

**FIRST ANNUAL  
REPORT**

**ON**

**ONTARIO - MICHIGAN  
AIR POLLUTION**

INTERNATIONAL JOINT COMMISSION

1976



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Under the Reference of June 26 and July 8, 1975 from the Governments of the United States and Canada respectively, the International Joint Commission was requested to examine into and report upon the state of air quality in the Detroit-Windsor and Port Huron-Sarnia areas on a continuing basis. The Commission was also asked to report on the measures undertaken to improve such air quality, with particular regard to the 1974 Michigan-Ontario Memorandum of Understanding. In compliance with your request, in that Reference, for reports to be submitted no less frequently than annually, we are directed to transmit this first annual report of the Commission highlighting the current air quality situation in the particular transboundary area under the Reference.

The Commission, in its 1972 report on trans-boundary air pollution in the Detroit and St. Clair River areas, confirmed the existence and quantified the extent of the international air pollution problem in this area. The Commission recommended specific air quality objectives and urged that the State of Michigan and the Province of Ontario cooperate to accelerate existing abatement schedules and to prevent the creation of new pollution sources.

Under the 1974 Memorandum of Understanding the State of Michigan and the Province of Ontario pledged such cooperation, through their existing Michigan-Ontario Trans-boundary Air Pollution (MOTAP) Committee. The Michigan-Ontario joint memorandum established December 31, 1978 as the completion date for their control programs to achieve compliance with objectives compatible to those recommended by the Commission in its 1972 report. The State of Michigan and the Province of Ontario also requested that the International Joint Commission assume responsibility for the monitoring and the implementation of air pollution control programs in this transboundary area.

Pursuant to the Reference, the Commission established and issued a Directive to the International Ontario-Michigan Air Pollution Board on February 3, 1976. The role of the Board is to assist the Commission in coordinating surveillance and monitoring programs related to the air quality in the Detroit and St. Clair River areas. A Plan of Study was submitted within two months for Commission approval, and the first progress report of the Board was presented at the October meeting of the Commission. Attached are a list of the current members of the Board, the Commission's Directive, and the Board's Plan of Study.

Only six months have passed since the International Ontario-Michigan Air Pollution Board Plan of Study was approved by the Commission and the first report submitted by the Board. It will be evident then that, within this brief period, the Board could not conduct detailed studies. This is reflected in the Commission's own report. However, the second report of the Commission should reflect more detailed studies. The following comments are based on the Board's first report to the Commission.

Firstly, the Commission can report that there is an improving trend in the air quality of the area based on a comparison of 1972 and 1975 data. The total amount of suspended particulate emissions in the Sarnia-Port Huron and Detroit-Windsor areas was reduced from more than 950,000 tons per year in 1971 to less than 440,000 tons per year in 1975.

Nevertheless, based on current control strategies, conformance with the Commission's 1972 objectives for suspended particulates will not be achieved by the end of 1978 in these areas. Efforts have been made to obtain full application of the current regulatory requirements on all affected non-complying sources. However, the MOTAP Committee and the Board have suggested that it would be unrealistic to expect short-term or even medium-term 100 percent conformance with the 1972 Commission objectives.

This is due to a variety of factors such as meteorological conditions and unavoidable, and "difficult-to-control" emissions such as road dust, open fields and fires. Thus, although the trend in air quality is improving, a variety of additional control strategies are now being explored by the Commission's International Ontario-Michigan Air Pollution Board before the Commission can consider specific recommendations on amended objectives.

The 1-hour and 24-hour sulphur dioxide concentration objectives recommended by the Commission in its 1972 report are not likely to be achieved by the end of 1978 on the Ontario side of the St. Clair River, despite an improving trend. New point source control strategies for this region are under consideration by the Board. However, these sulphur dioxide objectives are expected to be achieved by the end of 1978 in the Port Huron and Detroit-Windsor areas.

Furthermore, there is a fundamental difference between sulphur dioxide requirements for Michigan and those for the Commission. The United States and Michigan requirements are the same as are those of the Commission and Ontario. The differences are to be found in the numerical limits and the time frame. For example, the 24-hour and 3-hour Michigan air quality standards are considered satisfied if the numbers are exceeded no more than once per year, while there is no similar restriction for the Ontario 24-hour and 1-hour criteria. A similar problem also exists with the 24-hour objective for suspended particulates. The Board intends to evaluate these problems.

Maximum 1-hour ozone concentrations recorded in Detroit, Windsor and Sarnia exceeded 0.08 ppm (parts per million) which is the agreed common objective between Ontario and Michigan for the boundary area. Excursions lasted from 38 hours in downtown Detroit to 155 hours in downtown Windsor. The ozone monitoring program is being expanded to help determine appropriate control strategies. On the other hand, carbon monoxide was found not to be a contaminant of transboundary significance. Similarly, measured nitrogen dioxide concentrations met applicable United States and

Ontario requirements. As stated by the Commission in its 1972 report, additional objectives for such parameters will be established by the Commission when warranted.

The number of companies complying with the Commission's 1972 air quality objectives has increased since 1971. Of the 122 point sources with emissions greater than 100 tons of sulphur dioxide or particulates per year in 1971, only 14 are not now in compliance with particulate emission standards and five are not meeting the sulphur dioxide limits. The appropriate control agencies have established compliance schedules for all of these sources not now in compliance, except for three sources exceeding particulate emission objectives. Schedules are being developed for these remaining three.

Contingency plans for rapid responses to emissions of toxic or hazardous substances in the transboundary atmosphere have deficiencies which are being investigated by the MOTAP Committee. However, existing working procedures for the prevention and control of air pollution episodes and nuisance complaints are satisfactory in view of the cooperative spirit of the control agencies in this area.

Lastly, the Commission notes that the Board is working closely with the Michigan-Ontario Transboundary Air Pollution Committee to improve monitoring programs and the ability to assess air quality in the area.



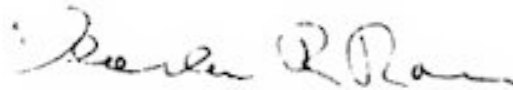
Signed this 21<sup>st</sup> day of December, 1976, as the International Joint Commission's first annual report on Ontario-Michigan air pollution.



Maxwell Cohen



Henry P. Smith III



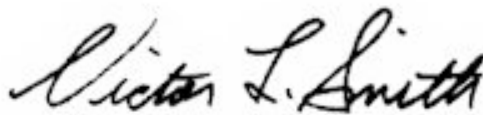
Charles R. Ross



Bernard Beaupré



Keith A. Henry



Victor L. Smith



## **ATTACHMENTS**



**INTERNATIONAL  
MICHIGAN-ONTARIO AIR POLLUTION BOARD**

***United States Section***

Christopher M. Timm, *Chairman*  
Director  
Surveillance & Analysis Division  
Environmental Protection Agency  
Region V

Lee E. Jager  
Chief  
Air Pollution Control Division  
Michigan Department of  
Natural Resources

Morton Sterling  
Director  
Air Pollution Control Division  
Wayne County Health Department

***Canadian Section***

Dr. D.E. Kelley, *Chairman*  
Chief  
Inter-Agency Programs Division  
Air Pollution Control Directorate  
Environment Canada

Tom W. Cross  
Assistant Director  
Air Resources Branch  
Ontario Ministry of the Environment

Fred N. Durham  
Assistant Regional Director  
Southwestern Region  
Ontario Ministry of the Environment



**DIRECTIVE**  
**TO**  
**INTERNATIONAL MICHIGAN-ONTARIO AIR POLLUTION BOARD**

1. The Governments of the United States and Canada have forwarded the attached Reference by identical letters, dated June 26, and July 8, 1975, respectively, to the Commission for examination and report pursuant to Article IX of the Boundary Waters Treaty of 1909.
2. The Commission established the International Michigan-Ontario Air Pollution Board on February 3, 1976, to undertake, through appropriate agencies in the United States and Canada, the necessary investigations and studies and to advise on all matters which the Commission must consider in making its reports to Governments under the attached Reference.
3. The Board shall examine on a continuing basis the state of air quality in the Detroit-Windsor and Port Huron-Sarnia areas and, with particular regard to the Michigan/Ontario Memorandum of Understanding, the measures being undertaken to improve such air quality and shall report to and advise the Commission upon the following:
  - (a) Ambient air quality trends for sulphur dioxide, total suspended particulates and odors.
  - (b) Emissions of sulphur dioxide, total suspended particulates and odors.
  - (c) The effectiveness of enforcement activities directed at reducing the amount of pollution emitted by particular sources.
  - (d) The extent and adequacy of surveillance of air quality, and the adequacy of steps taken by Governments and by private interests to prevent, abate

and control air pollution. Particular reference should be made to the extent of compliance with ambient air quality objectives established by affected Federal, State and Provincial Governments, and to the enforcement activities undertaken by such Governments to reduce the incidence of pollution.

- (e) The Steps taken by affected levels of Government to prepare for, and to respond to, pollution incidents. The Board should consider the adequacy of measures taken to respond to such incidents.
  - (f) The adequacy of regular exchanges of air quality data and reports of progress of compliance with abatement schedules and special problems and other matters which may arise from time to time in implementing the integrated plan outlined in the Michigan/Ontario Memorandum of Understanding.
  - (g) Such other matters as the Commission may indicate to the Board from time to time.
4. The Board shall submit to the Commission annual reports no later than March 15 of each year and progress reports no later than September 15 of each year on the matters set forth in paragraph 3. In addition, the Board shall submit to the Commission such interim or special reports as the Commission may request or the Board may consider appropriate. These reports will assist the Commission in preparing its reports to Governments as required by the Reference.
5. The Board shall prepare and submit for Commission approval, by April 1, 1976, a preliminary work plan for the Board's activities under this Directive. The plan should include an estimate of the personnel and costs involved. This plan should also address the matter of appropriate public involvement in the Board's activities.



6. The Board shall carry out the program in accordance with the work plan approved by the Commission. If it appears to the Board at any time in the course of its activities and studies that the program should be modified, it shall so advise the Commission and request instructions.
7. In the conduct of its activities and in the preparation of its reports, the Board shall make use of information and technical data heretofore available, or which may become available during the course of the Board's work. In this regard the Board shall, in consultation with the appropriate jurisdictions, develop and submit to the Commission for approval, procedures for obtaining from the Governments concerned status reports providing complete information on their monitoring and surveillance activities, their compliance schedules and the implementation of such schedules, their enforcement actions, their contingency plan activities and such other information as may be relevant to the Board's responsibilities.
8. The Board will consist of a United States Section and a Canadian Section, each having three members. The Commission will appoint one member of each Section to be Chairman of that Section. At the request of any member, the Commission may approve in each case an alternate member to act in the place and stead of such member whenever the said member, for any exceptional reason is not available to act as a member of the Board.
9. Members of the Board, and of its committees and working groups, whether or not employed by departments or agencies of government, are not representatives of their employers. They serve in a personal and professional capacity under the direction of the Commission, and their employers or superior officers are not committed in any way by the actions of the individual members or of the Board.

10. In carrying out its functions under this Directive, the Board shall operate as a unitary body, acting jointly in both countries in a coordinated and integrated manner.
11. The Chairmen of the two Sections shall be joint Chairmen of the Board and shall be responsible for maintaining proper liaison between the Board and the Commission and between their respective sections of the Board and the corresponding sections of the Commission.
12. Each Chairman shall ensure that the other members of his Section of the Board are informed of all instructions, inquiries and authorizations received from the Commission; also of activities undertaken by or on behalf of the Board, progress made and any developments affecting such progress.
13. A Chairman, after consulting the other members of his Section of the Board, may appoint a Secretary of that Section. Under the general supervision of the Chairman, the Secretary shall carry out such duties as are assigned to him by the Section.
14. The Board may establish such committees and working groups as may be required to discharge its responsibilities effectively and may enlist the cooperation of federal, provincial, state, county or municipal departments or agencies in the United States and Canada. The duties and composition of any such committees shall be subject to approval by the Commission. Members will make their own arrangements for reimbursement of necessary expenditures for travel.
15. The Board shall maintain informal liaison with the International Air Pollution Advisory Board to the end that each Board may be aware of any activities of the other which may be useful to it or may have a bearing on the conduct of investigations and programs for which it is responsible. In this regard, the Board

shall send to the Advisory Board a copy of each report submitted to the Commission.

16. In addition, the Chairmen shall keep the Commission currently informed of any developments, actual or anticipated, which are likely to impede, delay or otherwise affect the carrying out of the Board's responsibilities.
17. If, in the opinion of the Board there is a lack of clarity or precision in any instruction, directive or authorization received from the Commission, the matter shall be referred promptly to the Commission for appropriate action.
18. The Board shall not conduct public hearings but will be provided with copies of the record of any hearing conducted by the Commission which relates to matters within the Board's terms of reference.
19. In its dealing with the public and the news media, the Board shall observe the principles of the Public Relations Policy of the Commission as set forth in the attached memoranda dated July 27, 1973, and September 20, 1974, as supplemented by the provisions of the work plan of the Board when approved by the Commission.

Adopted 3<sup>rd</sup> day of February, 1976.

William A. Bullard  
David G. Chance  
Joint Secretaries  
International Joint Commission



INTERNATIONAL MICHIGAN-ONTARIO  
AIR POLLUTION BOARD

**PRELIMINARY STUDY PLAN**

APRIL 1, 1976



The international flow of air pollution between the Province of Ontario and the State of Michigan has been a subject of great concern to the citizens and governments of each country. That the citizens of one country were affected by the air pollution sources of the other was never in doubt; there was a 1949 reference to the IJC regarding the impact of smoke and soot and other pollutants emitted by vessels on the Detroit River. The IJC used this reference to identify the full magnitude of the pollution problems in the area in their 1952 and 1969 Annual Reports. However, the full magnitude of these effects was not determined until the International Joint Commission, at the request of the Governments of the United States and Canada, published its report, "Transboundary Air Pollution", in 1972 which addressed the air pollution in the Detroit-Windsor and Sarnia-Port Huron areas.

These areas, which are also the transboundary areas of concern to this Board, are shown in Figure 1. The I.J. C. study confirmed the existence of an international air pollution problem, quantified the transboundary flow of air pollutants, and recommended that the State of Michigan and the Province of Ontario accelerate their abatement schedules and cooperate to prevent the creation of new sources of transboundary air pollution.

At the Governors and Premiers Great Lakes Conference in August 1971, a resolution was passed recommending that "a committee composed of the heads of the air pollution control agencies for the State of Michigan, Wayne County and the Province of Ontario be established and that they be directed to present to this Conference within six months a proposal setting forth an integrated cooperative program for the abatement of transboundary air pollution, and, that such a program be used as a basis for future cooperative integrated programs in other areas as the need arises."

As directed by the Conference, the Michigan-Ontario Transboundary Air Pollution Committee (MOTAPC) was formed and published the 1973 report "An Integrated Co-operative Air Pollution Control Program," which details the objectives and methods

of cooperation between our two countries. As a result of this report, Governor Milliken of Michigan and Premier Davis of Ontario signed the memorandum of Understanding on Transboundary Air Pollution Control in Southwestern Ontario-Southeastern Michigan" which is attached as Appendix A. This memorandum requested the IJC to assume responsibility for monitoring progress of implementing programs for air pollution control in the transboundary area. They also pledged mutual cooperation through the previously established MOTAPC to achieve compliance with the following air quality objectives.

### **GENERAL OBJECTIVES**

The air flowing in either direction across the International Boundary in the Detroit River and St. Clair River areas should be:

1. Free from contaminants which have harmful effects on human health.
2. Free from objectionable odors, haze, dirt, and other contaminants which interfere with the normal amenities of living or cause adverse aesthetic effects.
3. Free from contaminants which have deleterious effects on property, materials, and vegetation.

### **SPECIFIC OBJECTIVES**

The ambient air quality for each jurisdiction in the Detroit River and St. Clair River areas shall be considered satisfactory if the measured:

1. Sulphur dioxide concentration for
  - a. 1 hour is less than 0.25 ppm of air; and for



- b. 24 hours is less than 0.10 ppm of air.
  2. Total suspended particulate concentration as determined by high-volume samplers and at 1 atmosphere and 70°F for
    - a. 24 hours is less than 120 µg/m<sup>3</sup>; and for
    - b. 1 year the annual geometric mean is less than 60 µg/m<sup>3</sup>.
  3. Offensive odors are absent.

The Governments of the U.S. and Canada requested the IJC overview of the air pollution abatement progress in the transboundary area of concern in mid 1975 and the International Michigan-Ontario Air Pollution Board was established on February 3, 1976, to examine into and report on the state of air quality in the Detroit/Windsor and Port Huron/Sarnia areas and on the measures taken to improve such air quality. The specific terms of reference are:

1. Ambient air quality trends for sulphur dioxide, total suspended particulates and odors and the extent of compliance with ambient air quality objectives established by affected Federal, State and Provincial Governments.
2. Emissions of sulphur dioxide, total suspended particulates, and odors.
3. The effectiveness of enforcement activities directed at reducing the amount of pollution emitted by particular sources.
4. The extent and adequacy of surveillance: of air quality, and the adequacy of steps taken by Governments and by private interests to prevent, abate and control air pollution.
5. The steps taken by affected levels of Governments to prepare for, and respond to pollution incidents.
6. The adequacy of regular exchanges of air quality data and reports of progress of compliance with abatement schedules, and special problems and other matters which may arise from time to time in implementing the integrated plan

outlined in the Michigan/Ontario Memorandum of Understanding.

Recognizing the spirit of cooperation and excellent working arrangements that already exist between Michigan, Ontario and Wayne County through the Michigan-Ontario Transboundary Air Pollution Committee, the Board proposes to interact with that committee as much as possible in carrying out the terms of reference and to utilize their expertise, with jurisdictional permission, in the development of the technical reports and appropriate recommendations warranted.

The preliminary work plan for the terms of reference is as follows:

1. Status of Air Quality and evaluation of data with respect to both ambient air quality objectives and developing problems. The MOTAPC will be requested to provide data summaries, trend analysis and evaluations for inclusion in the annual reports and to provide air quality updates for each Board meeting and progress report to the IJC.
2. Emission Inventory - MOTAPC will be requested to update and maintain current an emission inventory for all major ( $\geq 100$  actual tons of TSP or SO<sub>2</sub> per year) sources and to provide an annual report.
3. Effectiveness of Enforcement Activities. - The Board will request compliance status reports for all major sources identified in No. 2 above and review the action being taken to achieve compliance. Further, the air quality trends will be reviewed by the Board to determine if the objectives will be met and that areas of good air quality are being sustained. In addition existing standards will be reviewed for compatibility and completeness.
4. Surveillance. MOTAPC will be requested to perform an annual review and update of the TSP and SO<sub>2</sub> network and recommend changes. Further, they will be requested to recommend monitoring programs for other air pollutants as the need arises.



5. Response to Pollution Incidents. The Board will perform three functions in this area. First, the existing emergency action plans for air pollution episodes (criteria pollutants) will be evaluated for adequacy. Second, the jurisdictional mechanisms for response to nuisance (not injurious to public health) emissions such as soot discharges, odors, etc. will be reviewed. Third, the contingency plans for response to toxic or hazardous air spills will be evaluated especially with respect to transboundary communications and coordination.
  
6. Data Exchange. - The Board foresees MOTAPC to be the primary mechanism for data exchange between the two countries and considers it the primary source of data for the IJC related activities.

In functioning, the Board will evaluate costs inherent in fulfilling the terms and the best mechanism for encouraging public involvement and awareness. At this stage, the Board hopes to operate within the budgets of the participating agencies. An estimate of personnel and cost to fulfill the prescribed duties will be made in the next annual report. Further, areas where supplemental funding may be necessary will be identified as they arise.

The Board favors public involvement as much as is possible while still fulfilling the assigned duties. Methods for public involvement are being evaluated and a specific mechanism will be proposed in the future. In the interim, it is requested that the IJC allow an early public release of this preliminary work plan.

The Board will meet as often as is necessary to assure satisfactory progress of the terms of reference but at least twice annually. Further, the Board proposes to invite reports from such public and private bodies (governmental, professional groups, industry, non-profit organizations, etc.,) that are pertinent to the issues being addressed.



## **APPENDIX A**

### **MEMORANDUM OF UNDERSTANDING ON TRANSBOUNDARY AIR POLLUTION CONTROL IN SOUTHWESTERN ONTARIO-SOUTHEASTERN MICHIGAN AREA**

WHEREAS, the Governor of the State of Michigan of the United States of America and the Premier of the Province of Ontario Canada:

Are Determined to restore air quality along the boundary in the Detroit and St. Clair River area;

Have accepted and developed control programs for the improvement of air quality in their respective jurisdictions directed toward achieving air quality standards for the protection of public health, welfare and property;

Are intent upon accelerating control programs for the improvement of air quality impaired by existing sources of air pollution in the Detroit and St: Clair River area;

Are desirous of assuring co-operation to prevent the creation of new sources of transboundary air pollution;

Have accepted the 1973 report on "An Integrated Co-operative Air Pollution Control Program" as prepared by the air pollution control agencies of the State of Michigan, the Air Pollution Control Division of the Wayne County (Michigan) Health Department and the Province of Ontario;

Have accepted the proposal to implement compatible programs consistent with the objectives recommended by the International Joint Commission;

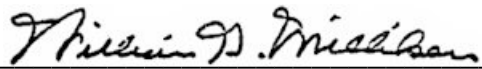
Have requested the Government of the United States and the Government of Canada to request the International Joint Commission to assume responsibility for monitoring progress of implementing programs for the control of air pollution in the transboundary area;

THEREFORE, we, William G. Milliken, Governor of the State of Michigan, and William G. Davis, Premier of the Province of Ontario, hereby pledge our co-operation in implementing air pollution control programs to achieve compliance with the air quality objectives recommended by the International Joint Commission. Unless otherwise agreed, these control programs and other measures shall be completed by December 31, 1978. *The* programs shall include:

- 1) Controls over point sources of pollution including surveillance of marine sources,
- 2) Monitoring and surveillance of air quality,
- 3) Maintenance of joint procedures for action to control and prevent episodes of air pollution which may be observed or predicted, and Regular exchange of air quality data and reports of progress of compliance with abatement schedules, special problems and other matters which may arise from time to time *in* implementing the integrated plan.

December 5, 1974


Date

  
\_\_\_\_\_

for the State of Michigan

November 21, 1974

Date

  
\_\_\_\_\_

Province of Ontario