of fish by humans. The Appeal Court found that in the instant case there was no evidence that the silt was harmful to fish. Secondly, whereas the trial court had held that fish eggs were included in the Act's definition of fish, the Appeal Court was of the opinion that the Fisheries Act as drafted did not disclose an intention to protect fish eggs per se from deposits of deleterious substances including silt. While evidence at trial indicated that silt was harmful to fish eggs, there were no fish eggs in the stream at the time of the alleged offence. (Fish egg gestation taking place normally at a different time of year). <sup>71</sup> It is understood, that amendments to the Fisheries Act will include fish eggs and aquatic habitat in the definition of fish. In any event, the use of the Fisheries Act for requiring plans and specifications prior to the commencement of construction activities, including construction of pipelines, would have to be done in cognizance of the above constraints.

However, because of the essentially exclusive jurisdiction of the NEB, its environmental mandate on its face and as applied will be emphasised in the remainder of commentary here.

As noted above, current Board rules of practice and procedure require that an applicant for a certificate for a pipeline or transmission line must submit three types of information respecting environmental aspects of the proposal. First, a description of the existing environment to be effected; second, an assessment of the probable environmental impact of the proposal, and; third, <sup>72</sup> a statement of the measures proposed to mitigate the impact.

The Act, rules of procedure and regulations are silent, however, on the weight, if any, the Board will give to such matters. Moreover, nothing in the Act, rules or regulations requires or obligates the Board to take these factors into account in their deliberations. The Board has stated though that its policy is to satisfy itself that the construction and operation of pipeline facilities approved by it will not cause environmental impact or pollution in excess of the limits set by those agencies with primary responsibility for such matters. To this end the Board expects pipeline companies to provide information and to adduce evidence on any applicable environmental requirements or standards of federal and provincial agencies that they would be required to meet and also on the status of or plans for their compliance with such standards. <sup>73</sup>

While recognizing that environmental factors are important, the Board

also states that such factors will only be taken into account in deciding pipeline applications, "to the extent that they are deemed relevant by the Board."<sup>74</sup> Because the above points to the considerable discretion the Board has in determining how much weight it will give to environmental considerations and what measures it will require be observed for meeting environmental concerns it is instructive to view the Board's environmental mandate in practice, in the context of recent pipeline applications.

A recent proposal before the Board involved an application by Interprovincial Pipe Line Limited (IPL) for a certificate granting it leave to construct a 520 mile extension to its existing pipeline from Sarnia, Ontario to Montreal, Quebec. The applicant, as well as numerous intervenors including the province of Ontario, provided evidence on environmental aspects of the proposed pipeline and on the policies, practices and procedures to mitigate the environmental impact of the pipeline. In many ways the single most<sup>75</sup> discussed aspect of the application was its environmental impact. Nearly half of the Board report to the federal cabinet on the project<sup>76</sup> was taken up with commentary surrounding environmental issues. Environmental concerns surrounding construction activities and mitigation measures were especially brought home to the Board by the Ontario Ministry of Energy which co-ordinated the Ontario intervention. Included in the Ontario brief were submissions that construction crews be educated with respect to environmental concerns and that specific instruction and supervision be given to ensure that procedures are followed; that timing constraints for construction be detailed especially for water course crossings; that refueling and maintenance be carried out in approved areas and in such manner as to avoid infiltration to the water table or runoff into water-courses; that Ontario make available at provincial expense, qualified persons to be seconded to the National Energy Board to supplement the inspection staff of the Board under the direction of the Board respecting environmental and related matters; or that additional inspectors be appointed<sup>77</sup> by the National Energy Board respecting environmental matters.

These matters were also clearly brought out during testimony and cross-examination before the Board. For example, the following exchange between the Ontario Ministry of Energy counsel and the environmental consultant for the applicant indicates that those involved in the hearing including the applicant, the intervenors and the Board, were fully cognizant of the measures that were likely necessary to ensure environmental, including water quality, protection during construction:

Mr. Rogers : One of the things you have said a number  
(Counsel, of times and I think you refer to it in  
Ontario Mini- the submission, is that a lot of on site  
stry of decisions will have to be made.  
Energy).



- Mr. Duncan :                   That is right.  
(Environmental Con-  
sultant for the  
Applicant)
- Mr. Rogers:                   That some of the environmental problems can only  
be handled right on the site?
- Mr. Duncan:                   Right.
- Mr. Rogers:                   Therefore it is important that you have somebody  
along with the crews who has an understanding  
of environmental problems and, more importantly  
I suppose, environmental solutions. Is that  
right?
- Mr. Duncan:                   Yes, that is right.
- Mr. Rogers:                   That is what you meant when you said "responsible  
and effective action in the field is of primary  
importance"?
- Mr. Duncan:                   That is right.
- Mr. Rogers:                   That is one of the essential things for  
protecting the environment in the construction of  
this pipeline?
- Mr. Duncan:                   Too many of these environmental studies get  
involved in huge baseline inventories and then  
it stops there and people assume that the construc-  
tion operators in the field will read the literature.
- Mr. Rogers;                   But that does not always happen, does it?
- Mr. Duncan:                   Not exactly.
- Mr. Rogers:                   No matter how well intentioned the company may be  
sometimes these good intentions do not get  
translated down to one or two contractors.
- Mr. Duncan:                   Briefing of contractors is a useful exercise. 78

The Board, in approving the application, made a number of observations and rulings including: details of mitigative measures for preventing or minimizing erosion, siltation and deterioration of water quality during river crossing construction should be available to the Board and intervenors for review at the time of hearing into planning and scheduling of construction of facilities; the applicant should have environmental experts attached to each construction spread; construction contractors must be instructed by the applicant to follow the advice given by the environmental experts and where such advice is not capable of being followed, the Board must

be notified; the Board's staff will inspect the construction of the pipeline to ensure that the Board's environmental requirements are met; applicant contingency plans must incorporate environmental requirements; environmental inspection by the applicant in the years following construction is expected in order to observe conditions, and advise on such remedial or maintenance work as may be required. 79

Despite the seeming surfeit of environmental requirements annexed to the approval for construction, federal provincial and local agencies recorded subsequent in the field departures from such requirements. For example, Environment Canada observers noted at various times construction contractor failure to implement effective temporary soil stabilization and erosion control techniques with resulting sedimentation and further soil disruption due to increased need to used heavy earth moving equipment; bank erosion and slumping at stream crossings of the pipeline; failure to clean up or rehabilitate soil contaminated by an oil spill five months after the occurrence; failure to remove accumulated mud and material from tracked vehicles before crossing streams; refueling of vehicles directly in or adjacent to watercourses and dumping of empty fuel cans into such waters, and; general lack of environmental awareness on the part of construction and rehabilitation crews. 80

Similar observations were made by the Ontario Ministry of Environment in its field observations of the pipeline's construction. 81

Local agencies and conservation authorities also indicated that they were not informed or consulted by the construction contractor prior to commencement of construction or river crossings in their jurisdiction or before NEB approved environmental practices were changed. 82 Local municipalities had urged during the hearings that the NEB require the applicant to consult with concerned municipal and conservation authorities. 83

Environmental agencies involved in field review for this project argued that these problems stemmed principally from two interrelated factors. First, lack of construction contractor understanding of the necessity for environmental constraints. (Despite the fact that they had been amply warned of these matters during the hearings). Second, apparent lack of NEB inspectors continuously on site with exclusive responsibility for environmental matters. (It is understood that frequently construction took place without the presence of any NEB inspectors since the latter worked a shorter work week. Moreover, the NEB inspectors that were available were understood to have responsibility for all facets of the construction activity including safety, welding and engineering, in addition to environmental matters). 84

Many of these problems appear to be endemic to current practices related to pipeline construction throughout North America. 85

It is submitted that at least the following matters ought to be requirements under the Act and/or regulations and not merely be discretionary with the Board on a case by case basis: (1) authorization of environmental inspectors from the Board or environmental agencies to ensure that environmental guidelines are being followed (2) authorization for environmental inspectors to issue stop and/or clean-up orders if environmental guidelines are not followed (3) authorization for inspector's reports to be made available to the public at Board or other approved offices at the end of each month of the project's life.

In addition, general prohibition and offence penalties ought to be introduced in the Act and regulations such that when environmental provisions in the regulations, orders or Certificates are violated they are subject to remedy at law. Currently the Act and regulations do not have such general prohibitions, offences or penalties. The only offences or penalties currently prescribed in the Act relate to violations of financial or safety matters.<sup>86</sup>

It is further submitted that environmental bonds ought to be required of applicants that are commensurate with any costs of governmental clean-up or rehabilitation necessitated by construction contractor failure to meet environmental constraints. In addition or in the alternative, where construction contractors display a pattern of violation of environmental constraints, future federal loans, grants, contracts, licenses or certificates should be denied such operators for specified periods.<sup>87</sup>

General oil pipeline regulations with environmental provisions should be promulgated similar to existing gas pipeline regulations.<sup>88</sup>

Finally, it is submitted that the relationship between the EARP process and the NEB regulatory authority should be clarified. While the NEB regulatory mandate is such that it has wide discretion to receive and consider information relevant to a proposal, the NEB is the final arbiter of which environmental constraints it will adopt. Moreover, since other federal regulatory agencies, such as the Canadian Transport Commission, have similar discretion and decision-making authority, it is submitted that federal environmental policy as conceived in the EARP process, is not uniformly applied since it is subject to varying interpretations and degrees of adoption by each regulatory authority with a different legislative mandate. It is further submitted that NEB regulatory procedures (and indeed those of all other federal departments, agencies and crown corporations) should conform as a general rule to a statutorily authorized federal environmental policy embodying general EARP procedures respecting protection of the environment from all federally owned, supported or regulated construction activities. Such a process would have the virtue of standardizing federal environmental protection measures and responses.<sup>89</sup>

## Railways

Control with respect to railways, other than railways operated wholly within a province, resides with the federal government.<sup>90</sup> Thus, both private corporations and proprietary crown corporations operating interprovincially would be under Ministry of Transport and Canadian Transport Commission jurisdiction. Relevant case law on the issue confirms that the federal government has exclusive jurisdiction in regards to the construction, operation and maintenance of such interprovincial railroads. Thus, provincial and local laws are inapplicable.<sup>91</sup>

The above discussion respecting the Railway Act indicates that the generality of the statutory language is such that the Railway Transport Committee of the C.T.C. would be able to prescribe water pollution prevention and abatement measures pursuant to terms and conditions of licences and through the regulations. As noted above, all railways must submit plans and profiles to the RTC before they may proceed with new activities.<sup>92</sup> The one exception to RTC jurisdiction is the Canadian National Railways. The CNR requires a direct order-in-council approval from the federal cabinet on the recommendation of the Ministry of Transport.<sup>93</sup> Discussion with Railway Transport Committee officials, however, indicates that currently the RTC does not require or recommend procedures to control water pollution from construction, operation or maintenance of railways.<sup>94</sup>

The principle responsibility in this area has thus fallen to the Environmental Protection Service of Environment Canada with respect to clean-up of existing and prevention of future pollution problems. Of special interest in the area of railways and pollution control is the relationship of EPS to CNR. CNR, as a proprietary crown corporation, has extensive rail facilities in the Great Lakes Region. It is required under special Act to obtain the approval of the federal cabinet by order-in council on the recommendation of the Ministry of Transport before it may construct, maintain and operate railway lines, branches and extensions if the line, branch or extension does not exceed twenty miles in length, and; in any other case, if Parliament has, in respect of the construction, authorized the necessary expenditure or other guarantee.<sup>95</sup> Except in the case of CNR order-in-council submissions, however, Environment Canada has no direct oversight over CNR. The federal Treasury Board currently requires CNR to have an environmental impact statement from Environment Canada for such order-in-council submissions. It is understood that because CNR, as a proprietary crown corporation, and therefore in competition with private enterprise, is only invited and not required to enter its proposed projects into the EARP process, those proposals not needing an order-in-council approval are essentially left up to the discretion of CNR as to whether they will be entered into the EARP process or not. Current CNR environmental policy includes, however,

ensuring in all company operations the provision of such protection of the environment as is appropriate, technically feasible and economically practicable; and reducing over a period of time (undefined) air, water, soil, sight and noise pollution to a level equal to or below the standards set by the responsible government agencies.<sup>96</sup> The above policy notwithstanding, CNR has recently successfully opposed having to comply with conservation authority dump, fill and construction regulations. The CNR argued that such provincial enabling legislation, regulations and rules are ultra vires (beyond the power of) the province as they<sup>97</sup> purport to operate in an area of exclusive federal jurisdiction.

Despite the lack of Environment Canada regulatory and approval authority over railway environmental, including water quality, protection practices, it has undertaken report, inventory, abatement and assessment initiatives. Since 1971, it has issued at least three inventory inspection and assessment reports of CNR pollution problems in Ontario,<sup>98</sup> and is currently undertaking a fourth.<sup>99</sup> Environment Canada recommendations arising from such pollution inventories have included the need to control and immediately clean-up fuel oil and other spills; use of drip trays and interceptors at oil fueling stands; clean-up of oil saturated water; replacement of contaminated top soil; minimizing use of oil for dust control; control of erosion sedimentation and contaminated runoff from existing facilities. To 1974, remedial measures by CNR had been taken at at least ten of its facilities arising from such federal environmental reports. It is understood, however, that CNR sets its own priorities with respect to which measures it will adopt and under what time-frame. At least five CNR order-in-council submissions have had environmental assessments at EPS initiative.<sup>100</sup> These have usually involved spur line, car loading and industrial development facilities. Recommendations for minimizing erosion and sedimentation during construction, operation and maintenance of such facilities have been included and incorporated into such planned expansions. However, on at least one occasion, CNR has used its review from Environment Canada as an argument shielding it from having to comply with provincial regulations<sup>101</sup> respecting the dumping, filling or constructing of works.

It is submitted that as Environment Canada does not have approval authority over such railway pollution problems, and cannot satisfy itself as a regulatory agency could that measures it directs for water pollution control will be adopted, it has the worst of two worlds; responsibility and no authority. It is submitted that recommendations made in the previous section respecting statutory authorization of an EARP-like process would alleviate some of this problem.

Airports

Control of land use within airport property is within exclusive federal jurisdiction. <sup>102</sup>

Proposed major airports or airport expansions in Ontario, are being preceded by comprehensive environmental studies as part of the EARP process. These studies have or are in the process of reviewing water quality protection measures which will be necessary during the construction, operation and maintenance of such facilities should they be approved. Such measures are understood to include appropriate nutrient, sediment, erosion and storm water controls. <sup>103</sup> Because the current proposals in the EARP process are not yet at the approval stage, it is not possible to detail how the proper adherence to such environmental constraints will be ensured, especially, during the construction stage. For example, while it is possible to postulate that proper sediment and erosion control will be attached to construction contract documents or specifications, recent experience in other areas of major construction activity indicates that supplementary mechanisms may be necessary. <sup>104</sup> However, it is understood that at least monitoring programs for tracing environmental effects at every stage of the proposed projects have been recommended.

Proposals in EARP form a small percentage of total airport construction projects planned to 1982. In Ontario, for example, construction projects that have been determined by the Ministry of Transport to require an "initial environmental evaluation" (IEE) form approximately 2.5% of total airport construction projects to 1982. Nationally, 2.3% of Ministry of Transport planned airport construction projects have been determined by Transport to require an IEE. <sup>105</sup> The figures nationally and for Ontario are outlined in Table 1.

TABLE 1

PLANNED AIRPORT CONSTRUCTION PROJECTS \*  
1976-1982

REGION	Total Number PLANNED	Total Number REQUIRING IEE
CANADA	1048	24
ONTARIO	117	3

Source: Environment Division, Canadian Air Transport Administration  
(CATA) Ministry of Transport and Environmental Assessment  
Panel, Department of Environment, Ottawa.

\* Figures are for planned airport construction projects in CATA, MOT plans as of August, 1976, exclusive of equipment.

It is arguable that the cumulative effect on the environment of the many smaller construction activities associated with the expansion of the airport program will be as significant as the few major projects which will receive detailed environmental scrutiny. CATA proposed guidelines indicate that appropriate measures for erosion and water pollution control will be incorporated into contract documents and specifications.<sup>106</sup> The same comments may be raised here respecting the necessity of supplementary mechanisms for smaller projects as were raised in earlier discussion.<sup>107</sup>

With respect to existing water contamination problems from airport runoff, studies are currently being undertaken to develop a methodology for minimizing the environmental impact from the application and use of urea as an airport runway de-icing agent. Study results are expected in September 1977 from investigations at airports in British Columbia.

#### Transport of Dangerous or Radioactive Materials by Road and Rail.

Dangerous commodities are defined by the Canadian Transport Commission to include explosives, compressed gas, flammable liquid, flammable solid, oxidizing material, poison, radioactive or corrosive material. It is understood that under the Railways Act, apart from handling, shipping and packaging requirements under the regulations, there is no requirement under terms and conditions of approvals, or under the regulations for the type of clean up procedures which must be followed in the event of a release of a dangerous commodity to the environment. There is also no requirement in law for a company carrying dangerous goods to have an approved or any contingency plan in the event of a spill or other release of dangerous goods to the environment. It is understood that the proposed Transport of Dangerous Goods Bill will not require an approved or any contingency plan for trucking or multi-modal carriers.

Carriers have, however, adopted some form of plan in many instances. The CNR, for example, notes that it is company policy to initiate containment and clean-up procedures at the scene of accidental spillage originating from CNR operations.<sup>108</sup> Upon a spill occurring, among the information requirements regarded as necessary for dispatch to appropriate regulatory agencies include whether material has escaped to a waterway or poses a threat of doing so.<sup>109</sup>

With respect to incidents and accidents involving the transport of dangerous commodities, Table 2 outlines figures for the last four years.



TABLE 2

TRANSPORTATION ACCIDENTS-INCIDENTS INVOLVINGDANGEROUS COMMODITIES \*1972 - 1975

		1972	1973	1974	1975
TOTAL NUMBER OF INCIDENTS INVOLVING DANGEROUS COMMODITIES **		34	35	43	32
TOTAL NUMBER OF TRAIN ACCIDENTS INVOLVING RELEASE OF DANGEROUS COMMODITIES TO THE ENVIRONMENT	BY DERAILMENT	1	6	2	16
	BY COLLISION	1	0	0	1
	AT CROSSINGS	1	0	0	0

Source: Railway Transport Committee, Canadian Transport Commission, Ottawa.

\* Figures are a summary of accidents-incidents reported to the CTC, March 1976.

\*\* Other than in train accidents.

Figures compiled by or for the RTC normally do not indicate the amount of material spilled as compared with the amount of material cleaned up. As such, it is generally difficult to determine how much material may be lost to watercourses through either direct discharge or drainage following following incidents or accidents. With some exceptions, RTC figures only emphasize causes of accidents (such as improper packaging or defective containers) and casualties (killed or injured). Environmental agencies have more recently begun to compile figures respecting amount and type of material spilled and recovered from the environment. <sup>110</sup>

As noted above, the transportation of radioactive materials is controlled through the Atomic Energy Control Regulations. These regulations require that such materials be packaged, labelled and shipped in accordance with regulations promulgated by the appropriate transportation authority, or, in the absence of such regulations, with the regulations of the Canadian Transport Commission, or with such requirements as the Atomic Energy Control Board may prescribe. Canadian regulations for the transportation of radioactive materials, as well as similar regulations by most other countries, are based on the "Regulations for the Safe Transport of Radioactive Materials" published by the International Atomic Energy Agency. It is understood that the Transport of Dangerous Commodities by Rail Regulations essentially adopt the IAEA criteria for packaging, preparation for shipment and shipment of radioactive materials. Future revisions to the CTC transport regulations will also be based on the IAEA regulations. <sup>111</sup> Under the IAEA regulations, all packaging must meet defined performance criteria which, in the case of significantly hazardous types and quantities of radioactive materials, includes retention of shielding and containment capability under severe accident conditions. <sup>112</sup>

The AECB acts as the regulatory authority for road transport of radioactive materials. It is understood that the Board applies either the IAEA or Railway Transport Committee regulations as appropriate. In addition to acting in a regulatory capacity for road transport of radioactive materials, the Board serves as the technical advisor to the regulatory authority for rail (RTC). It is understood that this role involves the evaluation and certification of packaging designs and shipping procedures, regulatory liaison with designers, shippers, carriers and transport facility operators, the investigation of transportation accidents involving radioactive materials, and the review and recommendation of revisions of the regulations.

It is estimated that there are approximately 60,000 shipments per year in Canada of radioactive materials, exclusive of shipments of uranium and thorium ores and chemical concentrates. An estimated 9,000-27,000 (15 to 45 per cent) of these shipments are made by truck or van. <sup>113</sup> Table 3 outlines the number of road and rail incidents or accidents involving radioactive materials in Canada between 1957 and 1973.

TABLE 3.

RADIOACTIVE MATERIAL ACCIDENTS-INCIDENTS BYMODE AND LOCATION1957 - 1973

MODE	TRANSIT	TERMINAL	TOTAL
ROAD	17	3	20
RAIL	1	1	2
OTHER *	10	8	18
TOTAL	28	12	40

Source: Atomic Energy Control Board, Ottawa. 114

\* Refers to sea and air modes.

During this period none of the above accidents or incidents have been reported as having released radioactive material to watercourses, either directly or indirectly. At least four accidents or incidents were reported as having released radioactive material to the ground in a manner which resulted in negligible runoff. <sup>115</sup> AECB officials feel that a requirement making reporting of amounts of material lost and recovered after a spill or other incident would be onerous. This view is adopted principally because of the small amounts of radioactive material lost during transportation mishaps. Moreover, transportation of radioactive materials generally, is not regarded by AECB as a serious concern relative to its other regulatory responsibilities (e.g. licencing of reactors, disposal areas or mining applications). This is apparently due to the generally small quantities involved and the low specific nature of transported materials. Indeed, because of the existence of the CTC and its regulatory apparatus and standards set by international agencies such as the IAEA, the AECB has not created a radioactive safety committee to advise it on transportation matters, as it has for mining, disposal or reactors. It is further understood that transportation aspects of a radioactive disposal site are not made part of AECB application requirements. Transporters are expected to meet CTC regulations for handling and carrying of such materials but do not have to further outline their methods of transport to the AECB in conjunction with radioactive waste management site, mining or other proposals. <sup>116</sup>

#### V. AGREEMENTS AND CONTINGENCY PLANNING

As part of the Canada-U.S. Agreement on Great Lakes Water Quality, both parties agreed to maintain in force the Joint U.S.-Canadian Oil and Hazardous Materials Pollution Contingency Plan for the Great Lakes Region (hereinafter Plan or Joint Contingency Plan). <sup>117</sup> The purpose of the Plan is to provide co-ordinated and supplementary responses to pollution incidents in the Great Lakes System by the appropriate governmental agencies. The three-fold objectives of the plan are (1) to develop appropriate preparedness measures and discovery and reporting systems for pollution incidents; (2) to institute measures to restrict area affected by a spill; (3) to provide appropriate equipment as needed.

The regional department of Environment contingency plan undertakes to fulfill the above measures for the Ontario Great Lakes Region, <sup>118</sup> in co-ordination with other federal and provincial agencies. <sup>119</sup> The federal government

also has responsibilities under the Ontario Contingency Plan and for dealing with spills originating at federal facilities. The Environmental Emergencies Branch of DOE has principle responsibility and co-ordinates activities respecting (1) contingency planning (2) training, and (3) identification of ecologically sensitive and high risk areas. The information normally required by the EEB in the event of a spill includes nature of material spilled, volume, duration, area affected, spill mobility, weather conditions and control action. 120

The Centre of Spill Technology is responsible for technological development of counter measures to deal with spills of oil and other hazardous materials. Its two principle responsibilities include: (1) testing, evaluation and development of counter measures, equipment and techniques to combat spills of oil and other hazardous materials, and (2) the design and development of various countermeasures and systems for specific high risk and sensitive areas.

As part of the Federal Clean-up Programme at federal facilities, federal operations are expected to deal with environmental emergencies through (1) appropriate notification (2) containment and (3) clean-up where they are involved in spills.

Pursuant to the Ontario Plan, the DOE Environmental Emergencies Branch and DOE must assume a lead role when spills originate (1) at federal facilities or other facilities which fall under federal jurisdiction (2) affect or threaten to cross international or interprovincial waters (3) or when chemical dispersants are used.

NOTES

1. R.S.C. 1970, c. M-12 as amended and Pollution Regulation SOR 71/376 as amended, s. 35
2. s. 12(1) of the Act
3. s. 12(2)
4. R.S.C. 1970, c N-6 as amended s. 7
5. s.11
6. s.12
7. s.15
8. s.18
9. ss. 27 and 37
10. s.42
11. ss. 29, 35 and 41
12. s. 46(1)
13. s.46(2)
14. ss. 26, 27, 40, 44
15. s.44
16. s.49
17. s.63
18. s.45
19. ss. 20(1) and (3)
20. s.47
21. National Energy Board Rules of Practice and Procedure. SOR /72-413 as amended. Draft Guidelines are currently being considered to flesh out this requirement.
22. National Energy Board, Gas Pipeline Regulations. SOR /74-233, s.4
23. s.5
24. s.22
25. s.23
26. s.25
27. s.26

28. s.29. This section must be read in conjunction with s.78 of the Act which requires removal of noxious weeds along the pipeline right of way.
29. s.41
30. s.42
31. s.45
32. s.46
33. s.69
34. s.85
35. s.86
36. R.S.C. 1970, c. R-2 as amended, ss.107 and 111
37. s.109
38. s.103
39. ss.111 and 119
40. s.119
41. s.189
42. s.208. Terms and conditions for the construction of drainage works surrounding telegraph or telephone lines may be made by the Commission as well. s.318(9)
43. s.219
44. ss.295 and 296
45. s.343
46. s.351
47. s.358
48. s.384
49. s.383
50. S.O.R. /74-456 as amended. Also known as C.T.C. General Order No. 1974-1-Rail as amended.
51. Part 71
52. R.S.C. 1970 c.A-19 as amended
53. SOR /74-334, s.23
54. For example, Toronto International Airport, See also, the Aeronautics Act RSC 1970, c-A-3 and the Department of Transport Act R.S.C. 1970, c. T-15 and the National Transportation Act, R.S.C. 1970 c.N-17 as amended.

55. The E.A.R.P. was first authorized by cabinet directive in December, 1973. It is an administrative procedure not a requirement in law.
56. Guidelines for preparing Initial Environmental Evaluations  
issued by the Chairman of the Environmental Assessment Panel, September 1976.
57. See, for example, IEE guidelines respecting oil and gas pipelines and airports.
58. EARP: Procedures and Responsibilities, Part III
59. Ibid
60. Department of Environment, Environmental Protection Service, Environmental Guidelines for Gas Pipeline Development, July 1975. (draft)
61. National Energy Board. Environmental Information Guidelines for Pipelines, May 1976. (Draft)
62. Supra, note 22
63. See, for example, Ministry of Transport and its Canadian Air Transport Administration guidelines, Airport Environmental Protection Design, December 1975. (Draft)
64. Ibid, page 2. These include manuals produced by the Building Structures Division, the Surface Structures Division, the Mobile Support and Stationary Equipment Division and the Utilities Division.
65. Department of Environment, Environmental Protection Service, Environmental Guidelines for the Construction and Operation of the Pickering Airport, November 1974. These include subsections on appropriate erosion and sediment control plans prior to construction.
66. Airports proposed for Windsor and Hamilton are being subjected to environmental assessment requirements which include evaluation and proposed implementation of sediment and erosion control measures should the facilities be approved.
67. Government of Canada, Cabinet Committee on Government Operations, Directive on "Control and Abatement of Pollution by Federal Activities - Cleanup and Prevention", June 8, 1972.
68. See, for example, Environment Canada. A study of Environmental Problems at Toronto International Airport, July 1975.
69. Ibid
70. R.S.C. 1970, c F-14 as amended (by 1ST Supp. c.17) See Report No. 1 for a fuller discussion.
71. Regina Vs. Stearns Rogers Engineering Co. Ltd. (1973) 2 W.W.R. 669 (B.C.) reversed by (1974) 3 W.W.R. 285 (British Columbia Court of Appeal)
72. Supra, note 21
73. Supra, note 61



74. Ibid
75. See, Carruthers, "New Pipeline Route is Plagued by Problems About Environment", Toronto Globe and Mail, October 12, 1974.
76. National Energy Board. Report to the Governor in Council in the matter of the Application under the National Energy Board Act of Interprovincial Pipe Line Limited, May 1975.
77. Submission of the Minister of Energy for Ontario as Intervenor before the National Energy Board respecting the Application by Interprovincial Pipe Line Limited for a Certificate of Public Convenience and Necessity to construct a Pipeline Extension from Sarnia, Ontario to Montreal, Quebec, May 1974. Excerpts from the appendices of the Ontario submission are reproduced in Appendix 1 of this report.
78. In the matter of an application by Interprovincial Pipe Line Limited for a certificate of public convenience and necessity before the (National Energy Board). Transcript of proceedings, Volume III, pages 223-224, May 1974, Ottawa
79. Supra, note 76
80. Interview with R. Gwilym, Environment Canada, July 1976, Toronto. Mr. Gwilym field observed and filed periodic reports on the IPL construction from approximately November 1975 to June 1976.
81. Ministry of Environment, Environmental Approvals Branch. Status of Interprovincial Pipe Line Limited Construction, May 1976.
82. See, for example, Hamilton Region Conservation Authority Report to its Executive Committee regarding the Interprovincial Pipe Line stream crossing and resulting sedimentation to Spencer Creek, December 4, 1975.
83. Submission of the Regional Municipality of Waterloo, Supra note 76 at pages 38-39.
84. Supra notes 80 and 81
85. See, for example, Halloran "House Investigators Doubt Alaska Pipeline will Open on Time", The New York Times, September 5, 1976. Environmental problems recorded in the construction of that pipeline have included "unnecessary erosion" and "excessive" oil spills from construction machinery.
86. See, for example, s.57 (discrimination); s.86 (gas and power exports and imports); s.88 (other financial and accounting matters) and; s.39 (protection of property and safety matters).
87. Such a policy recommendation is made, for example, in the Ontario Inter-ministerial Task Force on the Human Environment: Toward an Environmental Action Plan", June 1974 at page 74.
88. The NEB gas pipeline regulations, including their environmental provisions, would have been inapplicable to the IPL application as it was for a crude oil pipeline, except insofar as the Board re-adopted such gas pipeline regulation requirements into the IPL certificate. It is difficult to know exactly what IPL was required to adhere to, however, as the Board did not prepare a detailed list of those undertakings for which IPL was responsible for meeting. This failure was criticized by provincial environmental agencies Supra note 81.

89. Such a Bill was recently proposed in Parliament. See "An Act to protect the Canadian environment by instituting mandatory impact assessment procedures prior to the construction of installations potentially damaging to the environment." (Private Members Bill - Mr. Wonman). House of Commons, Order Paper No.9, October 22, 1976, 30th Parliament, Second Session, Ottawa.
90. The British North America Act 1867 as amended ss.92.10(a) and (c) which say in part: In each province the legislature may exclusively make laws in relation to matters coming within the classes of subjects next enumerated:
  10. Local Works and Undertakings, other than such as are of the following classes:-
    - a) Lines of Steam or other Ships, Railways, Canals, Telegraphs and other Works and Undertakings, connecting the Province with any other or others of the provinces, or extending beyond the limits of the Province;
    - c) Such Works as, although wholly situate within the Province, are before or after their Execution declared by the Parliament of Canada to be for the general Advantage of Canada as for the Advantage of Two or more of the Provinces.
91. See, for example, C.P.R. v. Notre Dame de Bonsecours (1899) A.C.367 R. v. C.S.L.Limited (1960) O.W.N. 277, (1961) O.W.N. 89 (County Court) and R. v. C.N.R.(1975) 4 C.E.L.N.7. (Provincial Court of Ontario (Judicial District of Hamilton Wentworth)).
92. See General Order No.E.1 of the Canadian Transport Commission respecting the filing of maps, plans, profiles and books of reference which must be received by the Commission.
93. See, for example, CNR Order-in-Council, Privy Council of Canada, P.C.No.1967-205 respecting bridge construction and related facilities.
94. Interview with H.G. Hibbard, Director of Rail Services, Railway Transport Committee, Ottawa, September, 7, 1976.
95. See, for example, Canadian National Railways Act, R.S.C. 1970c. C-10 as amended s.22.
96. Statement of C.N.R. Environmental Protection Policy (1975).
97. R.v.C.N.R.(1975) 4C.E.L.N. 7. The prosecution, undertaken by the Hamilton Region Conservation Authority for C.N.R. failure to obtain a permit, was rejected by the provincial court on grounds that dumping fill and track construction were matters falling under the term "construction, operation and maintenance of a railroad", and as such, were matters falling under s.92.10(a) of the BNA Act and relevant federal legislation.

98. See "Inventory Inspections and Assessment of Pollution Problems of C.N.R. Facilities, Great Lakes Region" August 1971; "Inventory Inspections and Assessment of Pollution Problems CNR, St. Lawrence Region", August 1972; and "Inventory Inspections and Assessment of Pollution Problems Prairie Region, Lakehead Area" June 1973.
99. Inventory Assessment of CNR begun in fiscal year 1975 to run to 1977.
100. To February, 1974.
101. Supra note 97, and; Written Argument Presented on Behalf of Canadian National Railway Company Relevant to a Charge Brought Against it Under the Conservation Authorities Act and tried in the City of Hamilton Before His Honour Judge Morrison, April 9, 1975. By Solicitors for CNR, pp 1 and 2.
102. Johanneson v. West St. Paul (1952) 1S.C.R.292; Orangeville Airport Limited v. The Corporation of the Town of Caledon (1975) 90.R.(2d) 7.
103. This is understood to be the case for at least the Hamilton and Windsor airport proposals.
104. See pipelines commentary.
105. Projects for which initial environmental evaluations are performed do not necessarily go on to require full environmental assessments. See discussion under EARP, supra.
106. Supra note 63.
107. Supra note 104 and text discussion on pipelines.
108. See, for example, CNR Plan for Handling Train Accidents Involving Dangerous Commodities, May, 1976.
109. Ibid.
110. This is true, for example, of the Environmental Emergencies Branch of Environment Canada and the Contingency Planning Section of the Ontario Ministry of Environment.
111. IAEA regulations revised 1973 Edition.
112. Atomic Energy Control Board Annual Report 1974-1975.
113. J.M.Jardine, Scientific Advisor, Transportation, Atomic Energy Control Board, Transportation of Radioactive Materials, undated.
114. See J.M.Jardine, Scientific Advisor, Transportation, AECS, Transportation Incidents Involving Shipments of Radioactive Material in Canada 1957-1973, presented at the 4th International Symposium on Packaging and Transportation of Radioactive Materials, September 1974, Miami, Florida.

115. Ibid.
116. Interview with M. White, transportation advisor, AECB, Ottawa, October 14, 1976.
117. Great Lakes, Water Quality Agreement, 1972, Annex 8.
118. See Federal Department of Environment (Ontario Region) Contingency Plan for Oilspills and Other Hazardous Materials.
119. For example Ministry of Transport for Canada, and Ontario Ministry of Environment.
120. Appendix 2 outlines a summary of 1975 oil and non-oil spills from road, rail, pipeline and other sources as compiled by the Environmental Emergencies Branch, DOE.

ENVIRONMENTAL, AGRICULTURAL AND RESOURCE  
GUIDELINES FOR THE CONSTRUCTION AND  
OPERATION OF THE INTERPROVINCIAL  
PIPE LINE LTD. PIPELINE IN ONTARIO.

Preamble:

These guidelines have been prepared to assist in the review of the Interprovincial Pipelines Ltd. application to construct a pipeline. They reflect the concern of the Province for the safety of its citizens and their property, for the protection of the environment and of natural and agricultural resources and for the interference with the development of industries, cities and municipalities, highways, etc., in the best interest of the Province.

PART I - Data Filed

1. The Applicant should prepare and prefile with the National Energy Board, Topographic Maps or air photo mosaics of 1:50,000 or larger scale containing all topographic information and showing:
  - i) route location
  - ii) pump station (s), tankage, and valve (s) location
  - iii) all important floral and faunal areas traversed by or adjacent to, the proposed route
  - iv) all recreation areas traversed by or adjacent to, the proposed route
  - v) the distribution of present land use for a corridor within the possible zone of influence on either side of the proposed pipe line location, using the following classification:
    - a) Agriculture, such as:
      - crops
      - dairying - mixed farming
      - grazing - livestock
      - poultry
      - orchards
    - b) Forest Resources, such as:
      - forests and woodlots
      - shelter and other protection belts
      - seed production stands
      - agreement forests
      - forest lands managed in conjunction with a public agency.

- c) Mineral Resources, such as:
  - existing and potential oil and gas pools
  - existing and potential pits and quarries
  - other known important mineral deposits
- d) Crown Reserves, Crown Lands, special agreement lands and lands owned or held by quasi public agencies, such as:
  - fish sanctuaries
  - wildlife management areas
  - provincial parks and reserves or national parks
  - ecological reserves
  - areas administered by Conservation Authorities
- e) Urban, such as:
  - residential
  - commercial
  - industrial
  - recreational and open space
  - institutional
- f) Municipal and Rural Water Supply, such as:
  - sources, e.g. reservoirs, watercourses, recharge areas
  - intake and discharge points.
- g) Sites, Areas, Buildings or Structures of Archeological, Historical or Architectural significance
- vi) the geographical distribution of existing and potential physical hazards and constraints such as, but not limited to, landslides, mudflows, avalanches, earthquakes, fire risks, slope stability, marshes and organic soils.

2. . The Applicant should prefile with the National Energy Board:

- i) general construction methods and, methods of minimizing damage and rehabilitation of the right-of-way, including:
  - a) methods of maintaining slope stability;
  - b) methods of construction of permanent facilities in a way that will harmonize with their natural setting;
  - c) plans to carry out assisted revegetation or alternative methods of providing an insulative cover on which natural vegetation can occur;
  - d) the plant material to be used to re-establish vegetation;

- ii) the location of any new access roads to the right-of-way which will be cleared by the Applicant and any planned deviation or expansion of the right-of-way for work camps, storage, etc.
  - iii) the location of shallow wells in or near the right-of-way, particularly if trenching is deeper than 6 to 7 feet. In the event of water supply interference due to construction, the contractor is liable for the restoration of the supply.
  - v) schedule, detailing the proposed timing of construction.
  - vi) the proposed location of any other special design and construction features to minimize damage to sensitive areas.
3. The Company should detail how construction crews are to be educated as to the environmental and agricultural concerns of the Province and what precautions will be taken to ensure that the concerns are followed.

## PART II - Routing

### A. Forests

1. The routing should avoid cutting through seed production stands.
2. The routing should avoid cutting through Ministry of Natural Resources designated forest areas, e.g. defined parts of agreement forests.
3. The routing should follow wherever possible, the interface between woodlands and cleared lands.

### B. Wildlife

1. The habitat of rare or endangered species must not be disturbed.
2. The Applicant should avoid construction through present deer yards.
3. The Applicant should protect wetland areas used as feeding, breeding or staging areas by migratory water fowl or as a habitat for fur bearers.

### C. Watercourse Crossings

1. The pipeline right of way should be a minimum of 1,000 feet from the shoreline of any lake designated by the Ministry of Natural Resources.

2. Pipes should not be laid parallel to streams within a distance of 50 feet of the bank of the waterway. Within the "leave strip" between the right-of-way and the watercourse, trees and vegetation should be left in their natural condition.
3. The location of any watercourse crossings to be used by motorized vehicles (excluding boats) and the frequency of use, must be approved.
4. Such environmental analyses as the Applicant carried out should note species, spawning times and locations of spawning for each watercourse. Where possible, the Applicant shall avoid known fish spawning areas.

D. Notice to Landowners

The Applicant must ensure that the landowner has sufficient advance notice of the exact routing of the pipeline and the land required so that the landowner can assess the consequences of the pipeline construction before any request is tendered for the landowner's signature for an option, or agreement for right of way and easement, or temporary working rights.

E. Parks, Parks Reserves and Areas of Outdoor Recreation

1. No pipelines shall pass through any class of Provincial Park or Park Reserve, or Corresponding Park Zones without the approval of the Ministry of Natural Resources which may except:
  - (a) Access, Recreation or Development Zones of Recreation class parks;
  - (b) existing pipeline, hydro, or service rights-of-way can be used without further widening of the right-of-way or clearing or other undesirable disturbance or any land outside of the existing right-of-way.
2. Areas designated by the Province as having important natural, historical or archaeological value should be avoided.
3. Areas of important recreation potential should be avoided unless it can be proven to the Province to be feasible or seriously impractical to do so.



H. Minerals

Pits, quarries, mineral deposits including oil and gas fields and storage pools, are to be avoided, except where the applicant has reached an agreement with the Ministry of Natural Resources.

PART III - Construction

A. Scheduling

A finalized schedule of construction for each "spread" should be made available to interested parties after the National Energy Board Order has been issued and prior to the commencement of any construction.

B. Equipment Fueling

Refueling and maintenance should be carried out in approved areas and in such a manner as to avoid infiltration to the water table or runoff into watercourses.

C. Forests

1. When passing through woodlots or forests, a designated maximum slash width must be agreed to prior to commencing construction in that particular location.
2. Merchantable timber, removed in preparation of a right-of-way, must be cut in standard lengths and piled in locations from which it can be hauled readily unless other prior arrangements are made with the owner.
3. All slash material should be chipped and/or otherwise disposed of as agreed, unless it is agreed that burning is necessary.
4. If burning of slash is required, approval of Ministry of Environment must be obtained and where necessary, local authorities contacted and their compliance received.
5. Under the Forest Fires Prevention Act (Revised Statutes of Ontario) no burning may take place in the designated fire districts between April 1 and October 31 except under authority of a burning permit obtained from the Ministry of Natural Resources.

6. The procedures for the road clearing slash disposal and cutting of timber will be identical with those for the pipeline right-of way.
7. The Applicant will be required to obtain a work permit under the Forest Fires Prevention Act, Revised Statutes of Ontario, in the Fire Districts designated in this Act, south of latitude of 54<sup>o</sup> North from each Ministry of Natural Resources District concerned, for clearing of the right-of-way and construction of the pipeline.
8. Where Crown land is involved, no disposal of materials adjacent to the pipeline right-of-way will be permitted unless approved by the District Manager (Ministry of Natural Resources)

D. Wildlife

1. Present or potential high quality wildlife management areas should not be permanently interfered with by pipeline construction or operation.
2. For the protection of food supplies for wildlife the Ministry of Natural Resources may designate some areas of grasses, forbs and shrubs to be avoided by construction machinery or equipment storage.

E. Roads, Camps and Soil Replacement

1. When removing stumps during the right-of-way clearing, unnecessary removal of topsoil must be avoided to the satisfaction of the approved inspector.
2. During the backfilling and clean-up operations, the surface layer of soil must be replaced to the satisfaction of the approved inspector.
3. All debris resulting from the pipeline construction shall be disposed of by the Applicant to the satisfaction of the approved inspector or the landowner.
4. In the Ministry of Natural Resources' Fire Districts, the construction of all permanent and/or temporary roads and camps located off the right-of-way must be authorized south of latitude of 54<sup>o</sup> North by a separate work permit under the Forest Fires Prevention Act (Revised Statutes of Ontario) obtained from the District Manager. A land use or other tenure document under The Public Lands Act (Revised Statutes of Ontario) is required

5. Any temporary access road, camp or storage area not required after construction is to be closed at the expense of the Applicant, unless otherwise agreed, and returned to a condition as specified.
6. The Applicant shall be responsible for all additional costs of reconstructing the pipeline to conform to the requirements for all present and future crossings which are on Crown or public lands being managed under agreement with the Province of Ontario. (1)
7. The Company must comply with the provisions of the Ontario Water Resources Act (Revised Statutes of Ontario) and/or the Environmental Protection Act (Revised Statutes of Ontario). with respect to disposal of gaseous, liquid and solid wastes produced as a result of construction operations.

F. Watercourse Crossing

1. An approved inspector must be informed of the particular schedule for each crossing and has the right to be on site for the construction across any watercourse or body of water.
2. The timing of the construction must be such that there will be minimal interference with water users and uses including fish migration or spawning or disruption of the incubation period of the eggs. Such environmental analyses that the Applicant carries out should note species, spawning times and locations of spawning for each watercourse.
3. Clean, approved, granular material must be available on-site prior to trenching and must be used to cover the pipe as soon as it is laid across the watercourse.
4. There shall be no blasting in or adjacent to watercourse beds during fish migration or spawning.
5. Wherever temporary weirs and/or coffer dams are required and constructed at watercrossings to form settling basins for the control of siltation, adequate stream flow must be provided to avoid interference with downstream water uses. Settling basins shall

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1. See Agreement by a Pipeline Company with a Timber Licensee under The Crown Timber Act, Section 10 of Grants of Easement - in respect of existing and future roads of a licensee.

be maintained and cleaned of silt, sand and debris as required to ensure complete control of construction siltation. In addition, these basins must be adequately protected to avoid hazard to persons.

6. Appropriate trench excavation methods must be employed to minimize materials from the pipe trench flowing into bodies of water, giving due consideration to the soil, terrain, ground cover, side slopes and weather conditions involved.
7. Gravel backfill must be avoided over long stretches of trench and perhaps restricted to excavation in the streambed itself, so as to avoid creation of an artificial drainage effect in the trench (French Drain).
8. Water to be used for testing or cleansing of the pipeline must come under the control of a permit to take water as issued by the Ministry of the Environment. This permit will detail the Permittee's responsibility for restoration of water supplies interfered with by the testing. Proposed sources which are limited in capacity or already used extensively may not be permitted for such purposes.
9. The banks of the watercourse must be stabilized upon completion of the construction to avoid erosion.
10. Final stream channel clean-up must include removal of any temporary structures, reshaping of the stream to an approved configuration, width and depth; protection of stream banks as described above; and removal of all construction material and debris as required.
11. Works relating to construction operations should be timed to avoid designated recreational lakes or rivers during peak use periods.
12. Where necessary, herring-bone berms should be used along the route of excavation to direct surface run-off away from newly consolidated areas.

13. Removal of vegetation from the slope approaches to the watercourse must be kept to the minimum necessary for construction. Areas cleared of vegetation must be revegetated as soon as seasonal conditions permit but must be stabilized during the post backfilling, pre-vegetation, period.
14. To minimize silt input into a watercourse which is to be crossed by the pipeline, the cutting of the trench at the bank of the watercourse must not be undertaken until the actual pipe-laying is to take place.
15. The trench and trench site drainage must be discharged to settling areas.
16. Aquatic plants uprooted or cut prior to, or during trenching operations must be contained and deposited on land.
17. To avoid disruption of the bed and the deposition of grease or oil in water, vehicles must not travel along the bed of a watercourse.
18. The Applicant must ensure that the pipeline is adequately weighted.
19. All pipelines, either underwater or located in areas subject to flooding, must be buried below the maximum anticipated depth of scour.

G. Agricultural Lands

1. Adequate notice of the schedule of the movement of materials and/or construction and normal maintenance and repairs should be given to the landowner and/or occupant.
2. The use of herbicides and pesticides must be co-ordinated with the landowner and/or occupant.
3. Where requested the Applicant must remove and stockpile the topsoil before trenching begins. Excess excavated material, stones, construction debris, trees and brush must be disposed of in a manner compatible with the existing land use. Where removed the topsoil must be replaced and, with the exception of land currently under cultivation, must be reseeded in a manner compatible with the soils and existing land use.

construction so as not to inhibit normal movement of equipment or animals.

13. The Applicant should repair or replace all fences opened, removed or damaged. The Applicant should be responsible for damages to animals or property due to inadequate temporary fencing or improper repair or replacement of fencing.
14. Subject to the requirement of the Board Order with respect to the mandatory placement of markers, marker location (s) should be selected in consultation with the landowner.

H. Mineral Resources

Subject to the National Energy Board, the owner or lessee of the mines or minerals, including oil or other hydrocarbons, lying in, on or under the right-of-way may work and prospect for wells, mines or minerals.

I. Parks, Park Reserves and Areas of Outdoor Recreation

1. The Applicant constructing the pipeline should have contingency plans, approved by the Province, to deal at the earliest possible time with the discovery of natural, historical, or archaeological sites of significance during construction.
2. Subject to the requirements of the Board, pipeline markers, and any other visible features, should be located in Parks and Park Reserves with consultation with the Province.

PART IV -Operation, Maintenance and Contingency Planning Procedures

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1. Before conducting any herbicide spraying project to retard vegetation on the right-of-way, the pipeline company should advise the District Manager (Ministry of Natural Resources) and/or the landowner stating the specific location of the project, that the application will be handled by license handlers, the type of chemical to be used and the method of application.

2. The District Manager (Ministry of Natural Resources) must be informed in advance of the actual spraying operation and, at his discretion, may monitor all section spraying.
3. Any use of pesticides must comply with the Pesticides Control Act (Revised Statutes of Ontario) as administered by the Ministry of the Environment.
4. An adequate screening program must be maintained so that any above ground structures, such as pump stations or valving, will be aesthetically harmonious with the local environment.
5. Adequate noise attenuation features must be used and maintained.
6. Before carrying out any pipeline cleaning operations which result in waste material requiring disposal, the company must apply for and receive written approval of the Ministry of the Environment.
7. As provided in the Energy Act (Revised Statutes of Ontario), the Applicant must prepare, prior to operation, a procedure to be followed regularly for surveying the pipeline route by air and land for early detection of leaks and right-of-way maintenance.
8. The Applicant must maintain any access roads necessary to the security of the pipeline.
9. Herbicide spraying after construction will be kept to a minimum. Planting of appropriate herbaceous shrubs may be advised by the Ministry of Natural Resources as an alternative method of right-of-way maintenance.
10. The surface of rights-of-way through Crown Parks and special agreement lands shall be managed by the Province according to the guidelines established for the zone or zones through which it passes subject to any safety requirements and regulations in this regard.
11. A comprehensive contingency plan and notice of spills as generally provided for under the Ontario Water Resources Act, Environment Protection Act and the Energy Act (all Revised Statutes of Ontario) should be prepared by the pipeline company and submitted to all relative Government Agencies. The plan should demonstrate the companies' willingness, ability and preparedness to monitor the throughput and to contain, clean-up and restore the

environment after any sort of spill or line break has occurred. In general, the plan should also show the responses to various anticipated problems or disasters and the reactive procedures and materials to meet these occurrences.

It is advised that the plan be updated as frequently as necessary and in general follow the following outline:

- (i) Contact list - to include company and government personnel to be contacted in case of spill.
- (ii) Response Plan (s) - a review of what reactions are taken upon the discovery of a spill or line break. It should include the order of telephoning and who is responsible for contacting whom.
- (iii) Equipment List - a listing of the company's own resources and additional contractors available along the pipeline route.



PART II- PROVINCIAL AND  
MUNICIPAL

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I. OVERVIEW

Provincial mechanisms designed to prevent or minimize sedimentation to streams and watercourses from road, highway and utility line construction are in a period of transition. Currently voluntary programs by highway agencies and utilities to control soil and water pollution from such activities will in future, with some important exceptions, be required to meet statutory and regulatory environmental assessment requirements and approvals before being permitted to proceed. Exceptions will immediately include large projects deemed to be in an advanced state of planning and prospectively many smaller road construction segments for which only a generic or non specific assessment will be required.

Because the environmental assessment requirement has only just recently become law it is not possible to evaluate whether it is synonymous with or a fully appropriate substitute for a statute directed to control of sedimentation. Normally an environmental assessment law is devoted to larger scale developments.

If program rather than site specific evaluation of many smaller projects is the extent of its use as directed to sediment control, then as a practical matter, an environmental assessment statute may, on many occasions be inadequate for sediment control from an evaluation or enforcement perspective. Little evidence was found of sediment and erosion control from municipal road construction activities, except where current provincial highway agency environmental programs were involved because of joint ownership of the facility.

There is no regulation of the use of highway de-icing salts provincially or locally. Provincial environmental guidelines have been promulgated concerning de-icing compounds and snow disposal but they are of no legal effect.

II. GENERAL ENVIRONMENTAL CONTROLSA. Environmental Protection Act<sup>2</sup>1. General Provisions

In addition to the general prohibition to contaminating the natural environment<sup>3</sup> every person who contaminates the environment must notify the Ministry of Environment.<sup>4</sup> Where any person so contaminates the environment, the Minister, where he is of the opinion that it is in the public interest to do so, may order the person responsible for the contamination to do all things and take all steps necessary to repair the injury or damage.<sup>5</sup> In R.v. Power Tank Lines Limited<sup>6</sup> a company, though blameless of a highway accident for which its driver was not responsible, was convicted of a failure to comply with a Ministerial order to repair the damage to the stream.

2. Abandoned Motor Vehicles<sup>7</sup>

Generally Part VI of the Act provides that provincial officers may remove or cause to be removed an abandoned motor vehicle to an abandoned motor vehicle site.<sup>8</sup> The Part also makes provision for notice to owners of abandoned vehicles, conditions for owner re-possession of the vehicle, disposal, compensation and related matters.<sup>9</sup> Table 1 outlines currently certified derelict motor vehicle sites and systems.

TABLE I

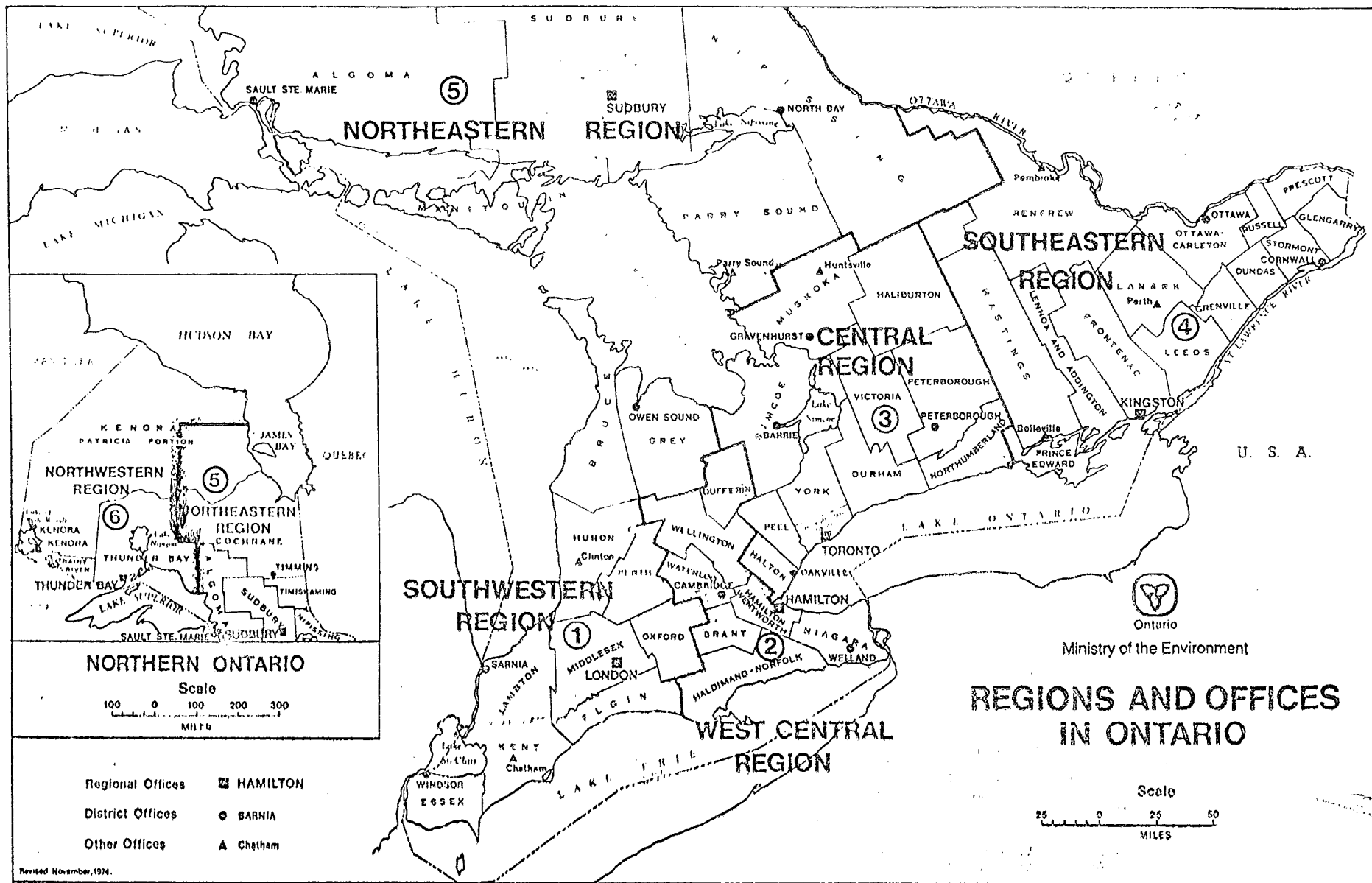
CERTIFICATES OF APPROVAL\* FOR DELELICIT MOTOR VEHICLE  
SITES IN ONTARIO

	<u>Region**</u>	<u>Number of Active Sites</u>	<u>Number of New Sites</u>
1.	South Western	62	-
2.	West Central	55	-
3.	Central	104	20
4.	South Eastern	64	3
5.	North Eastern	25	10
6.	<u>North Western</u>	<u>24</u>	<u>2</u>
TOTAL	Ontario	334	35

Source: Ontario Ministry of Environment, Waste Approvals Branch, Toronto

\* Figures are for active and new sites certified as of March 31, 1976.

\*\*Region refers to Ontario Ministry of Environment regional offices.  
(See map on page 4 for geographic area covered by region.)



Revised November, 1974.

Some 90,000 derelict cars have been dealt with since this Part's inception.<sup>10</sup> It is understood that besides the visual roadside problem with derelict cars, there is also the problem of leakage of gas, oil, transmission and other fluids. These liquids also cause problems with respect to disposal at sites. Some sites have themselves been the subject of Ministerial control orders.<sup>11</sup>

### 3. Litter<sup>12</sup>

No person is permitted to abandon any material in a place, manner, receptacle or wrapping such that it is reasonably likely that the material will become litter.<sup>13</sup> Fines for conviction of an offence under this Part may range from \$100 to \$1,000.<sup>14</sup> Regulations and prohibitions respecting packaging are also authorized under this Part.<sup>15</sup>

### 4. Regulations Exempting Classes of Contaminants<sup>16</sup>

Substances that are used on highways by the Ministry of Transportation and Communication or any road authority or their employees or agents for the purpose of keeping the highways safe for traffic under snow and ice conditions, though they may be contaminants, are classified and exempt from the provisions of the Act and regulations.<sup>17</sup>

### B. Ontario Water Resources Act<sup>18</sup>

Plans for sewage works<sup>19</sup> which do not have to be submitted to the Ministry of Environment for approval include drainage works under the Public Transportation and Highway Improvement Act or the Railways Act.<sup>20</sup>

### C. Environmental Assessment Act<sup>21</sup>

New provincial highways and transmission lines will require environmental assessments as part of their planning process.<sup>22</sup>

### 1. Section 30 Exemption Orders

Section 30 of the Act provides that where the Minister of Environment is of the opinion that it is in the public interest having regard to the purpose of the Act and weighing the same against the injury, damage or interference that might be caused to any person or property by the application of the Act to any undertaking, the Minister with the approval of the provincial cabinet, may by order exempt the undertaking from the application of the Act or the regulations and/or may impose terms and conditions. There is no opportunity for judicial review of such orders under the Act. Pursuant to this power the Ministry of Environment, with the approval of Cabinet, recently brought the Act into force by applying it to parts of the public sector. Approximately 200 pages of exemption orders were issued which included exemptions for Ministry of Transportation and Communication activities and those of Ontario Hydro, the province's principal utility.

Among the MTC activities exempted include construction and maintenance under the MTC capital construction program, for a list of routine activities.<sup>23</sup> These activities include construction or reconstruction of crossroad or railway grade separations, operational improvements such as adding local lanes for auxiliary purposes, construction of garages and other such buildings at the Ministry's patrol yards and drainage improvements, stockpiling of sand, gravel, fill and other maintenance activities. Reasons given for exemption of such activities included that the environmental screening process of MTC would provide environmental protection.<sup>24</sup> Other exemptions include a twenty-one page list of new routes, major realignments, rural and urban highway widenings and new or modified water crossings under MTC's planning, design and Capital Construction Program which are scheduled for completion January 1980. Undue delay in projects well advanced and the MTC environmental screening process are given as reasons for this set of exemptions. Terms and conditions attached to this set of exemptions include that where road construction for this portion of the program is not substantially completed by January 1980 an environmental assessment must be submitted by MTC to the Ministry of Environment. A periodic list of all proposed projects in the program must be prepared with proposed dates of commencement and completion as well as an indication of which projects will have environmental assessments. This list must be sent to MOE and is available for public review. A substantially similar rationale and terms and conditions are given for exemption to January 1980 of the planning, design, provision and construction of new or extended runways in the province's Airport construction program.

Exemption orders for Ontario Hydro projects<sup>25</sup> including new transmission lines indicate that Hydro must still carry out any construction and maintenance in accordance with construction and site restoration guidelines approved by the Ministry of Environment. In some cases it will be required to perform class or program environmental assessments on such activities.

## 2. Regulations<sup>26</sup>

Regulations under the Act exempt municipalities from the Act for the time being.<sup>27</sup> It is understood that the exemption has been granted to allow a working group appointed by municipal and provincial agencies to make appropriate recommendations about the way in which municipalities will have to respond to the Act. Other sections of the regulations<sup>28</sup> provide that loans, grants permits or approvals are not, in themselves, undertakings which require environmental assessment. The intention is not to regulate these activities, but rather to apply the Act to the undertaking which they facilitate if such undertakings are environmentally significant. It should be noted that a joint undertaking by a municipality with the province or a public body or an undertaking by a body not exempted by the regulations would be subject to assessment.<sup>29</sup>



### III. OTHER STATUTORY MECHANISMS - PROVINCIAL AND LOCAL

#### A. The Public Transportation and Highway Improvement Act<sup>30</sup>

##### 1. Administration

The Act is administered by the Ministry of Transportation and Communication. The Environmental Office is responsible for incorporating environmental protection measures into the planning, design, construction and operation of roads and highways though environmental protection per se is not outlined in the statute.

##### 2. Key Provisions

Where the Minister deems it necessary that a highway that is in or under the jurisdiction of a city, town or village; that was under Ministry jurisdiction but has reverted or been transferred to local control; and/or is an essential and direct connection between parts of the King's Highway, should be constructed as a connecting link for the King's Highway, the provincial cabinet may so designate the highway as such and the locality issue debentures sufficient to pay the municipality's share of the cost of construction.<sup>31</sup> The Minister and the locality may enter into an agreement for the construction and maintenance of the highway by the Minister or the municipality,<sup>32</sup> or for additional roadways and widths.<sup>33</sup> Jurisdiction and control of such highways remain with the locality<sup>34</sup> though the Minister may exercise the powers of a municipality respecting the King's highway in the locality.<sup>35</sup>

The Minister or his designate may initiate proceedings under any Act for the purpose of obtaining proper drainage for the King's Highway, but no drainage works may be constructed on the King's Highway under any Act without the Minister's consent.<sup>36</sup> Drainage engineers designated by the Minister for the purposes of securing proper drainage for the King's Highway have all the powers and must perform all the duties on behalf of the Ministry required of an engineer appointed by a municipality.<sup>37</sup> Road superintendents appointed by road authorities under this Act may initiate and carry out proceedings under the Drainage Act for the purpose of obtaining proper drainage for any road within the jurisdiction and control of the road authority.<sup>38</sup>

The Ministry may plant trees along such highways and may pay up to 75 cents as a tree-planting bonus per tree planted along such highways.<sup>39</sup> Municipal or suburban roads commissions may plant trees on its roads, and the cost of the work allocated as part of the cost of maintaining the road.<sup>40</sup>

A township where statute labour has been abolished<sup>41</sup> may submit to the Minister for approval such plans, specifications or by-laws as he requires for any or all of the following purposes: grading; drainage for road purposes; gravelling, metalling with broken stone, or the construction of any kind of road surface; dust prevention by oiling, tarring or other means; systematic maintenance by dragging, gravelling, or other means; the construction of bridges, culverts and approaches; the opening of a new road or the relocating widening or straightening of an existing road; other road improvements.<sup>42</sup> The Minister must

annually advise every locality of the amount of moneys he has allocated to the locality for road improvements and the locality must file with the Minister a detailed estimate showing how such allocation is proposed to be spent.<sup>43</sup>

No earth, debris or excavated material may be deposited within the limits of a road without the permission of a road authority.<sup>44</sup>

Local municipalities may construct sidewalks and other improvements to highways and roads with the permission of the local road authority.<sup>45</sup>

The Minister may enter into an agreement with any person for the removal of snow from a tertiary road or the application of chemicals or abrasives to icy roads. The agreement must provide that not more than 50 per cent of the cost of the work will be paid by the province.<sup>46</sup>

The Minister or his designate may without the consent of the owner enter upon and use any land, alter in any manner any natural or artificial feature of any land, construct and use roads, to or from any land or place or remove from any land any substance or structure for the purposes of land acquisition, highways and other works.<sup>47</sup> Claims for damages or compensation from exercises of powers of land entry may be made.<sup>48</sup> Hearings may be held before the Ontario Municipal Board, where the Minister does not agree with the claim of a person for compensation or damages.<sup>49</sup> The Minister or the claimant may, with leave of the Court of Appeal, appeal to that court from any determination or order of the Board respecting compensation.<sup>50</sup>

The sections enumerated here are ostensibly silent respecting environmental protection measures to be observed during the construction, operation and maintenance of provincial and local roads and highways. However, because the province and local municipalities have the care and control of roads and highways, they have the implied powers pursuant to the above provisions to incorporate environmental measures. Reliance on implied rather than express powers and stipulated procedures has resulted in a number of administrative developments which will be discussed in greater detail below.

B. The Power Corporation Act<sup>51</sup>

Pursuant to this Act, the provincial utility, Ontario Hydro, with the approval of cabinet, may make regulations prescribing the design, construction, installation, protection, use, maintenance, repair, extension, alteration, connection and disconnection of all works and matters used or to be used in the generation, transmission or use of power in Ontario.<sup>52</sup> No regulations respecting environmental protection measures to be taken have been promulgated under the above provision. Ontario Hydro has developed Guidelines for the Protection of the Environment During Power Line Construction which will be discussed below.

C. Gasoline Handling Act<sup>53</sup>

1. Administration

The Act and Code are administered by the Energy branch of the Ministry of Consumer and Commercial Relations.

2. Key Provisions

No person is permitted to transport gasoline or an associated product unless licensed to do so by the Energy Branch Director.<sup>54</sup>

Provisions are also made for licence refusal,<sup>55</sup> suspension<sup>56</sup> and notice thereof,<sup>57</sup> hearings<sup>58</sup> and who may be parties to hearings<sup>59</sup> appeals<sup>60</sup> and powers of inspectors.<sup>61</sup>

3. Key Regulations - Gasoline Handling Code

Where there is a spill of gasoline during the filling, emptying or operation of a tank vehicle, the operator of the vehicle must take immediate corrective action and notify the nearest inspector as soon as practicable but no later than 24 hours after the loss or spillage.<sup>62</sup> Where there is a spill at an above-ground-bulk-storage tank and the products are likely to flow in a manner that would contaminate any fresh water source or waterway or enter into a sewer system or underground stream or drainage system the storage tanks must be appropriately diked.<sup>63</sup>

D. Highway Traffic Act<sup>64</sup>

1. Regulations on Covering of Loads<sup>65</sup>

Where a commercial vehicle is being operated on a highway and is carrying a load that is sand, gravel, crushed stone, slag, salt, waste or scrap, the portion of the load that is not enclosed by the vehicle or load container must be covered with a covering made of tarpaulin, canvass, netting or the like, capable of confining the load to the vehicle and its container.<sup>66</sup> Exemptions to this provision include winter highway maintenance operations (ie: salt, sand or a mixture of both); waste collection; vehicles carrying waste or weighing less than certain amounts; the carrying of agricultural products and movement on crude road surfaces or pursuant to a highway construction contract.<sup>67</sup>

E. Municipal Planning and Management Activities

The more significant initiatives here are to be found in the policies, practices and official plans of municipalities than in the statute books in the form of by-laws. The Regional Municipality of Waterloo, for example, asserts in its draft official plan that at least within environmentally sensitive policy areas it will seek the full co-operation of the Ministry of Transportation and Communication, Ontario Hydro, provincial and federal energy boards and other

provincial and federal agencies to not expand existing, or develop new public works, including expressways, trunk roads, Hydro transmission lines, trunk gas, oil and cable lines into such areas.<sup>68</sup> Its policy as expressed in the Plan is to further ensure that new regional roads and lines will not be permitted within, over and/or under these sensitive areas. Minor re-alignments and widening of existing provincial, regional, and area municipal roads and those services necessary to implement existing legal and approved changes in the legal use of land where they affect environmentally sensitive areas will be permitted only after environmental impact statements indicate that any environmental damage will be minor and acceptable to the Regional Council.<sup>69</sup> Normally the Council would be further aided in its decision-making process by the Regional Ecological and Environmental Advisory Committee in reviewing such proposals. The committee consists of representatives of various agencies and organizations in the Waterloo area.

At least with respect to environmentally sensitive areas, concern for the location of transportation corridors has gone hand in hand with concern that construction practices used will cause a minimum of disturbance to the environment including a minimum of contaminated runoff.<sup>70</sup>

One provincial mechanism which has apparently not been exploited to require or encourage local government to systematically incorporate erosion and sediment control in its roads programs is the financial one. It is estimated that the Ministry of Transportation and Communication subsidizes municipal road building with approximately \$300 million per year.<sup>71</sup> However, except in those instances where MTC would also be involved in building or subcontracting the building of a road or highway it does not require that as a condition precedent to a municipal grant, that the municipality undertake to ensure that in all road building it contracts for with provincial money, sediment and erosion control measures will be incorporated. Nor has the Ministry ever audited municipalities to determine what percentage, if any, of those receiving provincial road building funds, are undertaking such environmental measures on their own.

Most municipal officials interviewed, felt that when the provincial Environmental Assessment Act applied to the municipal sector, there would be a systematized interalization of construction phase environmental protection, including contaminated runoff control, measures developed at the local level. Whether this materializes, however, turns on whether an Environmental Assessment Act, normally devoted to larger scale activities and programs, is synonymous with or can be a substitute for a Sediment Control Act.

Some municipalities, mainly at the regional level, are currently reviewing pesticide spraying practices. Waterloo Region, for example, is halting or severely limiting spraying on Regional roads adjoining woodlands and swamp areas. The provincial Weed Act requirement to control noxious weeds, however, makes elimination of spraying practices more difficult adjacent to croplands.<sup>72</sup> Ministry of Environment surveys of major municipalities respecting their winter roads maintenance practices indicated that application rates up to 1800 lbs. of salt per 2 lane mile of road per treatment are not uncommon. Most municipalities however, were understood to utilize the salt application rates recommended by the Ministry of Transportation and Communications (1972) of 450 lb/2 lane mile for rural roads (per treatment) and, 800 lb./2 lane mile for urban roads (per treatment).<sup>73</sup> Recent survey's for this study regarding municipal snow disposal and road de-icing practices since the publication of Ministry of Environment Guidelines<sup>74</sup> have had no results to date. However, a canvass of selected municipalities revealed an interesting additional consideration. While municipal salt application rates might average 450-500 lbs./2 lane mile, the range of application rates might go from 350-650 or 400-700 lbs./2 lane mile over a number of applications or treatments.

#### IV. NON-STATUTORY ACTIVITIES

##### A. Guideline Evaluating Construction Activities Impacting on Water Resources - Roads and Highways

These guidelines were developed to assist Ministry of Environment staff with their assessment of construction activities impacting on water resources. The guidelines outline expected environmental affects from construction of highways and roads and make general recommendations. Principle effects are noted including erosion, sedimentation and ground water contamination from cuts and fills on steep slopes, vegetation removal and improper interim stabilization. Extensive recommendations are made for mitigating, or preventing water pollution problems during such construction phases as initial right-of-way clearing, open cut and fill area stage, during stream channel relocation and excavation, construction and installation of drainage ditches and culverts, and final stabilization techniques.

These guidelines are of no legal effect, however. Recommendations arising out of them cannot be insisted upon by the Ministry of Environment except to the extent, in future, that the Ministry will have an approval responsibility for new roads and highways under the Environmental Assessment Act.

B. Guidelines for Snow Disposal and Deicing Operations

These guidelines enunciate Ministry of Environment policy respecting snow dumping as well as outline recommendations for municipalities, commercial operators and others to follow respecting winter road salt maintenance operations.

The Ministry policy for snow removed from roadways is that such snow should not be dumped directly into watercourses, nor should snow be disposed of on ice covered rivers or lakes. Where circumstances preclude the disposal of snow on approved land sites or disposal by other acceptable means, the approval of the Ministry of Environment is required prior to dumping directly to a watercourse. The guidelines outline land site criteria for snow dumping, procedures for using deicing chemicals and salt, and salt storage.

Respecting salt application guidelines, Ministry recommendations are derived from the operational practices of a number of Ontario municipalities. These recommendations include a salt application rate of 400-500 lbs./2 lane mile; salting of main thoroughfares and critical road sections only; employment of rate controlled salt distribution equipment which operates independently of vehicle's speed; use of an appropriate salt/sand mixture using only enough salt to achieve desired results; frequent cleaning and maintenance of catch basins and accurate record keeping.

A survey of Ministry of Environment regional offices has been undertaken to determine how Ministry guidelines in this area are being followed by local municipalities and commercial operators. No responses were available at the time of writing.

These guidelines are also of no legal effect. Adherence to their recommendations cannot be insisted upon. As noted earlier, Environmental Protection Act regulations classify salt and chemical deicing agents as contaminants exempt from the Act's provisions. Thus the prohibitory sections of the Act are of no effect even in instances of excessive salt application rates.

C. Ontario Hydro Practices for Protecting the Environment During Power Line Construction

In lieu of enacting regulations under the Power Corporation Act, Ontario Hydro has developed internal guidelines which it expects its operators to observe during right-of-way and transmission line construction. Though Ontario Hydro construction

activities are currently not subject to environmental approvals, the Environmental Assessment Act in future will apply to most right-of-way and transmission line construction. Thus, Hydro construction practices for protecting the environment from such activities will be subject to approvals scrutiny. This is already taking place with respect to those Hydro proposals recently brought under the ambit of the Act.<sup>75</sup> Hydro construction practices for environmental protection are reproduced in Appendix I. They include minimization of clearing and grading to prevent erosion as well as controlling vegetation and top soil disturbance. Environmental agency review of Hydro construction practices in the context of recent hearings will be discussed below.

V. AGREEMENTS AND CONTINGENCY PLANNING

A. Ontario Contingency Plan for Spills of Oil and Other Hazardous Materials

The Plan is implemented by the Contingency Planning Section of the Ontario Ministry of Environment with assistance provided where necessary by other provincial or federal agencies.<sup>76</sup> The Plan was approved by agreement with these agencies in 1975.

The purpose of the Plan is to provide a framework for a coordinated response to spill incidents of major proportion that are of concern to the Ministry of Environment. Generally, the Plan must be implemented (1) where a spill incident is of a magnitude beyond the response capability of the party responsible for, or having precipitated the incident, or when the responsible party fails to respond to the spill incident (2) in certain instances where the source of a major spill cannot be established readily, or (3) upon request for assistance.

Objectives of the Plan include development of appropriate preparedness measures and effective systems for reporting the occurrence of pollution spills; to institute prompt countermeasures in a major incident to neutralize and/or restrict the further spread of the spilled pollutant thus minimizing, where applicable, hazards to animal and plant life, damage to property, disruption to domestic, industrial or agricultural water supplies or other ecological damage; provision of expertise, resources or information to minimize environmental and sensitive area damage from major, moderate and minor spills; and to supplement other spill contingency plans such as the Joint Canada-US Responses.

The Plan also outlines the responsibilities of the various agencies, the nature of response elements and operations

including discovery and alarm, evaluation and plan invocation, containment and countermeasures and clean-up and disposal phases. Information dissemination procedures are outlined as well as surveillance requirements.

The Policy of the Ministry of Environment as expressed in the Plan and in various statutes such as the Environmental Protection Act,<sup>77</sup> is that the party having precipitated a spill is responsible for the containment and clean-up of the spilled material, and responsible for the removal of any contaminated debris or similar material. Statutory responsibilities of such parties are also outlined in the Plan respecting pollution of the natural environment, the reporting of such spills and the repair of damage to the natural environment.

## VI. COMMENT

### Roads, Highways and Related Development

Until recently the Ontario Ministry of Transportation and Communications' route construction erosion control program has been directed to (1) protection of roadways, shoulders and embankments and (2) protection of certain areas near the route construction right-of-way which might otherwise result in lawsuits and other liabilities arising from damages to private property. Commencing in the early 1970's this narrow approach began to give way to a broader one which included intangibles, especially environmental matters, as well as a more comprehensive planning, design, construction and maintenance methodology.

The shift in MTC philosophy and policy arose from a recognition that erosion control per se does not necessarily lead to environmental, including water quality protection. The highway designer has traditionally included erosion control in his plans because the failure to do so might result in subsequent damage to the facility and increased expense. Erosion impacts are now generally recognized however, as acting not only on the facility within the right-of-way, but also adversely effecting land and water outside the right-of-way.<sup>78</sup> In this regard, MTC has developed internal guidelines for the identification of natural environmental impacts and appropriate solutions.<sup>79</sup>

Concerns which must be addressed include effects on fisheries and water quality and quantity arising from route construction causing erosion and resulting sedimentation. The guidelines indicate that specifications to construction contractors must include a statement or qualification of construction practices and/or the staging of construction operations where applicable to minimize anticipated environmental impacts, and; a statement that design features are required to avoid or minimize the effects of the various



construction operations on water quality and local natural systems. The guidelines also indicate that the special provisions developed as a means of minimizing environmental impacts must be specific and biddable by the construction contractor. The guidelines further note that where a mutually satisfactory solution cannot be developed between the parties involved or where a remedial measure would obviously result in an unacceptably high cost or unconventional construction techniques, coordinated efforts between the MTC environmental office and all agencies must be made to resolve the environmental problems in a manner acceptable to all parties.

It is submitted that in part, because the MTC environmental program is without statutory base, economic or other factors may result in wide fluctuations from project to project in terms of the types of erosion and sedimentation controls which will be agreed upon with a corresponding fluctuation in environmental control effectiveness. It is further submitted that under such circumstances, it may still become more attractive for highway agencies to absorb lawsuits for damage to private property at a later point in time than to expend what might be perceived as prohibitive costs at the outset for controlling offsite damage or protecting environmental intangibles.<sup>80</sup> Moreover, since it is estimated that better than 90% of such cases are settled out of court,<sup>81</sup> they generally do not help water pollution control efforts or improve the state of the law, because settlements result in no judicial determination and are not normally reported in legal reporters. Such settlements also do not come into general public consciousness, which means that the problems they exhibit in our decision-making respecting highway construction and water pollution do not get an adequate public airing.

A spinoff effect of the lack of statutory requirements for erosion and sediment control in highway construction activities is the relationship that develops or is seen to develop between the highway agency and the construction contractor where the only control is the contract respecting construction methodology. For example, MTC manuals prepared for MTC construction staff respecting environmental field review highlight problems which staff should be alerted to during construction. One such concern is the action MTC construction staff should take to remedy a situation where a construction contractor's method of operation is poor and he is working in a careless and unnecessarily damaging manner. The proposed solution, outlined by the manual, is for the MTC officer to monitor the contractor's operations, suggest alternative procedures and point out that the Ministry requires a high level of workmanship. (emphasis in original)

While these recommendations are probably an appropriate first threshold response, the manual is silent on further action that should be taken should the problem persist. Implicit is the presumption that failure to observe the admonition will result in loss of future contracts with the Ministry. But such a course of action is drastic, rare and in any event after the fact. (This is leaving aside for the moment whether the contractor's actions are in direct breach of the contract.) If the situation and the relationship were regulatory as opposed to contractual, action available to the agency could include stop orders or other enforcement devices. But such an option is hardly open to an agency perceived to have an interest by virtue of its ownership of the facility. Moreover, while the manual also notes the possibility of paying for additional environmental protection measures not covered in the original contract bid once construction has started, the manual - which is a good summary of environmental measures to be taken during construction - also emphasizes, however, that nothing in the manual is to be interpreted as meaning that environmental protection costs are always justified. In short, economic or financial considerations may frequently be determinative of the issue. This is especially likely to be the case, it is submitted, where no legislated sediment control requirements exist to act as a counter-balance to narrow cost-benefit analyses.

While this problem is likely to be alleviated in some measure by application of the Environmental Assessment Act to highway construction programs, that Act's usefulness may be limited if it only applies to major new road construction activities. It is submitted that such an Act is not a viable substitute for a Sediment Control Act.

Problems of fluctuating environmental control effectiveness are not only a function of available finances. They also arise with respect to the location of proposed facilities as well as the state of the art of erosion and sediment control. Currently, if highway projects have or are likely to have environmental sensitivities, they will likely include some type of control. Recent contracts, in addition to or as a substitute for sediment control ponds, have introduced other operational measures such as timing constraints (ie: limiting number of days for which earth disturbing is permitted), banning construction equipment from entering streams, advancing forward in time seeding and sodding activities, staging construction for environmental protection purposes or introducing design improvements.

Most of the measures listed above are fairly new to MTC highway construction contracts. The principal exception is settling ponds. All or most of the enumerated measures

are valuable as temporary or interim control measures for reducing erosion and sedimentation during construction. Table 2 derived from an earlier Environment Canada study<sup>82</sup> indicates control measures and associated expenditures by the Ontario Ministry of Transportation and Communications for soil conservation purposes. While the figures enumerated therein are for 1972, MTC officials indicate that relative expenditures would be the same today.<sup>83</sup> It should be noted that of the approximately fifteen measures listed in Table 2, MTC officials indicate that settling ponds constitute the main temporary or interim control measure for early-middle phase construction soil stabilization.<sup>84</sup> Final phase or the post-construction period would appear to receive the bulk of MTC soil conservation expenditures. This may be a carry over or transition from the period when erosion control was defined narrowly, ie: principally in relation to protection of the facility within the right-of-way. MTC sponsored studies indicate, however, that sedimentation concentrations to watercourses are heaviest during construction.<sup>85</sup>

MTC studies for improving environmental control techniques have emphasized (1) predicting of impacts and developing remedial measures to reduce such impacts (2) monitoring the impacts of construction and maintenance, and (3) determining the effectiveness of the remedial measures developed.

Recent techniques employed for study evaluation included (1) use of sedimentation ponds through which drainage from the construction site was channelled (2) timing of construction to minimize the amount of disruption to the stream (3) plugs at the downstream end of ditches to hold back sediment-laden water during excavation (4) sand-bag stream checks to trap sediment, and (5) temporary seeding and chemical soil stabilization of steep slopes to reduce erosion.<sup>85</sup>

The efficiency of sediment ponds however (quoted at a maximum of 30%-40% in the MTC-Galt Creek Study)<sup>85</sup> has been criticized as indicating that better or additional controls may be necessary to reduce water pollution during construction.<sup>84</sup>

The MTC position on greater regulatory controls for route construction activities appears to be one of support for the use of the Environmental Assessment Act as the principal means of supplementing the MTC environmental program for sediment control. While this Act will be of value for this purpose, it is submitted that such a statute is normally devoted to larger scale developments and as such may not be synonymous with or a substitute for a statute directed toward control of sediment from many smaller road development activities. While it is possible to postulate that

TABLE 2

## Soil Conservation Practices - Ontario Ministry of Transport &amp; Communications

Item		Quantity 1972 Construction Year	Cost \$
Mulch Seeding	Used universally on soil areas disturbed by construction unless otherwise treated by sodding granular blanket or paving.	4,000 acres	968,000
Sodding	Used where immediate cover is required for aesthetic reasons (urban sections) or for immediate erosion control (ditch lines).	1,019,000 sq. yds.	611,000
Gutter and Curb & Gutter (Asphalt and Concrete)	Used to collect and transport concentrated flows of water which would otherwise cause erosion.	659,000 lin. ft.	2,636,000
Spillways (1/2 Pipes)	Usually used to carry high discharge of water down steep slopes.	5,100 lin. ft.	N.A.*
Slope Paving	Used on earth slopes under structures where vegetation will not grow, at culvert outlets or other highly erosion susceptible areas.	59,000 sq. yds.	N.A.*
Granular Blankets	Usually 12" - 24" thick. Occasionally used on cut and fill slopes and in ditches where easily erodeable material which will not support vegetation is encountered or on slopes where seepage must be controlled to prevent erosion. In urban areas it is occasionally covered with top soil and sod.	188,000 tons	282,000
Sub-Drains - Perforated Steel Pipe	Used to draw off subsurface water. Lowers water table, reduces seepage. Partly directed toward stability and erosion control.	312,000 lin. ft.	N.A.*
Rip Rap (Boulders of Shot Rock)	Used to protect erosion susceptible material from erosion by wave action or fast running water.	56,000 c.y.	N.A.*
Catch Basins With Sumps	Most catch basins incorporate a sump to collect sediment which is cleaned out periodically.	Extensively used. Total figures not readily available.	
Sediment Ponds	Used in ecologically sensitive locations to collect material eroded during the course of construction.	Limited use.	
Checks and Drops (Energy Dissipators)	Used on steep grades in ditches and channels or to dissipate energy where large volumes are discharged from storm sewers into streams and on stream diversions involving steep grades in erodeable material.	Isolated use. Figures not readily available.	
Groins	Low walls of timber rock concrete or steel constructed into the water at right angles to the shore of lakes or streams to trap sand or other water transported material. Develops beaches and protects shore line from erosive action of waves and currents.	Isolated use, e.g. Great Lakes shorelines. 3,000 120,000 lin.ft. 90% M.T.C. Subsidy.	
Sills and Gabions	Shoreline protection. Stream bank protection.	Isolated use e.g. Hwy.59 shoreline protection, London District.  166,000	

\* N.A. - Not available

MTC capital construction programs may receive generic, class or overall program assessments which would define general procedures to be followed on smaller projects, it is submitted that such a general approach will not be an adequate mechanism for determining the appropriate mix of water pollution prevention and abatement measures necessary on a specific case by case basis under statutory or regulatory authority. Nor is the Environmental Assessment Act clear on how general conclusions from a generic environmental assessment will be enforced as a practical matter for smaller activities which are not specifically addressed by an environmental assessment and review. Most likely the difficulty in translating general conclusions into useful and enforceable sediment control options on a smaller, local case by case basis, will result in continuance of the current scheme. That is to say, fluctuation in environmental control effectiveness responding to MTC finances or other pressures.

Indeed, MTC has previously rejected the notion of specific legislation directed to controlling earth disturbing activity. A bill proposed by the provincial Ministry of Agriculture to control through a permit system excessive topsoil removal, erosion and to ensure rehabilitation of lands impacted by construction activity was rejected by MTC and other provincial agencies.<sup>86</sup> The position of MTC on the matter was that if such legislation was approved it should exempt MTC projects including route construction activities. Similarly, MTC argued that municipal projects funded by MTC should also be exempted from such legislation. MTC further responded by indicating that it already complies with the intentions of the legislation proposed, wherever possible.<sup>87</sup>

The MTC position especially on exempting from control municipal road construction projects funded by MTC monies is especially unfortunate as local conservation authorities indicate that local government agencies rarely incorporate silt and erosion control measures in their road construction projects.<sup>88</sup> This is also frequently true at the regional government level as well.<sup>89</sup>

It is submitted that if agencies already comply with the intentions of such procedures, then statutory authorization or recognition of what is already being done can hardly cause an agency inconvenience. Moreover, statutory authorization will serve to (1) better assure uniformity in environmental control effectiveness (2) indicate the seriousness with which government takes the issue (it is hard to require of the private sector what the public sector rejects) and (3) educate all parties concerned, especially the public.

Highway Deicing Salt Use, Storage and Snow Disposal

The Ministry of Environment normally investigates complaints of water contamination arising from the use or storage of salt and where appropriate recommends remedial measures. Frequently, well water contamination problems will result from uncovered salt storage areas according to MOE officials.<sup>90</sup> A joint MOE-MTC committee annually reviews the need for selective covering of salt piles. Where water pollution is suspected at a storage site a high priority is given for covering it. While this arrangement has worked satisfactorily in the past, many salt piles remain uncovered in parts of Northern Ontario. These Northern sites, however, would generally not influence rivers and streams flowing into the Great Lakes.<sup>90</sup> Recent surveys of sand and salt storage at provincial government facilities in one northern district indicated that stream and/or well water pollution potential was medium or high at 75% of MTC storage facilities reviewed.<sup>91</sup>

The policy of MTC is not to restore well water supplies adversely affected by salt spreading, though it will do so for supplies contaminated by leaching from salt piles.<sup>73</sup> Offending salt piles even when subsequently covered, frequently also require the installation of impermeable bermed pads to prevent groundwater contamination.

Municipal road departments that attempt to adhere to MOE-MTC recommended salt spreading rates are frequently stymied by outmoded equipment that does not operate independent of the vehicle's speed. This often results in average seasonal spreading rates considerably higher than provincial recommendations. In Peel Region, for example, the average rate is approximately 550 lbs/2 lane mile. This occurs especially in urban areas where salt spreading equipment is required to stop at intersections and other crossings more often. As noted above, the range of application rates may be quite high where more sophisticated equipment is not in use.<sup>92</sup> The Metro Toronto Roads Department indicates that since 1970, the volume of salt spread on Metro roads has dropped by approximately two-thirds. However, this has caused numerous complaints from drivers. As a result, it was anticipated that the volume of road salt spread in Metro would increase this year.

Ministry of Environment guidelines respecting snow disposal sites recommend that all such sites, including land sites, should be brought to the attention of the MOE regional office for its evaluation before seasonal use. One MOE regional office indicates that there are approximately eighty land disposal sites for snow utilized by

municipalities in the region, though none of the sites are brought to MOE attention for evaluation prior to use.<sup>90</sup> The MOE banned the dumping of snow into watercourses and lakes in 1972 except in emergencies. The province prefers the use of land disposal sites instead. However, some municipalities, such as Metro Toronto, estimate that within five years there will be no land disposal sites for snow left within Metro.

#### Road and Highway Spills

Traditionally in Ontario local and provincial agencies such as fire and police departments have been organized to deal with emergencies, such as highway accidents, that cause fires or dangers to population from overturned trucks or exposures to toxic substances. More recently, environmental agencies in Ontario have been attempting to infuse these emergency procedures with environmental protection procedures which should also be followed. This has evolved because substances transported on highways, quite obviously, are potential environmental contaminants in the event of an accident. For example, in 1973 there were 900 oil spills in Ontario, with approximately ten per cent of these involving accidents on highways.<sup>6</sup> In 1975 there were approximately 600 spills involving oil and other hazardous substances. Approximately 14 per cent (83) of these involved highway accidents. In the first six months of 1976 there were approximately 350 spills of oil and other hazardous or toxic substances. Approximately 19 per cent (67) of these involved highways.<sup>93</sup>

In addition to encouraging the development of governmental contingency plans with environmental aspects, the Ministry of Environment also encourages private carriers to develop contingency plans for the material or substances they carry. MOE statistics indicate that in 1975 approximately 27 per cent of spills (166 of 604) did not have a contingency plan.<sup>93</sup> Neither the Environmental Protection Act nor any other provincial or federal law requires carriers to have contingency plans. The Ontario Contingency Plan is itself mainly an agreement amongst eight provincial and federal agencies to coordinate their actions for environmental protection in the event of a spill or other release to the natural environment. The principal requirements in the EPA which a carrier would have to meet are the requirements to report a release or spill to the MOE and the requirement of cleaning up upon a Ministerial order to do so.<sup>4,5</sup>

In this regard the Power Tank Lines case sets an important precedent in Ontario. It creates a duty to act in the event of a spill distinct from motor vehicle liability

principles. That is to say, where a spill of hazardous substances or materials occurs, prompt action to prevent or curtail the environmental damage (in this case the spread of bunker oil from a highway storm sewer to a creek and ultimately to Lake Ontario) will be required by the party in whose control the toxic or hazardous substance lies, even where such preventive action is necessitated or originates by the negligence of a third party.<sup>6</sup> The Court held further:

"a person or company which causes oil to be carried upon the highway must accept a certain foreseeable risk of accident no matter by whom caused. Additionally, when a spill occurs he must be prompt to deal with the same."

A number of difficulties persist with the EPA however. For example, section 17 of the EPA is in reality a reactive not a preventive provision. The provision states that the Minister of Environment may order repair of damage of the natural environment that has been caused. A preventive provision would permit the Minister to issue an order where any emission, discharge or release might or may cause damage to the natural environment. Amendments to make section 17 of the EPA more of a preventive provision are anticipated. Other provisions of the EPA will be amended it is understood to further uphold the policy that carriers of hazardous materials that are involved in accidents whether caused by their own negligence or that of a third party have a responsibility to deal promptly with spills which may adversely impact on the natural environment. These amendments may include making the owner as well as carrier of hazardous substances jointly and severally liable for any clean-up costs which might be necessitated to prevent environmental damage following a spill. Such a legislated requirement currently exists, for example, in the Canada Shipping Act. Other federal environmental legislation such as the Fisheries Act, does not currently make the failure to clean up a spill an offence under the Act. The value of the Power Tank Lines decision is that it defined the responsible party for a spill as the one with custody of the material at the time of the incident.

The responsibility of clean-up after spills is an important one as evidenced by the quantities of oil and other hazardous substances that have not been cleaned up in Ontario in the past. For example, in 1975 approximately 91 percent of known quantities of oil and other hazardous substances spilled were not cleaned up. (5.8 of 6.4 million gallons) In addition, 29 percent (177 of 604) of all spills in 1975 were not cleaned up by the discharger or his agent. For the first six months of 1976, approximately 95 percent (6.3 of 6.5 million gallons) of known quantities of oil and other hazardous substances spilled were not cleaned up.



Nineteen per cent (66 of 351) of all spills in the first six months of 1976 were not cleaned up by the discharger or his agent.<sup>93</sup>

#### Ontario Hydro Transmission Line Right-of-Way

Under recent orders and regulations issued under the Environmental Assessment Act<sup>25</sup> Ontario Hydro will be required for the first time to carry out its transmission line construction and maintenance in accordance with construction and site restoration guidelines approved by the Ministry of Environment.

Ontario Hydro construction practices until recently, included clear-cutting and bulldozing to establish a right-of-way for its transmission lines. The removal of all ground and forest cover resulted in extensive erosion.<sup>94</sup> Hydro's right-of-way and other construction and maintenance practices have recently come under the scrutiny of the Royal Commission on Electric Power Planning. The Commission was established to examine the long range electric planning alternatives of Ontario Hydro, so that an approved framework can be decided upon by the province. The Commission's terms of reference empower it to consider environmental and land use matters associated with Hydro activities including all facets surrounding transmission corridors. In this regard, Hydro was required to submit information respecting its construction practices and transmission line right-of-way restoration and management practices.<sup>95</sup> An updated version of the Hydro power line construction practices for environmental protection is reproduced in Appendix I.

Ministry of Environment officials who have had field experience in observing Ontario Hydro construction activities argue that the practices as described on paper are generally good but that Hydro has had a mixed fidelity to them in the field. They argued that from their experience, the following were not pursued adequately or at all: timing of construction to minimize soil, water and other environmental damage; topsoil preservation; measures to avoid environmental harm at stream crossings; supervision of construction forces to ensure compliance with environmental guidelines; temporary or interim erosion control measures to avoid damage before final rehabilitation in areas of high erosion hazard; erosion control practices during counter-poising (grounding) and during the crossing of environmentally sensitive locations; research and development to lessen environmental impact of construction practices.

NOTES

1. Where provisions of statutes have been reviewed previously, they will not be repeated here. Where necessary, recourse should be had to previous reports.
2. S.O. 1971,c.86 as amended.
3. s.14.
4. s.15.
5. s.17.
6. (1975) 23 C.C.C. (2d) 464.
7. Part VI of the Act.
8. s.50.
9. ss. 49-55.
10. Ontario Ministry of Environment Annual Report 1974-1975.
11. Interview with G. Trewin, assistant regional director, Ontario Ministry of Environment (Central Region) August 6, 1976, Don Mills, Ontario.
12. Part VIII of the Act.
13. s. 65.
14. s. 68.
15. s. 67.
16. O. Reg. 505/72.
17. s.2.
18. R.S.O. 1970,c. 332 as amended.
19. "Sewage works" are defined in the Act to include drainage and storm water works.
20. s.42(6) (e).
21. S.O. 1975, c. 69. See Report No. 1 for discussion of this Act's key provisions.

22. See "Environmental Assessment Required of Major Ontario Government Projects," Ministry of Environment News Release October 19,1976.
23. These are designated by the province as having little environmental effect. See Ministry of Environment publication EA Update Volume 1, Number 1, October 1976.
24. See Order in Council 2890/76.
25. See Order in Council 2887/76.
26. O.Reg 836/76.
27. s. 5.
28. s.9.
29. Op.cit.
30. R.S.O. 1970,c.201 as amended.
31. s. 19.
32. s. 19 (3)-(5).
33. s. 19(7).
34. s.19(9).
35. s.16.
36. s.23 (1).
37. s.23(2).
38. s.92.
39. s.27.
40. s.98.
41. Statute labour refers to a former requirement of owners of land abutting roads to devote a certain amount of time per year to road maintenance. Section 71 acknowledges that many municipalities would have abolished the statute labour requirement. Thus s. 71 would apparently apply to much of the province.
42. s.71(1)
43. s.71.(2).

44. s.96.
45. s. 97.
46. s.38 (4).
47. s.4.
48. s.10.
49. s.12(2).
50. s.12(3)
51. R.S.O. 1970,c.354 as amended.
52. s.94.
53. R.S.O.1970,c.189 as amended.
54. s. 6.(1) (d).
55. s.6a.
56. s.6b.
57. s.6c.
58. s.6c.
59. s.6.d. The judge may specify other persons as parties besides the Director, applicant or licensee.
60. s.6e.
61. s.8.
62. s.5(64).
63. s. 6(28) and (26).
64. R.S.O. 1970, c.202.
65. O.Reg.632/76 to come into force January1,1977.
66. s.2.
67. s.3.
68. Regional Municipality of Waterloo. Draft Official Plan December 1975 as modified August 1976. Environmentally sensitive areas in Waterloo region comprise about 19,500 areas or about 6 per cent of the geographic area of the region.

69. The Regional Council recently required a developer to undertake an environmental impact study of a proposed development adjacent to one of the region's designated environmentally sensitive areas. It is understood to be the first environmental study ordered by a municipality in the province. See "Developer Ordered to Conduct Ecology Study" The Toronto Globe and Mail, July 20, 1976.
70. Discussion paper from the Waterloo Region Ecological and Environmental Advisory Committee, on water pollution from land use reference, July 20, 1976.
71. Interview with H. Orlando, municipal liaison co-ordinator, Ministry of Transportation and Communication, September 10, 1976. Downsview, Ontario.
72. Op.cit.
73. Ontario Ministry of Environment. A Review of Literature on the Environmental Impact of De-Icing Compounds and Snow Disposal (1974).
74. Ontario Ministry of Environment. Guidelines for Snow Disposal and Deicing Operations in Ontario. 1975.
75. See discussion under Environmental Assessment Act exemptions and terms and conditions applied to Ontario Hydro right-of-way construction practices.
76. The other agencies include the Ontario Ministries of Natural Resources, Transportation and Communication, Health, Solicitor General, Consumer and Commercial Relations and the federal departments of Transport and Environment.
77. Supra note 6 and accompanying text.
78. See J.J. Armstrong, environmental officer, Ministry of Transportation and Communication, "Erosion Control in an Urbanizing Environment: A Transportation Planner's Viewpoint" seminar address before the Hamilton Region Conservation Authority, Spring 1974, Hamilton, Ontario.
79. Ministry of Transportation and Communication. Memorandum on Procedural Guidelines for Identifying and Minimizing Natural Environmental Impacts in the Systems Design Process, (1974).
80. See, for example, Franklyn Trout Farm v. Ontario Ministry of Transportation and Communications. Supreme Court of Ontario Civil Action No. 3962/75. This action for damages is for impairment of local water quality resulting from soil erosion and accompanying sedimentation on private property watercourses.

81. According to MTC estimates.
82. Environment Canada. Contribution of Sediments and Other Pollutants to Receiving Waters From Major Urban Land Development Activities (1974), prepared by Walker Associates, Ottawa.
83. Interview with J.J. Armstrong, Senior Environmental Planner, Ontario Ministry of Transportation and Communication, September 10, 1976.
84. Interview with P.R. Bryar, Systems Design Branch, Ontario Ministry of Transportation and Communication, September 10, 1976.
85. See, for example, John S. Mathers, "Effects of Highway Construction on a Southern Ontario Trout Stream" a paper presented at the 37th MidWest Fish and Wildlife Conference, December 10, 1975. Monitoring studies by the Ministries of Transportation and Communication and Natural Resources on Galt Creek, Ontario indicated an increase in suspended sediment concentration from a maximum of 31 mg/l before construction to 5,945 mg/l during construction directly observed downstream of the construction area.
86. Including the Ministries of Natural Resources and Housing. This occurred during the period 1974-1975 according to provincial government records and memoranda. The Ministry of Environment agreed with the intent of the legislation but felt it was too narrow (it didn't cover erosion from agricultural activities, for example.) MOE favored a green paper and more study on the issue.
87. Memorandum from V. Spencer to K. Lantz, Ministry of Agriculture and Food, summarizing position of Ontario ministries on Topsoil Preservation Bill, March 12, 1975.
88. Interview with R.W. Messervey, Conservation Supervisor, Central Lake Ontario Conservation Authority, Whitby, Ontario, October 6, 1976.
89. The Regional Municipality of Peel Roads Department does not include any practices or procedures for erosion and sedimentation control in its roads program, for example.
90. Memorandum from J. Hatton, Surface and Groundwater Evaluator, MOE, Sudbury, Ontario, December 30, 1976. See also Note 73.
91. Memorandum from R.T. Harris to J. Hatton, MOE, Sudbury, Ontario January 22, 1976.
92. See page 11.

93. Figures from Ontario Ministry of Environment, Contingency Planning Section, September 1976.
94. Testimony of J. Winter, Ontario Hydro Representative before the Royal Commission on Electric Power Planning Public Information Hearings. Volume 16. pp.1933 and 1935, April 22, 1976, Toronto.
95. Ontario Hydro Transmission - Environmental. Memorandum to the Royal Commission on Electric Power Planning. March,1976.



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## APPENDIX I

### PROTECTION OF THE ENVIRONMENT DURING POWER LINE CONSTRUCTION

The way in which the Lines and Stations Construction Department goes about its work can have a significant effect on how Ontario Hydro meets the environmental expectation of the people in the province.

The Department's policy is described in the following guidelines. They are to be followed by all levels of supervision as applicable.

#### 1.0 GENERAL

- 1.1 All employees on a line construction project must be aware of the policies outlined in this instruction. Make sure they are also aware of any specific policy or restriction which may apply to the project they are on. One way of doing this is by crew briefings prior to the start of each operation.
- 1.2 Designate a field contact supervisor to deal with anything pertaining to the environment on each job. This supervisor could be one of the general foremen.
- 1.3 Keep protection of the environment in mind when choosing methods and equipment for a job.
- 1.4 If possible, plan the work for the time of year when least damage will result to the environment. Keep the owner/tenant informed of the construction program.
- 1.5 Cross natural watercourses only after receiving direction from the construction project supervisor and approval from the appropriate authority.
- 1.6 Make sure that surplus material and debris is removed, and that the work locations are kept neat and tidy. Debris must either be removed to an approved disposal area or buried at least two feet down on the right of way. A clean-up operation should follow immediately after each construction activity.
- 1.7 Construction forces must not cut or destroy any trees without agreement of the Forestry Department.
- 1.8 Keep clearing and grading of construction areas to a minimum and prevent erosion.
- 1.9 Do a minimum of grubbing. Take removed stumps to a suitable location on the right of way or to an approved disposal area.

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- 3.4 Locate the access road so that it can be used for all future line construction on the same right of way. Where feasible, locate the access route to minimize physical severance of cultivated fields. Put it beside fence lines or drainage ditches or on headlands.
- 3.5 Avoid wetlands and steep slopes if possible.
- 3.6 Limit the width of the road to 15 feet except on curves, where the width may be increased to handle the longest component to be transported.
- 3.7 Prevent excessive rutting and mixing of subsoil and topsoil.
- 3.8 Use only the established access road for all traffic.
- 3.9 Keep a constant watch on the condition of the access routes and if scarring and erosion damage becomes too severe take remedial action at once.
- 3.10 Seek approval from local authorities with regard to size and location before placing culverts in road ditches or municipal drainage ditches.

### 4.0 CLEARING OF TOWER SITES

- 4.1 Clearing of the tower sites will normally be done by the Forestry Department. The area to be cleared will be kept as small as possible and will be discussed and agreed on by Construction and Forestry personnel.
- 4.2 Trees which are to remain in the work area must be clearly marked to this effect and protected.

### 5.0 FOUNDATIONS

- 5.1 Preserve all trees close to the tower foundation if they were not cleared by the Forestry Department.
- 5.2 Minimize any disturbance of vegetation and topsoil in the surrounding area.
- 5.3 Stop excavated material and other pollutants from getting into natural water courses.
- 5.4 Haul away, bury or otherwise dispose of surplus concrete, bentonite, and other construction materials.
- 5.5 Spread surplus soil over the tower site unless the specifications call for disposal in other locations except as noted in 5.6 for arable land.
- 5.6 On arable land, avoid mixing the topsoil and subsoil during excavation of pad and pier and grillage footings so they can be replaced properly when the site is being restored.  
Dispose of surplus excavated material in a manner mutually agreed with the landowner/tenant, or remove it to a suitable disposal area.
- 5.7 When pumping is necessary make sure the sediment in the discharge water does not get into nearby streams.

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### 9.0 CLEANUP

- 9.1 Give the right of way, access road and storage locations a final inspection at the end of the construction program. Leave the right of way free of all litter, hardware and waste material including concrete. Secure all fences and gates before pulling out.
- 9.2 Remove all temporary culverts and restore drainage courses and embankments to an acceptable condition.
- 9.3 Restore all land which was disturbed during construction to a reasonable state by:
  - (a) filling deep ruts and holes
  - (b) grading around tower sites and pole footings
  - (c) chisel-ploughing and discing of arable land where compaction has occurred
  - (d) restoring access roads to an acceptable condition
  - (e) leave the right of way ready for final seeding and rehabilitation by the Forestry Department.
- 9.4 Carry out complete restoration as soon as the construction work is finished on sections of line, such as between township limits.

Carrying out these measures will require extra planning and care, and some additional costs will likely be involved. The results will, however, be well worthwhile in improved public relations and protection of the countryside.

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