

SUMMARY SHEET

1. Organizational Contact

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2. Charitable Number

Resource Library for the Environment and the Law
88983 2390 RRO001
Letter of Authorization - Attached

3. Title of Project and Team Members

Environmental Standard Setting to Protect Children's Health - Issues for Ontario's Children

Dr. Alan Abelsohn (Project Director, Ontario College of Family Physicians)
Paul Muldoon (Project Director, Canadian Environmental Law Association)
Ms. Loren Vanderlinden (Principal Researcher, Ontario College)
Mr. Terry Burrell (Principal Researcher, CELA)
Ms. Kathleen Cooper (Research, CELA)
Mr. Lisa McShane (Project Information Resource Coordinator, CELA)
Mr. Paul McCulloch (Research Associate, CELA)

4. Grant Requested: \$69,785.00

5. Short Description of the Project

The objectives of the proposal include:

- ▶ to provide an understanding of the environmental threats to children (such as

recommendations from the workshop, the report will be finalized and submitted to the Laidlaw Foundation.

Tasks

The study will undertake the following specific tasks:

1. Describe the relationship between children's health and environmental contaminants in Ontario with special emphasis on implications for standard setting policy (responsibility: the Ontario College of Family Physicians (Environment Committee)).
 - (a) Review, assess, and refine work done to date summarizing effects of environmental contaminants on children's health.
 - i) Search and retrieval of primary research (epidemiological and clinical) and secondary literature. (LV)
 - ii) Accessed via traditional bibliographic databases (e.g. Medline, Cancerlit, CINAHL etc.) but will also cull information from other sources such as, cancer registries, reports from research agencies, government ministries, conferences and appropriate Internet sites (e.g. US EPA, Health Canada, etc.). (LV)
 - iii) All reference data to be entered into a bibliographic database. (LV; PMc)
 - (b) Literature review by Ontario College of Family Physicians will produce draft summaries with the following three substantive objectives:
 - i) To describe the increased susceptibility of children to environmental contaminants, including different susceptibility during different windows of development and via different exposure routes, in a manner which highlights implications for standard setting. (LV & AA)
 - ii) To identify contaminants of particular concern. Review information on toxicity, with special emphasis on dose thresholds, identifying gaps. (LV & AA)
 - iii) To review and assess data on the exposure of Ontario's children to contaminants of concern, identifying gaps. (LV, AA & KC)
 - (c) Key informant interviews
 - i) Interview question framework devised - aiming to complement findings of the literature review (LV)
 - ii) Scheduling and conducting interviews of key researchers and individuals with specific expertise from medical and public health fields as well as non-governmental organizations. (AA & LV)
 - iii) Preliminary list of potential key informants for OCFP
 - Health Canada* - several people, especially those involved with the Great Lakes Health Effects Program (e.g. Doug Haines, Andy Gilman, Mary Hegan) and others concerned with air pollution, persistent organic contaminants, toys (e.g. Warren Foster, Eric Dewailly etc.)
 - Ontario Ministry of Health* (e.g. Lesbia Smith)
 - Local and Regional Health Councils*

Environmental Protection Office of Toronto (e.g. Monica Campbell)

Canadian Institute of Child Health

McMaster Institute of Environment & Health (e.g. John Eyles, David Pengelly, Jack Rosenberg)

University of Toronto, Institute of Environment & Health (e.g. Brian Gibson, John Frank)

Hospital for Sick Children (Dr. Michael McGuigan; Motherisk program)

Canadian Learning Disabilities Association (Barbara McElgunn)

U.S. sources:

Children's Environmental Health Network (Philip Landrigan)

EPA (e.g. David McKee)

Agency for Toxic Substances and Disease Registry (e.g. Lynn Goldman, Barry Johnson, JoAnne Burg, Christopher De Rosa)

Physicians for Social Responsibility

3. Describe and critically assess standard setting for contaminants of concern, and identify data and data gaps on the environmental prevalence of these contaminants (responsibility: the Canadian Environmental Law Association).

(a) Outline current federal and provincial responsibilities and existing legislation and regulations relevant to children's exposure to potentially harmful contaminants, by exposure pathway. This will include the federal role in automobile emissions, new substances via CEPA, other CEPA provisions and the provincial role in air, water, soil, food, etc.

i) Finalize framework for analysis based on exposure pathways (Team)

ii) Prepare draft outline of federal responsibilities and legislation/regulations, based on team's existing knowledge. (PM, PMc)

iii) Prepare draft outline of provincial responsibilities and legislation/regulations, based on team's existing knowledge. (PM, PMc)

iv) Prepare draft outline of municipal roles and responsibilities, especially for monitoring and enforcement. (PM, KC, PMc)

v) Consult federal officials in Departments of Health and Environment (eg. *Andy Gilman, John Buccini, David McBean*) (PM)

vi) Consult provincial officials in Ministry of Environment. (eg., *Jim Smith, Adam Socha, Ron Pearson*) (PM)

vii) Consult key municipal actors and agencies. (PM, KC)

viii) Undertake literature review to supplement existing knowledge and interviews (PMc, LM)

ix) Revise draft outlines and prepare report section (PM, PMc, TB)

(b) Describe the process by which standards are set/changed for Ontario. Describe how decisions are made to develop or change a standard, what information is used, where the research is generated and the extent to which the public is involved. Identify criteria upon which Ontario standards have been based in the past and are currently made. Assess changes since 1990 and the likely future path of standard setting for the province by both federal and provincial

jurisdictions. Briefly assess the capabilities for doing basic research, for critically examining and assembling available research and for generating governmental interest in, and commitment to, standard setting.

- i) Prepare draft description of process for federal standard setting based on team's existing knowledge. (PM, TB, PMc, KC)
 - ii) Prepare draft description of process for provincial standard setting based on team's existing knowledge. (PM, TB, KC, PMc)
 - iii) Undertake literature search to supplement existing knowledge (LM, PMc)
 - iv) Critically review literature (PM, TB, PMc)
 - v) Develop list of key federal and provincial officials who have, or have had direct involvement in health and environmental standard setting (*eg. Jim Smith, Adam Socha and Ron Pearson*). (PM, TB) (see 1(c)(iii) above)
 - vi) Consult federal officials in Departments of Health and Environment who have been directly involved in standard setting to clarify existing process and capabilities. (PM, TB)
 - vii) Consult provincial officials who have been directly involved in standard setting to clarify existing process and capabilities. (PM, TB) (see 1(c)(iii) above)
 - viii) Revise draft outlines and prepare report section (PM, TB)
- (c) Identify standard setting approaches necessary to take children's health appropriately into account. This will include an examination of child-based standard setting in selected other jurisdictions, with special reference to standard setting reform in the United States.
- i) Undertake literature search on standard setting approaches which explicitly incorporate impacts on children (LM, PMc).
 - ii) Critically review literature (TB, PMc).
 - iii) Prepare draft framework of impacts and effects which should be incorporated in child-based standard setting (based on findings of Task 1) (TB, PM, KC, PMc with AA and LM).
 - iv) Consult U.S. public interest groups such as the Children's Environmental Health Network on the U.S. experience in identifying and implementing standards and approaches incorporating impacts on children (TB, PMc) (See 1(c)(iii) above)
 - v) Consult U.S. government officials in the E.P.A and in selected states on the U.S. experience in identifying and implementing standards and approaches incorporating impacts on children (TB, PMc) (See 1(c)(iii) above)
 - vi) Consult Canadian government officials and Canadian and other experts concerning appropriate methods for identifying and implementing standards and approaches incorporating impacts on children (TB, PMc).
 - vii) Revise draft outlines and prepare report section (TB PMc).
- (d) Critically assess Ontario standards and Ontario standards-making in light of findings of task 2 (b) and requirements identified in task 2 (c). Highlight findings in case studies which identify example standards and communities of particular interest.

- i) Undertake critical assessment of Ontario standards-making criteria and approaches using findings of task 2(b) and requirements identified in task 2(c) (TB, PM).
 - ii) Identify case studies of contaminants, standards and communities which highlight findings of 2 (d)(i) (TB, PMc)
 - iii) Prepare report section (TB, PM, PMc).
 - (e) Identify current monitoring and related data available on environmental contaminants of concern, identifying gaps.
 - i) Prepare draft description of data availability based on team's existing knowledge (TB, PMc, LM).
 - ii) Consult federal, provincial and municipal officials in with knowledge of current data availability -- to the extent possible, in conjunction with interviews conducted under task 2(b) (TB, PM, PMc, LM).
 - iii) Consult provincial officials who have been directly involved in standard setting to clarify existing process and capabilities (PM, TB).
 - iv) Revise draft outlines and prepare report section (TB, PMc).
3. Communicate the results of the study and distribute the report to appropriate networks and constituencies (responsibility: the Canadian Environmental Law Association and the Ontario College of Family Physicians (Environment Committee)).
- (a) Present report to the Laidlaw Foundation (AA, PM);
 - (b) Present report to CELA's strategic planning process for the purposes of further identifying CELA's law and policy reform objectives; (PM, KC).
 - (c) Develop a preliminary outreach/ communication strategy to further the findings and recommendations of the report.(KC, PM, AA, TB, LV) Some of the components of this strategy would include:
 - (i) Distribute copies of the study to appropriate government agencies that deal with this issue in Ontario and at the federal level;
 - (ii) Distribute copies of the study to medical health practitioners/researchers and environmental advocacy groups working working in this area;
 - (iii) Present report or parts thereof to Members of Parliament through various briefing sessions; and
 - (iv) Provide a media briefing on the results of the findings and an overview to recommendations for action.

- (d) Provide a preliminary approach for the implementation of community-based strategies to respond to the findings and recommendations in the report, such as assessment of information needs, what communities are priorities for action, how information should be forwarded to them, various organizing measures, among others.

The project team will use case studies to develop the information needed to complete both tasks 1 and 2. The team will make a preliminary assessment of the project's implications for community strategies and tactics to protect children.

The team intends to maximize its use of existing electronic and other sources of data and will access a wide range of government, non-government and private sources of information in Canada and the U.S.. As noted in the Tasks section, the team will place particular importance on tapping the expertise of the Canadian Institute for Child Health, the Toronto Department of Public Health, the Ontario Public Health Association and the U.S. Children's Environmental Health Network.

Workshop

The project team recommends that the Laidlaw Foundation convene a peer review workshop to discuss the first draft of the project report. The workshop would help ensure that the final report covers the subject areas appropriately and provides a suitable basis for further work on the Laidlaw Initiative.

It is proposed that the Laidlaw Foundation sponsor this workshop as an activity of the Foundation's Children's Health and Environment Network, as discussed with Foundation Staff.. The project team would assist in organizing of the workshop in terms of agenda-setting, developing an invitation list, presenting and participating in the workshop, and review of the proceedings.

Schedule

September 15, 1998:	Project Begins
January 18, 1999:	First Report Due
Mid-February, 1999:	Workshop (If approved)
April 2, 1999:	Final Report Due

Project Team

The team draws on the medical and environmental health expertise of the Ontario College of Family Physicians and the legal and environmental capabilities of the Canadian Environmental Law Association. It is comprised of:

Dr. Alan Abelsohn (Project Director, Ontario College)
Mr. Paul Muldoon (Project Director, CELA)
Ms Loren Vanderlinden (Principal Researcher, Ontario College)
Mr. Terry Burrell (Principal Researcher, CELA)
Ms. Kathleen Cooper (Researcher, CELA)
Ms Lisa McShane (Project Information Resource Co-ordinator, CELA)
Mr. Paul McCulloch (Research Associate, CELA)

Advisory Committee

An advisory committee will oversee the project and will meet periodically to review progress. The committee will be comprised of:

Dr. Alan Abelsohn, Chair, Environmental Committee, Ontario College of Family Physicians

Mr. Paul Muldoon, Executive Director, Canadian Environmental Law Association

Dr. Monica Campbell, Toronto Public Health*

A representative of the Canadian Institute for Child Health

Two medical health research experts

* Dr.Campbell has been invited and is currently reviewing the proposal.

BUDGET

Canadian Environmental Law Association	Days	Rate	Amount	Total
Paul Muldoon	22	500	11,000	
Terry Burrell	49	500	24,500	
Kathleen Cooper	10	300	3,000	
Lisa McShane	22	185	4,070	
Paul McCulloch	31	165	5,115	
Total				\$47,685
Less donation of Paul Muldoon's time				- 11,000
Less donation of Kathleen Cooper's time				- 3,000
TOTAL FEES				\$33,685
Expenses:				
Publications and Photocopying			1,300	
Telephone			1,000	
Travel			1,200	
Report Production			600	
Total Expenses				<u>4,100</u>
TOTAL CELA				\$37,785
Ontario College of Family Physician				
Alan Abelsohn	12	500	6,000	
Loren Vanderlinden	46	300	13,800	
TOTAL FEES				\$19,800
Expenses:				
Publications and Photopying			900	
Telephone			800	
Travel			900	
Report Production			400	
Expert Consultation			2,400	
Total Expenses				\$ 5,400
Total Ontario College of Family Physicians				\$25,200
Project Administration and Related				
Canadian Environmental Law Association (CELA)			9,500	
Ontario College of Family Physicians			1,000	
Total				\$10,500
Less donation by CELA				-3,700
Total Project Administration and Related				\$ 6,800
TOTAL PROJECT				\$69,785

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Environmental Standard Setting to Protect Children's Health - Issues for Ontario's Children

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Ms. Kathleen Cooper (Research, CELA)
Mr. Lisa McShane (Project Information Resource Coordinator, CELA)
Mr. Paul McCulloch (Research Associate, CELA)

4. Grant Requested: \$69,785.00

5. Short Description of the Project

The objectives of the proposal include:

- ▶ to provide an understanding of the environmental threats to children (such as

why children's health is at particular risk from environmental contamination and which environmental contaminants are of concern);

- ▶ to assess whether current standards are adequate to protect children and if not, which standards are of concern;
- ▶ to develop strategies and tactics for protecting children, including:
 - developing tactics for limiting children's exposure to contaminants of concern which focus on the pathways by which children are exposed;
 - working to encourage better standard setting and enforcement regimes;
 - addressing gaps in information about health dangers of environmental contaminants; and
 - explore engaging in specific local (or wider) activities to reduce the generation of harmful contaminants.

The project will be undertaken by a team of researchers from both organizations with the assistance of an expert advisory committee. It is expected that both interim and final reports would be produced.

**Environmental Standard Setting to Protect
Children's Health
Issues for Ontario's Children**

Proposal Submitted to the Laidlaw Foundation

By: the Canadian Environmental Law Association and
the Ontario College of Family Physicians (Environment Committee)

Background

The Laidlaw Foundation Initiative

The Laidlaw Foundation has embarked on a new initiative entitled "Environmental Contaminants and Children's Health". This is an ambitious multi-year undertaking with four programme goals aimed at fostering sustainability and improving community environmental health. These goals entail:

- Identifying and fostering community networks and organizations which will set community priorities and strategies for healthy sustainable communities.
- Developing a coordinated strategy for linking community action to government and corporate policy initiatives aimed at reducing environmental contaminants in communities.
- Imbedding the ecological perspective in the everyday understanding of social and economic systems, with a view to influencing behaviour and policymaking in the social, economic and cultural domains.
- Achieving a better understanding of the relationship between environmental contaminants and children's health and translating and disseminating this information to health professionals, policy-makers and citizens.

The Laidlaw Initiative identifies key activities and programme components which will seek to achieve these goals over the next few years. Amongst these are:

- Developing, "translating" and communicating critical information on the relationship between children's health and environmental contaminants to communities and policy makers;
- Examining child-based standards via a large multi-tiered, multi-phased project, involving legal and policy analysis, medical expertise, communications and lobbying;
- Building cross sectoral and cross discipline alliances to further action and information development and dissemination.

What Is Required

The objective of the present proposal is to help lay a sound foundation for the Laidlaw Initiative's activities over the next several years. The proposal is founded on the understanding that initial work is required to provide an informational basis for these activities, to identify gaps requiring

further work and to begin to forge seminal working relationships amongst key groups. It has been developed with the following perspective in mind:

1. To be effective, community strategies for protecting children must be based on a clear understanding of the environmental threats to children's health. Communities should know:

- (a) why children's health is at particular risk from environmental contamination;
- (b) which environmental contaminants are of concern;
- (c) whether current standards are adequate to protect children; if not, which standards are problematic; and
- (d) whether current information on the environmental prevalence of contaminants of concern is adequate to judge if children are adequately protected by current standard setting and enforcement.

2. This information can help communities and families develop strategies and tactics for protecting their children. These strategies and tactics should:

- (a) Deal directly with the gaps, or potential gaps, in protection resulting from inadequate standards and/or enforcement. The response could include a set of tactics for limiting children's exposure to contaminants of concern which focus on the pathways by which children are exposed. These tactics would include specific actions to limit children's exposure to potentially harmful:
 - i) food, including breast milk, baby food and formula
 - ii) drinking water
 - iii) air
 - iv) soil (direct ingestion and via food from family gardens)
 - v) other
- (b) Address issues in standard setting by working to encourage a better standard setting and enforcement regime, including effective pressure for:
 - i) better standards, including better standard-setting procedures;
 - ii) the resources necessary to provide better overall enforcement;
 - iii) better research to narrow the gaps in knowledge about environmental impacts on children's health
- (c) Address gaps in information about the health dangers of environmental contaminants, sources and pathways and the environmental prevalence of these contaminants in communities by:
 - i) taking preventive approaches to protect community health; and
 - ii) effectively advocating for additional research and monitoring

- (d) Explore these groups and organizations engaging in specific local (or wider) activities to reduce the generation of harmful contaminants via collaborative efforts with industry and others.

Relevant Work to Date

Fortunately the task of addressing these information requirements can draw on the considerable research and policy related activity undertaken in Canada and elsewhere. While large gaps remain in our understanding of how environmental contaminants affect children's health, significant research has been completed and substantial recent efforts have gone to summarizing knowledge in the area. Europe and the United States are responsible for several studies and symposia.¹

In Canada, the Ontario Public Health Association co-hosted a symposium "Are Our Children Safe?" in 1996, the Canadian Institute for Children's Health (CICH) hosted a 1997 national symposium "What on Earth", and CICH and Pollution Probe together convened "The Air Children Breathe" earlier this year. CICH commissioned a literature review of Canadian and international research on environmental contaminants and children's health, the second draft of which was made available last month.²

Along with information gathering and synthesis, substantial efforts have begun to address the inadequacy of existing environmental standards. In the United States, organizations such as the Children's Environmental Health Network have succeeded in prodding government into adopting a policy commitment to environmental standard setting which recognizes the importance of children's health. The Environmental Protection Agency (EPA) announced a national policy in October 1995, committing the agency to take health impacts on children and infants into explicit account when conducting environmental risk assessments. This commitment was affirmed by the administration in the spring of 1997 when President Clinton signed an Executive Order entitled Protection Of Children From Environmental Health Risks And Safety Risks. It directs the U.S.

¹ There have been several works summarizing scientific findings which include: Commission of the European Communities, Principles for Evaluating Health Risks from Chemicals During Infancy and Early Childhood: The Need for a Special Approach Geneva. United Nations Environment Programme, 1986; National Research Council, Pesticides in the Diets of Infants and Children, National Academic Press, Washington 1993; United States Environmental Protection Agency, Environmental Health Threats to Children, Washington, 1996 Guzelian P.S., Henry C.J., Olin S.S., (Eds.) Similarities and Differences Between Children and Adults. Implications for Risk Assessment, ILSI Press, Washington 1992. The most recent of relevant international symposia are "Bridging the Gap: New Needs and Perspectives for Environmental Information" held in London U.K. in June 1998 and the August 1998 "1st Internal Conference on Children's Health and the Environment" to be held in Amsterdam.

² Harmsen, E., Avard, D., Chance G. and Underwood K. Environmental Contaminants and the Implications for Child Health: Literature Review, 2nd Draft. Prepared for the Canadian Institute of Child Health, May 1998. See also the Ontario Medical Association's recent report summarizing findings on health effects associated ground level ozone, which specifically addresses impacts on children: OMA Ground Level Ozone Position Paper, May 1998.

federal government to "ensure that its policies, programs, activities and standards address disproportionate risks to children that result from environmental health risks or safety risks."

EPA issued a major report in 1996 "Environmental Health Threats to Children." The report acknowledges the unique vulnerability of children to environmental hazards. It explicitly commits the agency to a programme of standards reform "to ensure that all standards EPA sets are protective enough to address the potentially heightened risks faced by children -- so as to prevent environmental health risks wherever possible -- and that the most significant current standards be re-evaluated as we learn more." In keeping with this approach the *Food Quality Protection Act* of 1996 directs EPA to assure that allowable pesticide residue levels are set to protect children.

Part of the programme set out in Environmental Health Threats to Children includes a promise to revise existing standards. EPA will "select -- with public input and scientific peer review -- five of its most significant public health and environmental standards to re-issue on an expedited basis". EPA is currently engaged in this process and has invited public comment on the approach to be taken to ensure its satisfactory completion.

The process of standards revision taking place in the U.S. is one to which the Canadian government and all other members of G8 expressed support when they signed the 1997 Declaration of the Environment Leaders of the Eight on Children's Environmental Health. It states "We pledge to establish national policies that take into account the specific exposure pathways and dose-response characteristics of children when conducting environmental risk assessments and setting protective standards."

Purposes

The present proposal is designed to take advantage of this knowledge, activity and commitment to accomplish two primary purposes:

1. Deepen the understanding of the relationship between children's health and environmental contaminants in Ontario, with special emphasis on implications for standard-setting policy.
2. Describe and critically assess the role of environmental standard setting in protecting Ontario's children.

Approach

The study will be a cooperative effort of the Ontario College of Family Physicians (Environment Committee) and the Canadian Environmental Law Association. Overall project direction and methodology will be established together and project progress will be jointly monitored. Each group will take responsibility for its particular work area and group representatives will provide

project management in each area. These project managers will sit on the project's steering committee, along with representatives from the Laidlaw Foundation.

Tasks

The study will undertake the following specific tasks:

1. Describe the relationship between children's health and environmental contaminants in Ontario with special emphasis on implications for standard setting policy (responsibility: the Ontario College of Family Physicians (Environment Committee)).
 - (a) Review, assess, and refine work done to date summarizing effects of environmental contaminants on children's health. Describe the increased susceptibility of children to environmental contaminants, including different susceptibility during different windows of development, in a manner which highlights implications for standard setting.
 - (b) Identify contaminants of particular concern. Review information on toxicity, with special emphasis on dose thresholds, identifying gaps.
 - (c) Review and assess data on the exposure of Ontario's children to contaminants of concern, identifying gaps.
2. Describe and critically assess standard setting for contaminants of concern, and identify data and data gaps on the environmental prevalence of these contaminants (responsibility: the Canadian Environmental Law Association).
 - (a) Outline the federal and provincial legislative/regulatory framework which affects children's exposure to potentially harmful contaminants, by exposure pathway. This will include the federal role in automobile emissions, new substances via Canadian Environmental Protection Act (CEPA), other CEPA provisions and the provincial role in air, water, soil, etc.
 - (b) Describe the process by which standards are set/changed for Ontario. Describe how decisions are made to develop or change a standard, what information is used, where the research is generated and the extent to which the public is involved. Assess changes since 1990 and the likely future path of standard setting for the province by both federal and provincial jurisdictions. Briefly assess the capabilities for doing basic research, for critically examining and assembling available research and for generating governmental interest in, and commitment to, standard setting.

- (c) Identify standard setting approaches necessary to take children's health appropriately into account. This will include an examination of child-based standard setting in selected other jurisdictions, with special reference to standard setting reform in the U.S.
- (d) Set out the criteria upon which standards are made in Ontario. Critically assess these in light of 2(c).
- (e) Identify current monitoring and related data available on environmental contaminants of concern, identifying gaps.

The project team will use case studies to develop the information needed to complete both tasks 1 and 2. The team will make a preliminary assessment of the project's implications for community strategies and tactics to protect children.

The team intends to maximize its use of existing electronic and other sources of data and will access a wide range of government, non-government and private sources of information in Canada and the U.S.. The team will place particular importance on tapping the expertise of the Canadian Institute for Child Health, the Toronto Department of Public Health, the Ontario Public Health Association and the U.S. Children's Environmental Health Network.

Workshop

The project team recommends that the Laidlaw Foundation convene a peer review workshop to discuss the first draft of the project report. The workshop would help ensure that the final report covers the subject areas appropriately and provides a suitable basis for further work on the Laidlaw Initiative.

Schedule

- July 1, 1998: Project Begins
- October 1, 1998: First Report Due
- October 30, 1998: Workshop (If approved)
- December 31, 1998: Final Report Due

Project Team

The team draws on the medical and environmental health expertise of the Ontario College of Family Physicians and the legal and environmental capabilities of the Canadian Environmental Law Association. It is comprised of:

Dr. Alan Abelsohn (Project Director, Ontario College)
Mr. Paul Muldoon (Project Director, CELA)
Ms Loren Vanderlinden (Principal Researcher, Ontario College)
Mr. Terry Burrell (Principal Researcher, CELA)
Ms. Kathleen Cooper (Researcher, CELA)
Ms Lisa McShane (Project Information Resource Co-ordinator, CELA)
Mr. Paul McCulloch (Research Associate, CELA)

Advisory Committee

An advisory committee will oversee the project and will meet periodically to review progress. The committee will be comprised of:

Dr. Alan Abelsohn, Chair, Environmental Committee, Ontario College of Family Physicians

Mr. Paul Muldoon, Executive Director, Canadian Environmental Law Association

Dr. Peter Victor, Dean, Faculty of Environmental Studies, York University *

Dr. David McKeown, Medical Officer of Health, City of Toronto *

Dr. Monica Campbell, Ontario Public Health Association *

Mr. Bruce Lourie, Laidlaw Foundation

A representative of the Canadian Institute for Child Health

Two medical health research experts

* To be invited

BUDGET

Canadian Environmental Law Association

	Days	Rate	Amount	Total
Paul Muldoon	22	500	11,000	
Terry Burrell	49	500	24,500	
Kathleen Cooper	10	300	3,000	
Lisa McShane	22	185	4,070	
Paul McCulloch	31	165	5,115	

Total				\$47,685
Less donation of Paul Muldoon's time				- 11,000
Less donation of Kathleen Cooper's time				<u>- 3,000</u>

TOTAL FEES **\$33,685**

Expenses:

Publications and Photocopying			1,300	
Telephone			1,000	
Travel			1,200	
Report Production			600	
Total Expenses				<u>4,100</u>

TOTAL CELA **\$37,785**

Ontario College of Family Physician

Alan Abelsohn	12	500	6,000	
Loren Vanderlinden	46	300	13,800	

TOTAL FEES **\$19,800**

Expenses:

Publications and Photopying			900	
Telephone			800	
Travel			900	
Report Production			400	
Expert Consultation			2,400	
Total Expenses				\$ 5,400

Total Ontario College of Family Physicians **\$25,200**

Project Administration and Related Canadian Environmental Law Association (CELA)

Ontario College of Family Physicians			1,000	
Total				\$10,500
Less donation by CELA				<u>-3,700</u>

Total Project Administration and Related **\$ 6,800**

TOTAL PROJECT **\$69,785**

Alan Abelsohn
147 Havelock Street
Toronto, Ontario
M6H 3B7
483-8182

MEDICAL EDUCATION

- 1974 Graduated MBChB with distinction in first and second professional exams, and Degree with Honours, University of Cape Town, Cape Town, South Africa.
- 1975 Interned at Groote Schuur Hospital, Cape Town, with 6 months Internal Medicine and 6 months Surgery.
- 1976-78 2nd and 3rd years of Family Practice Residency, Mount Sinai Hospital, University of Toronto.
- 1978 LMCC (Canadian Medical Licencing)
CCFP (Certificat of the College of Family Physicians of Canada)
- 1996 Diploma in Environmental Health, McMaster University.

MEDICAL CAREER

- 1978 Locums in Toronto
- 1979-84 Developed group practice in Chesley, Ontario. Rural practice with active privileges at Chesley Hospital (20 beds); Hanover Hospital (100 beds); and County of Bruce General Hospital (100 beds), including Obstetrics and Emergency.
- 1984-86 Half-time physician at Lawrence Heights Community Health Centre and half-time private practice . Privileges at York Finch General Hospital and North West General Hospital.
- 1986- Private practice in Toronto, Privileges (non admitting) at North West General and Mount Sinai Hospitals.

APPOINTMENTS

- 1973-74 Medical Students Council
- 1979-82 Chief of Medical Staff, Chesley and District Memorial Hospital
- 1980-83 Member, Mental Health Board, Grey-Bruce District Health Council
- 1991-94 Chair, Task Force on Environment and Health, Ontario College of Family Physicians
- 1991-93 Instructor, Dept. of Family Medicine, University of Toronto
- 1993- Lecturer, Dept. of Family Medicine, University of Toronto
- 1993-94 Co-Chair, Task Force on Educating Health Professionals in Environmental Health, Institute of Environment and Health, University of Toronto
- 1994- Chair, Committee on Environmental Health, Ontario College of Family Physicians
- 1995- Member, Health Professionals Task Force, International Joint Commission.

AWARDS

- 1984 Upjohn Postgraduate Study Award (through Canadian College of Family Physicians)
- 1994 Canadian College of Family Physicians Practice Enrichment Study Award
- 1995 Canadian College of Family Physicians Practice Enrichment Study Award (for Occupational and Environmental Medicine)
- 1997 Fellowship of the Canadian College of Family Physicians
- 1997 Awarded scholarship as associate in 2 year program with LEAD Canada (Leadership for Environment and Development)
- 1998 Dr Victor Cecilioni Research Fund Award , Hamilton Health Sciences Foundation.

COMMUNITY WORK

- 1980-84 Planned and worked with Hospital Board, Ministry of Health and community in building Chesley Memorial Hospital.
- 1983-84 Planned and developed Chesley Counselling Services, a bereavement and counselling service run by the clergy and physicians in Chesley.
- 1989-91 Political liaison and chair, Fundraising committee, Old Orchard Public School Wilderness Garden Project.

RESEARCH

- 1993-96 "Marital Strain and Hypertension." Grant from Heart and Stroke Foundation. (In association with Dr. B. Baker psychiatrist, Cardiac Clinic, Toronto Hospital).
- 1996 "Air Pollution and Health Effects; a Survey of Primary Care Physicians and Respiriologists in Ontario" in association with The Ontario College of Family Physicians and the Lung Association of Ontario

TEACHING

- 1988 Comprehensive clinics for clinical clerks, Mount Sinai Hosp.
- 1989-96 Office based clinical clerk teaching for Dept. of Family Medicine, Mount Sinai Hospital.
- 1994-5 Lecturer in Clinical applications and Health promotion, Canadian College of Naturopathic Medicine.
- 1996 Designed curriculum for course "Environmental Health" for Michener Institute of Applied Health Sciences
- 1998 (In progress) Design Curriculum for Environmental Health in Family Medicine Residency Programs, in collaboration with Ont College of Family Physicians, IJC and McMaster Dept of Family Medicine.
- 1997- Lecturer, Environmental Health course, Environmental Studies Program, Innis College, U of T.

ENVIRONMENT AND HEALTH ACTIVITIES

- 1991-94 Chair, Task Force on Environment and Health, Ontario College of Family Physicians.
- 1992 Participant in "Balancing the Scales; Mitigating the Health Effects of Great Lakes Pollution" Conference, Wingspread, Wisconsin.
- 1992 "Human Health and the Environment" Symposium, Harvard School of Public Health.
- 1992 Presented Occupational Medicine Grand Rounds, McMaster University, on "The Role of the Family Physician in Environment and Health."
- 1993 Organised and Co-Chaired "Roundtable to develop a strategy for informing Health Professionals about the Impact of the Environment on Health," with the International Joint Commission.
- 1993 Invited participant in workshop "Educating health professionals in Environment and Health" at International Congress on Toxic Wastes, Atlanta.
- 1993 Presented workshop "Clinical Skills in Environmental Medicine" at Ontario College of Family Physicians Annual Scientific Assembly.
- 1993-94 Co-chair "Task Force of Health Professionals on Environment and Health," with Great Lakes Health Environment Program of Health Canada and The Institute of Environment and Health, University of Toronto
- 1993- Member Institute of Environment and Health, University of Toronto.
- 1994- Chair, Committee on Environmental Health, Ontario College of Family Physicians.
- 1994 Member, Organising Committee and Chair, CME Day in Environmental Health for Primary Care Practitioners, McMaster University.
- 1995 Appointed to Health Professional's Task Force, International Joint Commission.
- 1996 Invited address to Plenary Session on Environment and Health at WONCA (World Congress of Family Medicine) Hong Kong, and workshop on "Clinical Skills in Environmental Medicine"
- 1996 Diploma in Environmental Health, McMaster University, with project entitled "Air Pollution and Human Health: A Literature Review, A Communication Tool for Family Physicians, and a Survey of Physician Knowledge in Ontario."
- 1996 Workshop leader at Forum on Human Health and Air Quality in the Great Lakes; The Lung Assoc and GLHEP.
- 1996 Wrote and produced Fact Sheet on Health Effects of Air Pollution for Ontario College of Family Physicians, The Lung Association, Pollution Probe, and Glaxo-Wellcome.

- 1996 Invited address " The Role of the Family Physician in Air Pollution" to Transportation, Air Quality and Human Health Conference, Pollution Probe and York University Centre for Applied Sustainability
- 1996- Member, Steering Committee, Ontario Smog Plan.
- 1996- Developed Program on "Human Health Effects of Transboundary Air Pollution in the Great Lakes" for International Joint Commission Health Professionals Task Force in association with International Air Quality Assessment Board of IJC.
- 1997 Expert witness for Geenpeace in case related to health effects of SO2 emissions from the PetroCanada refinery in Oakville, Ontario
- 1997 Awarded scholarship as associate in 2 year program with LEAD Canada (Leadership for Environment and Development)

PERSONAL

Birth : 12 July, 1951, Cape Town, South Africa.

Canadian citizen.

Married with two daughters.

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April, 1998.

CURRICULUM VITAE

Paul Robert Muldoon, B.A., LL.B., M.A., LL.M.
(of the Ontario Bar)

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Toronto, Ontario
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EDUCATION

Bar Admission Course
Law Society of Upper Canada, 1983-84
Call to the Bar of Ontario in 1984

McGill University (Institute for Comparative Law)
LL.M. (Masters of Law) - 1984
Specialization: International and U.S.-Canada Relations

McMaster University (Department of Political Science)
M.A. (Masters of Arts) - 1983
Specialization: International and U.S.-Canada Relations

University of Ottawa (Faculty of Law)
LL.B. (Bachelor of Laws) - 1981

Wilfrid Laurier University (Department of Political Science)
Hons. B.A. (Bachelor of Arts) - 1978

EMPLOYMENT

February 1998 **Executive Director, Canadian Environmental Law to Present**
Association

February 1994 **Staff Counsel, Canadian Environmental Law**

to February 1998 Association

April 1992 Sole Practitioner representing
to Feb. 1994 environmental groups such as Pollution Probe

Jan. 1990 Director of Programs, Pollution Probe
to Aug. 1992

December 1988 Research Associate, Canadian Institute for
to Jan. 1990 Environmental Law and Policy

September 1989 Part-time Faculty, Trent University,
to June, 1990

September 1985 Recipient of "Private Scholar Research Grant"
to August 1986 from Social Sciences and Humanities Research
Council of Canada to study from a legal
perspective the environmental dimension of
foreign aid

April 1984 to Research Associate
September 1985 Canadian Environmental Law Research Foundation

APPOINTMENTS

Instructor - Institute for Environmental Studies, University of Toronto
(1990 to present)
Innis College, University of Toronto
(1990 to present)

Instructor - Faculty of Environmental Studies, York University
(1993 to present)

Instructor- Bar Admission Course - Public Law - Law Society of Upper
Canada, (1994 to present)

MEMBERSHIPS AND DISTINCTIONS

Past Chair, Conservation Committee, Laidlaw Foundation.

Past Director, Canadian Environmental Defense Fund

Member (1990 to 1995), Science Advisory Board, International Joint Commission (An advisory board mandated under the Great Lakes Water Quality Agreement).

Member (1992 to 1994), Environmental Bill of Rights Task Force (A task force that drafted the Environmental Bill of Rights, 1993.)

Member (1989- 1995), MISA [Municipal-Industrial Strategy for Abatement] Advisory Committee - (A provincial body which report to the Minister of the Environment on its water quality program.)

Director-at- Large (1987 to 1995), Great Lakes United (a coalition of 150 environmental, health, labour groups from around the Great Lakes basin)

Paul Muldoon, Richard Lindgren, Marcia Valiante, Editors-in-Chief, Canadian Environmental Law Reports, Toronto, Carswell.

Gold Medalist - Academic Achievement, Wilfrid Laurier University, 1978.

PUBLICATIONS AND OTHER WORKS

Paul Muldoon, "The International Joint Commission and Point Roberts: A Venture into a New Area of Concern" (M.A. Thesis, McMaster University, 1983).

Paul Muldoon, "Legal Controls of Acid Precipitation in the North American Context" (LL.M. Thesis, McGill University, 1984).

Paul Muldoon and Leslie Stalker, "Equal Access: Suing Polluters on their Own Turf" (1984), 12 Alternatives 12.

Paul Muldoon and David Scriven, "Intervention as Added Party: Rule 13 of the Ontario Rules of Civil Procedure" (1985), 6 Advocates' Quarterly 129.

Marcia Valiante and Paul Muldoon, "Biotechnology: A Regulatory Proposal" (1985), 23

Osgoode Hall Law Journal 359.

Paul Muldoon and David Scriven, "Intervention as Friend of the Court: Rule 13 of the Ontario Rules of Civil Procedure" (1986), 6 *Advocates' Quarterly* 448.

Marcia Valiante and Paul Muldoon, "An Overview of Canadian Law and Policy Governing Great Lakes Quantity Management" (1986), 18 *Case Western Reserve Journal of International Law* 109.

Paul Muldoon, with David Scriven and James Olson, Cross-Border Litigation: Environmental Rights in the Great Lakes Ecosystem (Toronto: Carswell, 1986).

Paul Muldoon, "The International Law of Ecodevelopment: Emerging Norms for Development Assistance Agencies" (1987), 18 *Texas International Law Journal* 109.

Paul Muldoon and David Scriven, "Principles for Ecosystem Regulation - A Discussion Paper" (Toronto: Canadian Environmental Law Research Foundation, 1987).

Paul Muldoon, "Air Pollution Controls in Canada and the United States: A Comparative Overview" in Environmental Law in Indonesia and Canada, (eds.) D. VanderZwaag, S. Mills and B. Patton (Halifax: School for Resource and Environmental Studies, 1987).

J. Ferretti, Paul Muldoon and M. Valiante, "CIDA's New Environmental Policy" *Probe Post*, Winter, 1987, 25.

Paul Muldoon and Andrea Jenkins, "Transboundary Emergency Planning: Information, Procedures, and Liability" (A Report submitted to the Ontario Nuclear Safety Review, September, 1987).

Paul Muldoon, "Ecosystem Management: Overcoming Jurisdictional Diversity Through Law Reform" in Toxic Contamination in Large Lakes, Vol. IV: Prevention of Toxic Contamination in Large Lakes N.W. Schmidtke (ed.) (Chelsea: Mich.: Lewis Publishers, 1988).

Paul Muldoon and Marcia Valiante, Zero Discharge: A Strategy for the Regulation of Toxic Substances in the Great Lakes Ecosystem (Toronto: Canadian Environmental Law Research Foundation, 1988).

Paul Muldoon, "The Fight for an Environmental Bill of Rights: Legislating Public Participation in the Environmental Decision-Making Process" (1988), 15 *Alternatives* 33.

Paul Muldoon and Marcia Valiante, Toxic Water Pollution in Canada: Regulatory

Principles for Reduction and Elimination (Calgary: Canadian Institute for Resources Law, Faculty of Law, University of Calgary, 1989).

Paul Muldoon, "Ministry of Environment v. The City of Detroit et al. - Case Commentary" (1988), 2 Canadian Environmental Law Reports (N.S.) 320.

Paul Muldoon, The Law of Intervention: Status and Practice (Toronto: Canada Law Book, 1989).

Paul Muldoon and John Jackson, "What's Gone Before: The Draft Charter's Legal and Administrative Context" in P.G. Sly, D.M. Leith, and D.J. Waterston, (eds.), Towards and Ecosystem Charter for the Great Lakes - St. Lawrence (Ottawa: Rawson Academy of Aquatic Science, 1989).

Marcia Valiante and Paul Muldoon, "Annual Review of Canadian U.S. Relations - 1989" (1990) vol. 2 International Environmental Policy 251.

Jack Gibbons, Paul Muldoon, and Marcia Valiante, "Sustainable Development: Its Implications for Energy Policy in Canada" in Proceedings of the Conference - in The Legal Challenge of Sustainable Development, O. Saunders, (ed.) (Calgary: Canadian Institute of Resources Law, 1989)

Paul Muldoon, "The GRAND Proposal", in A.L.C. de Menstral and D.M. Leith, (eds.), Canadian Water Exports and Free Trade (Ottawa: Rawson Academy of Aquatic Science, 1989).

Marcia Valiante and Paul Muldoon, "Annual Review of Canadian U.S. Relations - 1990" (1991), vol. 3 International Environmental Policy 207.

Paul Muldoon et al. "The Regulatory Context" in the Royal Commission on the Future of the Toronto Waterfront, 1990.

Paul Muldoon, "A Pollution Prevention Strategy for Canada", in Sustainable Development in Canada: Options for Law Reform, (Ottawa: Canadian Bar Association, 1990).

Franklin Gertler, Paul Muldoon and Marcia Valiante, "Citizen Rights" in Sustainable Development in Canada: Options for Law Reform, (Ottawa: Canadian Bar Association, 1990).

Paul Muldoon, Tim Eder, Mark Van Putten and John Jackson, A Prescription for Healthy Great Lakes (Washington: National Wildlife Federation, 1991).

Marcia Valiante and Paul Muldoon, "Annual Review of Canadian U.S. Relations - 1991" (1992) vol. 4 International Environmental Policy 254.

Paul Muldoon, "Sunset Chemicals: The Dawning of a Less Chemical Canada" Probe Prost, No.14:1, pp. 12-14, Spring, 1991.

Paul Muldoon et al. Planning for Sustainability: Toward Integrating Environment and Land-Use Planning (Toronto: Royal Commission on the Future of Toronto Waterfront, 1991).

David McRobert and Paul Muldoon, "Toward a Bioregional Perspective on International Resource-Use Conflicts: Lessons for the Future" in M. Ross and J.O. Saunders (eds.) Growing Demands on A Shrinking Heritage: Managing Resource-Use Conflicts (Calgary: Canadian Institute of Resources Law, 1992), 187.

Barbara Rutherford and Paul Muldoon, "Designing an Environmentally Responsible Constitution" (1992), Vol. 18, No. 4, Alternatives pp. 26-33.

Paul Muldoon, "Bilateral and Multilateral Dimensions of International Environmental Law" in E. Hughes, A. Lucas, W. Tilleman (eds.) Environmental Law and Policy (Toronto: Emond Montgomery Publications, 1993).

Paul Muldoon, "An Overview to the Development of Environmental Law in Canada" in First North American Conference on Environmental Law sponsored by the Canadian Institute for Environmental Law and Policy, Environmental Law Institute and FUNDEA, Tepotzotlan, Mexico, 1993.

Paul Muldoon and Burkhard Mausberg, "An Introduction to the Law of Biotechnology," in David Estrin and John Swaigen (eds.) Environment on Trial (3d) (Toronto: Emond-Montgomery Press, 1993).

Paul Muldoon and John Swaigen, "The Environmental Bill of Rights" in David Estrin and John Swaigen (eds.) Environment on Trial (3d) (Toronto: Emond Montgomery Press, 1993).

Marcia Valiante and Paul Muldoon, "Annual Review of Canadian U.S Relations - 1992" (1993) vol. 5 International Environmental Policy 200.

Bruce Lourie and Paul Muldoon, NAFTA and the Great Lakes - A Preliminary Survey of Environmental Implications - A discussion paper prepared by Great Lakes United and the Canadian Environmental Law Association in association with the Institute for Agriculture and Trade Policy (November, 1993).

Marcia Valiante and Paul Muldoon, "A Foot in the Door: A Survey of Recent Trends in Access to Environmental Justice" in Proceedings - Sixth CIRL Conference on Natural Resources Law, (Calgary: Canadian Institute for Resources Law, 1993).

Paul Muldoon and John Jackson, "Keeping the Zero in Zero Discharge" Alternatives, Fall, 1994.

Paul Muldoon and Richard Lindgren, The Environmental Bill of Rights: A Practical Guide (Toronto: Emond Montgomery Publications, 1995).

Lee Botts and Paul Muldoon, The Great Lakes Water Quality Agreement: Past Successes and Future Uncertainties A report sponsored by Dartmouth College, New Hampshire, 1997.

Marcia Valiante, Paul Muldoon and Lee Botts, "The Great Lakes Water Quality Agreement" in Global Governance, Oran Young (ed.) (1997, MIT Press).

Paul Muldoon and Ramani Nadarajah, "A Sober Second Look- The Regulatory Approach Looks Better When the Context and Consequences of Voluntary Initiatives Are Taken Into Account" in Voluntary Initiatives, Robert Gibson (ed.) (In press).