

TORONTO STAFF REPORT

June 29, 2004

To: Board of Health
From: Dr. Barbara Yaffe, Acting Medical Officer of Health
Subject: Agenda for Action on Air and Health

Purpose:

Given the persistent air pollution problems experienced in Toronto, and the significant burden of illness associated with that air pollution, this report was prepared to identify actions that could be taken by key provincial agencies to improve air quality in Toronto and other parts of the province.

Financial Implications and Impact Statement:

There are no financial implications for the City associated with this report.

Recommendations:

It is recommended that the Board of Health:

- (1) request the Premier of Ontario to commit the Province of Ontario to contribute one-third of the long-term funding needed for TTC's "state of good repair" plan and "ridership growth strategy" to both rehabilitate and renew the existing infrastructure and increase transit service and ridership;
- (2) request the Premier of Ontario to move quickly on the recommendations of City Council to establish a Smart Growth process within the Greater Toronto Area that promotes healthy communities, protects natural resources, addresses gridlock, and improves air quality;
- (3) request the Ministers of Energy, the Environment, and Housing and Municipal Affairs to:
 - (a) develop a regulation that mandates the phase-out of coal-fired plants by 2007;

- (b) establish an ambitious schedule of targets of electricity demand to be reduced with energy efficiency/ conservation (e.g. 10% reduction by 2007, 20% by 2010, 30% by 2015, 40% by 2020);
 - (c) instruct the Ontario Energy Board to adopt a policy that makes it profitable for utilities to effectively reduce electricity use among their customers;
 - (d) establish an Energy Efficiency Fund to be used to increase energy efficiency in existing schools, low income housing units, hospitals and other appropriate institutions;
 - (e) revise the *Ontario Building Code* to maximize energy efficiency, encourage co-generation, and promote utilization of renewable technologies such as solar-heated water tanks;
 - (f) establish an ambitious schedule of Renewable Portfolio Standards (RPS) that mandates the minimum percentage of electricity that must be sourced from renewable sources by all utilities (e.g. 10% by 2010, 20% by 2015, 30% by 2020);
 - (g) develop a regulation that ensures that all new electrical generating facilities providing electricity to the province meet or exceed the emissions performance of combined cycle natural gas (CCNG) generators for SO_x, NO_x, mercury and carbon dioxide;
 - (h) develop policies that encourage the establishment of high efficiency natural gas generators and co-generation to maximize fuel efficiencies and minimize emissions of air pollutants and greenhouse gases; and
 - (i) ensure that all newly installed residential gas and wood fireplaces and stoves meet the low-emission certification requirements of the CSA and/or EPA;
- (4) request the Minister of the Environment:
- (a) in consultation with the Minister of Health and Long-Term Care and with respect to ambient air quality criteria (AAQC) to:
 - i) update the AAQC for carbon monoxide, sulphur dioxide and nitrogen dioxide and ensure that they are protective of human health;
 - ii) establish 8-hour air standards of 60 ppb and 50 ppb for ozone to be achieved by 2010 and 2015 respectively;
 - iii) Establish 24-hour standards of 25 ug/m³ and 20 ug/m³ for PM_{2.5} to be achieved by 2010 and 2015 respectively;
 - iv) review the standards for ozone and PM_{2.5} on a regular basis to move them towards the lowest adverse effect and/or background levels; and

- (b) with respect to point sources that contribute to local air quality concerns to:
- i) accelerate efforts to update air standards;
 - ii) replace existing air dispersion models in Regulation 346 with the new U.S. EPA models;
 - iii) replace the ½-hour Point of Impingement (POI) standards with appropriate effects-based standards and averaging times;
 - iv) utilize regional air dispersion modeling to assess cumulative impacts;
 - v) continue to review Certificates of Approval (CofA) and audit facilities to ensure that facilities are operating in compliance with air standards;
 - vi) give high priority to greater transparency in the development of, and full public consultation on, the Risk Management Framework for Air;
 - vii) establish consultation processes that allow meaningful input from public health units and/or local governments and the broader community on:
 - proposed air standards and guidelines;
 - the approval of CofAs; and
 - compliance related information for air standards;
 - viii) establish accessible databases that contain air emissions data that can be used by public health units and/or local governments for air quality planning purposes; and
 - ix) work towards the development of a regulatory process that allows consideration of cumulative impacts;
- (c) with respect to point sources that contribute to regional air quality concerns to:
- i) develop a regional air quality plan that identifies the reductions in smog-forming precursors that will be needed over time from Ontario's industrial and electrical sectors;
 - ii) clearly commit to the attainment of the 45% and 50% emission reduction targets for NO_x and SO₂ by 2010 as the first targets for regional air quality in Ontario;
 - iii) target the attainment of the 2010 Canada Wide Standards for PM_{2.5} and ozone as the second targets;
 - iv) work towards achieving air levels that are below the health-based reference levels for PM_{2.5} and ozone as the long-term goal;
 - v) develop a strategy that clearly identifies how emissions, measured in tonnes, will be reduced over time from the industrial sector as a whole and from industrial sub-sectors; and
 - vi) ensure that the emission reduction strategy for the industrial sector is translated into regulations that are mandatory and enforceable at a facility level;

- (d) with respect to emissions from on-road vehicles and off-road equipment to:
 - i) align limits for sulphur levels in off-road diesel fuel with those for on-road diesel fuel when sold in large urban centres such as Toronto; and
 - ii) establish special funds to encourage transit authorities and school boards to reduce emissions from diesel-fuelled buses by promoting the replacement of older buses, retrofitting with emission control devices, and/or the use of cleaner fuels;
 - (e) ensure that air quality planning functions are adequately resourced, integrated and coordinated across the Ministry and that air quality planning information is made accessible to the public and shared openly with public health units and/or local governments across the province;
 - (f) examine different models of public consultation and ensure that consultation processes conducted on future Ministry regulations, standards and CofAs are fair, transparent and equitable;
 - (g) with respect to the Air Quality Index (AQI) and smog messaging system to:
 - i) collaborate with, and actively support, the federal government's development of a formulation for the AQI that reflects the combined health effects of simultaneous exposure to the key air pollutants;
 - ii) continue to support the federal/provincial process to develop an effective smog messaging system for air quality indices used across the country; and
 - iii) Revise Ontario's AQI notification system to ensure that smog alerts are issued whenever the AQI is forecast to reach, or unexpectedly reaches, a value of 50 or greater;
- (5) request the Ministers represented on the Conservation Action Team to:
- (a) collaborate with "20/20 The Way to Clean Air", the "One-Tonne Challenge", and the "Smart Commute" campaigns to strengthen and support existing efforts to engage residents in energy conservation activities; and
 - (b) have the Government of Ontario involve "20/20 The Way to Clean Air", the "One-Tonne Challenge", and the "Smart Commute" campaigns in the provincial energy conservation strategy;
- (6) request the Minister of Health and Long-Term Care to:
- (a) enhance the capacity of the Public Health Division to address environmental health issues including a focus on air pollution;

- (b) adequately resource and enhance the capacity of local public health units across the province to address air pollution and other environmental risks to human health; and
 - (c) revise the Mandatory Health Programs and Services Guidelines to ensure enhancement of program requirements related to protection of health from environmental hazards, including an explicit focus on air pollution; and
- (7) forward this report to the Ontario Public Health Association (OPHA), the Ontario Medical Association (OMA), the Ontario College of Family Physicians (OCFP), the Association of Local Public Health Agencies (alPHa) and every public health unit in Ontario for information;
 - (8) forward this report for information and appropriate action to the Chief Administrative Officer, the Commissioners of Urban Development Services and Works and Emergency Services, and to City Council for information and follow-up action as warranted; and
 - (9) authorize and direct appropriate City Officials to take the necessary action to give effect thereto.

Background:

In Toronto, as in many large urban centres in industrialized nations, air quality continues to present a significant concern for public health. The updated burden of illness estimates indicate that the five key air pollutants contribute to about 1,700 premature deaths and 6,000 hospitalizations each year in Toronto. These severe health impacts, and the much larger number of less severe health outcomes they represent, are preventable.

The City has gone to considerable lengths to address Toronto's air quality. It has, for example, developed an Official Plan that encourages mixed land use, compact urban form, re-urbanization, and alternative modes of transportation; extended its energy efficiency program across the amalgamated City of Toronto; supported community- and government-based research and projects through the Toronto Atmospheric Fund (TAF); and developed, in consultation with other public health units in the Greater Toronto Area, a social marketing campaign that aims to reduce home energy and vehicle use by individuals across the community. However, in many ways the City lacks the jurisdiction, the authority and/or the resources needed to address poor air quality.

Over the last decade, important steps have been taken by the Federal and Provincial governments to address air quality as well. The Federal government, which has the authority to establish national fuel and vehicle standards, has introduced new standards that promise huge reductions in emissions from light-duty and heavy-duty vehicles in the coming years. The Provincial government has successfully developed and implemented an inspection and maintenance program for existing vehicles (i.e. *Drive Clean*). There is however much more to be done.

Given the authority and mandate of the provincial government regarding many of the issues that impact on air quality in Toronto -- such as land-use planning, energy policies, transportation planning, industrial emissions, and air quality standards -- Toronto Public Health has undertaken a review of actions that could be taken by the Province, guided by the emission sources that have the greatest potential to impact on human health in Toronto and the advice of experts in the field.

The attached report “Agenda for Action on Air and Health” (see Appendix 1) was prepared by Toronto Public Health, in consultation with staff from the Office of the Chief Administrative Officer, Works and Emergency Services, Finance and Urban Development Services, along with numerous air quality experts in the broader community. The report provides a comprehensive set of recommendations directed at key provincial ministries, as well as a rationale for their importance and benefit to the promotion of health. While this report has been prepared with a clear sense of Toronto’s needs, many of the recommendations would result in enhanced air quality and human health in communities across the province.

Comments:

In terms of emissions sources and potential for exposure, the transportation sector is the most significant source of air pollution within the City. The industrial sector and fuel consumption for activities such as electricity generation and home heating are important sources of air emissions within the City as well. Toronto’s air quality is also affected by emissions from large point sources upwind of Toronto in southwestern Ontario and the mid-western United States.

Based on an examination of emission sources and existing policies, this report takes a multi-pronged approach dividing issues and recommendations into several priority areas:

- (1) Reducing emissions from, and reliance upon, the transportation sector;
- (2) Reducing emissions from fuel consumption for activities such as electricity generation and home heating;
- (3) Reducing emissions from point sources that contribute to local and regional air quality concerns; and
- (4) Enhancing support systems needed to encourage air quality improvements.

For the transportation sector, the two goals deemed most significant for air quality are: a) Increasing ridership on public transit within the Greater Toronto Area; and b) Curbing urban sprawl and integrating land-use and transportation planning across the Greater Toronto Area. This will decrease dependence upon cars and trucks and encourage the use of alternative modes of transportation such as walking, biking and public transit. Two recommendations are also directed at reducing emissions from on-road and off-road diesel vehicles and equipment.

To address emissions associated with fuel combustion for activities such as electricity generation and home heating, it is recommended that the provincial government ensure the phase out of

coal-fired power plants. This can be achieved by: a) Aggressively promoting energy efficiency to reduce energy demand; b) Promoting development and utilization of renewable energies to meet mid- to long-term energy needs; and c) Encouraging the development of high efficiency natural gas generators and co-generation to meet short- to mid-term energy needs. The phase-out of coal plants will also strengthen Canada's hand when negotiating agreements with the United States (U.S.) to address transboundary air pollution because U.S. coal-fired power plants are significant contributors of the transboundary air pollution that affects southern Ontario.

To address emissions associated with point sources that contribute to local and regional air quality concerns in southern Ontario, it is recommended that the Province continue to improve the Certificate of Approval process for local air quality and develop a regional air quality plan that mandates significant reductions in smog-forming precursors from Ontario's industrial sector.

A number of recommendations are directed at enhancing the support systems needed to encourage air quality improvements. These address the need for: a) Health protective air quality criteria that will drive enhancements in government policies, Certificates of Approval, and individual actions; b) Consultation processes that are fair, transparent and equitable; c) Solid information that can be used to assess, monitor and develop the impact of air quality policies on local and/or regional air quality; d) Enhanced resources to build air quality capacity within the public health sector; e) Collaboration on social marketing campaigns that encourage the behavioural shifts needed among individuals to reduce energy and vehicle use; and f) Improvements in the Air Quality Index and smog messaging system used to inform the public about the health hazards presented by varying levels of air pollution.

At the 5th Annual Smog Summit convened on June 21, 2004 in Toronto by the GTA Clean Air Council to provide the three orders of government the opportunity to announce commitments on air quality, the Ontario Minister of Environment announced several ways in which the Ministry intends to move forward on point sources that contribute to local and regional air quality. While these recent announcements are a welcome indication of renewed interest by the province to address serious air pollution issues, particularly as they relate to the industrial sector, they do not diminish the need for moving ahead on a comprehensive action plan as described in the attached report "Agenda for Action on Air and Health" (see Appendix 1).

Conclusions:

In Toronto, as in large urban centres around the world, air quality continues to present a significant concern for public health. The updated estimates indicate that the five key air pollutants contribute to about 1,700 premature deaths and 6,000 hospitalizations each year in Toronto. Information available on emission sources within the City indicates that the transportation sector is the most significant source of emissions. Other important sources include electricity generation, fuel consumption for activities such as home heating, and industrial operations. Air quality in Toronto is also affected by large point sources that are upwind in southwestern Ontario and the Midwestern United States.

Over the last few years, progress has been made on many fronts by all levels of government. However, there is still more work to be done. This report, which is directed at the actions that could be taken by the provincial government, has identified several priority areas: 1) Reducing emissions from, and reliance upon, the transportation sector; 2) Reducing emissions from fuel consumption for activities such as electrical generation and home heating; 3) Reducing emissions from point sources that contribute to local and regional air quality concerns; and 4) Enhancing the support systems that encourage air quality improvements.

Key among the recommendations for the transportation sector are those directed at providing significant and sustainable funding to expand ridership on public transit across the GTA, and establishing an effective “smart growth” process to curb urban sprawl and integrate land-use and transportation planning across the GTA.

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List of Attachments:

Appendix 1: “Agenda for Action on Air and Health”. Toronto Public Health. July 2004