

Preliminary Examination:

**Regional Models for
Air Quality Improvement**

Prepared for the
GTA Clean Air Council
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Introduction

Several regional models for air quality improvement in North America were identified by the GTA Clean Air Council, ICLEI and Environment Canada as worthy of examination for lessons that might be applied to the GTA Clean Air Council. They included the South Coast Air Quality Management District in California, the Clean Air Counts program in Chicago, the Greater Vancouver Regional District, the Alberta Clean Air Strategic Alliance, and the Clean Air Hamilton process. The websites for each of these programs were searched, relevant documents were reviewed, and individuals in each organization were interviewed by telephone to determine the mission, structure, functions, staff support, funding arrangements and effectiveness of each organization and/or process.

This is a preliminary investigation that was conducted with limited resources. Consequently, it was not possible to make multiple contacts for each model to poll the opinion of a variety of individuals who may have different perspectives on the strengths and weaknesses of each model examined. However, it does provide a first glance summary of a variety of existing models, should evoke some useful discussions about structure, membership, and goals within the GTA Clean Air Council, and does suggest some first steps that should be pursued.

South Coast Air Quality Management District (AQMD)

Mission, Coverage & Authority

- The legislative mission of the AQMD is “to achieve and maintain healthful air quality for its residents”. This mission is to be accomplished with “a comprehensive program of planning, regulation, compliance assistance, enforcement, monitoring, technology advancement and public education”
- The AQMD serves a 4-county region that include Los Angeles; and covers 12,000 square miles and 14 million people.
- This District exceeds the ozone standard set by the federal government about 30% of the time and must meet the standard by 2010. Federal law requires that the area reduce emissions by 5% per year.

Structure

- It is governed by a 12-member Board composed of 9 politicians from the cities and counties covered and 3 citizens appointed by state elected officials.
- The AQMD staff prepare rules and rule amendments for the Board’s consideration.

- Standing Committees, that serve as advisory bodies to the Board, have staff representatives and some citizen representation, and are usually chaired by a member of the Board.
- The public can address board meetings.

Responsibilities & Functions

- The AQMD is responsible for enforcing state and federal laws and can pass rules that are specific to the district.
- It is responsible for controlling emissions from stationary sources which represent about 40% of the region's air emissions.
- It is not responsible for emission standards for mobile sources (that contribute about 60% of the region's emissions) but it implements transportation related programs to reduce the number of cars on the road and promotes the use of cleaner fuels and vehicles.
- It can require employers to reduce emissions from employees with various transportation demand management (TDM) programs but uses public education and training to encourage these activities.
- The AQMD does have voluntary programs that are directed at individuals, institutions, and businesses. These programs seek to educate, inform and encourage behavioural shifts in both sectors that are, and are not, regulated.

Staff Support

- The AQMD has over 1000 people on staff.

Funding

- The AQMD has a budget of \$86 million per year.
- Revenues come from pollution fines and emissions permit fees and from a surcharge on vehicles of \$1 charged by the District and 30% of a \$4 fee charged by the State.

Effectiveness

- In the past decade, the AQMD has reduced the number of Stage 1 Smog Alerts by one half and eliminated Stage II Smog Alerts altogether despite huge increases in population.
- A Stage II Smog alert is called when the AQI exceeds 300, which is triggered by an 8-hour ozone reading of 373 ppb (used to be a 1-hour ozone reading of 403 ppb).
- A Stage I Smog Alert is called when the AQI is between 200 and 300, which is triggered by an 8-hour ozone reading of 124 ppb (used to be a 1-hour ozone reading of 200 ppb).

Contact

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Comments:

- ❑ The AQMD has broad legislative authority, a federally mandated air quality target to achieve, and a significant budget with sustainable funding – all of which differentiates it from the GTA Clean Air Council.
- ❑ However, a number of their programs are voluntary and a number are directed at non-point and mobile sources, and might therefore be applicable to the GTA context.
- ❑ The fact that politicians are on the Board and that the Board is accessible to the public are strengths that could be applied to the structure of the GTA Clean Air Council.
- ❑ Also, the fact that the AQMD has full-time staff to function between meetings is an essential element in its effectiveness.
- ❑ The funding sources may be of interest to the GTA Clean Air Council; particularly the small surcharges applied to vehicles.

Clean Air Counts, Chicago

Mission, Coverage and Authority

- ❑ The Clean Air Counts (CAC) program is a voluntary program that was launched in 1999 to improve air quality in the Chicago region in an innovative and cost-effective way.
- ❑ It was originally driven by the need to meet federally established air quality standards when Chicago was designated as a “severe non-attainment area”.
- ❑ The federal government could, theoretically, withhold federal transportation money (up to \$500 million) from the State for being out of “attainment” with federally mandated air standards.
- ❑ The Illinois EPA (IEPA) recently announced that the State would be complying with the 1-hour ozone standard. However, with increasing population pressure and the pending federal 8-hour standard for ozone, it is expected that the region will not remain in attainment without on-going efforts.

Structure

- ❑ The Clean Air Counts program was initiated by the Metropolitan Mayors (an organization of 270 municipal Mayors from Chicago and the

surrounding region), the Illinois EPA, the US EPA, and is a project of the Delta Institute, a not-for-profit organization.

- A Steering Committee was formed to make policy decisions, share resources, coordinate activities, market the campaigns, and support the development of special initiatives.
- The Committee is composed of approximately 20 representatives from businesses, State and Federal government agencies, not-for-profit organizations, the region's metropolitan planning organization, the regional planning authority and is chaired by a representative of the Metropolitan Mayors Caucus.
- Five campaigns have been developed to address the five different sectors of interest: 1) Clean Air Communities; 2) Clean Air Businesses, Industries and Institutions; 3) Clean Air Development; 4) Clean Air Households; and 5) Clean Air Illinois.
- Each of the five campaigns has an Advisory Committee composed of representatives from the targeted constituencies, leaders from local not-for profit organizations, and public or private sector professionals. For example, the Chicagoland Chamber of Commerce co-chairs the Clean Air Businesses Committee, the City of Chicago's Director of Regional Programs chairs the Clean Air Communities Committee, and a Developer has chaired the Clean Air Development Committee.
- A few organizations invited to Chair the Advisory Committees have been provided with stipends to promote participation by high level leaders and to promote outreach.

Responsibilities & Functions

- While the Chicago Department of Environment has responsibility for enforcing the air pollution control laws established by the City, the State and the Federal government, the Clean Air Counts program is directed at those emissions sources that are not regulated.
- It promotes emissions reduction strategies to businesses, industries, institutions, developers, municipalities, state and federal agencies, and households with the five campaigns.
- Most of the campaign strategies are voluntary but some include incentives to encourage source reductions such as public recognition, cost savings, and the prospect of avoiding future regulations.

Staff Support

- The Delta Institute has provided staff support for the process; as facilitators for the process during the first six months, and up to 4 FTEs as program managers, organizers, technical advisers, lobbyists and administrators for the last two years.

- These individuals meet with partners to encourage action, develop communication tools to reach the public, develop technical resources, administer the process, prepare reports and conduct research, and develop and maintain the website.
- The City of Chicago's Department of the Environment, the US EPA, and Illinois EPA have provided valuable in-kind staff support.
- The US EPA's support was more intense during the start up phase and was directed towards analysing emission reduction strategies and quantifying the emission reductions associated with the various strategies being developed.

Funding

- The Delta Institute solicited Foundation support for the 4 FTEs required for the program's first 3 years. The 4 FTEs are a compilation of time from a number of staff working within the Institute. For example, the two Co-Directors of the Delta Institute have spent about 20 to 30% of their time on this process over the last few years.
- The Metropolitan Mayor's Caucus is interested in taking on the role that the Delta Institute has provided if it can secure the necessary funding.
- A budget of \$9.8 million is being sought for the next 3 years of the program. State and local sources are being asked for \$2.3 million while other sources are being approached for the balance.

Effectiveness

- The Clean Air Counts program has developed a broad scaled implementation plan that could, if fully implemented, result in emissions reductions of 5 tons per day (ie. equivalent to the removal of 80,000 cars from the road each day).
- Over 40 "early adopters" have enlisted to date. Some adopters have already reported their emissions reductions for 2001.
- The US EPA Region V views the strategies, quantification methodology, materials, and lessons learned, as a potential national model.
- After three years, the Steering Committee is still intact and the project has maintained a high level interest from the State, the US EPA Region V, the City of Chicago and the Metropolitan Mayors Caucus.
- The State of Illinois' Governor signed a recent Executive Order promoting many of the Clean Air Counts' strategies and its Green Illinois Coordinating Council is working with the Delta Institute to enlist other State agencies as early adopters.

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Contact

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Comments:

- The Clean Air Counts program has three important features that make it applicable to the GTA context:
 - It is a voluntary program directed at non-regulated businesses, institutions, communities and households;
 - It has been initiated by a number of municipalities that share a common air shed and have no legislative authority to act as a regional body; and
 - It has been successful with a relatively modest budget (4 FTEs).
- The CAC context differs from the GTA context in that it has been driven to some extent by the need to comply with federally mandated air standards.
- The CAC strategies, quantification methodology, and materials, can be adopted by, and applied to other jurisdictions.
- The success of the program appears related to several factors:
 - Funding that has provided a staff complement equivalent to about 4 FTEs;
 - On-going political support from the Metro Mayors Council;
 - Participation of high level leaders from the business, government and not-for-profit organizations in Advisory Committees; and
 - A high level of technical support from the US EPA.

Greater Vancouver Regional District (GVRD)

Mission, Coverage & Legal Authority

- The GVRD covers 21 municipalities and captures much of the Lower Fraser Valley that experiences smog episodes similar to those in the Windsor-Quebec Corridor.
- The intent of the GVRD's Air Quality Management Plan is to "work cooperatively with the community to shape regional land use and transportation, encourage clean air lifestyles, and manage emissions from human activity so as to protect human health and ecological integrity both within the region, in neighbouring jurisdictions within the Lower Fraser Valley, and globally".
- The Plan's Objective is to reduce total emissions of common air contaminants -- SO_x, NO_x, PM, CO, VOC -- by 38% from 1985 levels by the year 2000.
- The Plan applies to 2 million residents living in the GVRD; 50% of the population of British Columbia.
- In the GVRD, 75% of air emissions of the five common air pollutants were from motor vehicles; there were 1.15 million vehicles in 2000.

Structure

- The Greater Vancouver Regional District (GVRD) is a partnership of the 21 municipalities and one electoral area that make up the metropolitan area of Greater Vancouver. The GVRD's board of directors is comprised of mayors and councillors from the member municipalities, on a proportional representation basis. Directors for each municipality are appointed by their municipal council.
- The Lower Fraser Valley Air Quality Advisory Committee (LFV AQAC) provides a forum for information sharing and consultation on air quality initiatives, and consists of representatives from industry, business, NGOs, adjacent air quality agencies (e.g. the Northwest Air Pollution Authority [NWAPA] from Washington State), and the public health sector.
- This advisory Committee functions on a voluntary basis, is facilitated by an independent professional facilitator, and receives funding from the GVRD, the provincial government and the Fraser Valley Regional District (FVRD). This Committee allows for on-going stakeholder and public involvement in program development and implementation.

- The Lower Fraser Valley Air Quality Coordinating Committee (LFV AQCC) consists of staff from GVRD, FVRD, NWAPA, the provincial Ministry of Water, Land and Air Protection, and Environment Canada.
- This Committee meets quarterly, enabling staff from agencies with air quality mandates to share information and coordinate policies and programs.

Responsibilities & Functions

- The provincial government has delegated responsibility for the monitoring of air quality and enforcement of air quality regulations within the greater Vancouver area to the GVRD.
- In addition to delegated responsibilities, the GVRD has a substantial number of staff dedicated to Air Quality Planning; these staff are responsible for maintaining a current emissions inventory for the region, and assessing, developing, implementing and evaluating emission reduction strategies.
- The Air Quality Planning group has been recently integrated with the Land Use Planning group at the GVRD so air quality and greenhouse gas emission issues can be more fully integrated into planning and development decisions.
- The Air Quality Management Plan (AQMP) was adopted in 1994 after five years of planning that included: 1) development of an emissions inventory, 2) air quality monitoring, 3) modeling of emissions, 4) consultation with the

- public, stakeholders and decision-makers about goals and priorities, and 5) the development of priority emissions reduction strategies.
- The AQMP identifies the strategies needed for different emission sources and identifies the jurisdiction that has responsibility for those strategies.
 - The AQMP identifies 54 emission reduction measures to be developed for the three emission sectors – point sources, area sources and mobile sources.
 - The GVRD has had great success reducing emissions from the transportation sector with its AirCare program (ie. a vehicle inspection and maintenance program) and from industrial point sources (e.g. the Burrard Thermal Generation Plant).
 - It is now beginning to focus on area sources with initiatives such as a proposed regulation for industrial and commercial boilers and heaters, and with energy efficiency initiatives that will be directed at homes, businesses and institutions.
 - The GVRD's Demand Side Management Division (DSM) is responsible for developing and enforcing emission regulations and site-specific permits for industry.
 - DSM has a policy development function that includes development of economic instruments and cross-utility policy objectives, and a business services function that includes development and implementation of business friendliness initiatives.
 - The DSM Division is also very active in developing voluntary programs, and encouraging the implementation of new innovative technologies (for example, the use of solar energy for heating municipal swimming pools) as alternate means to the end of reduced emissions.
 - The DSM Division works in partnership with other agencies and organizations to promote voluntary and innovative initiatives.
 - DSM is also looking at ways to incorporate multi-media considerations (i.e. solid and liquid waste management, water conservation, and air quality) in program design and implementation.

Staff Support

- The GVRD has about 60 FTEs involved in air quality monitoring and assessment, air quality control and enforcement, and air quality planning.

Funding

- The air quality budget of the GVRD is in the neighbourhood of \$6 million per year.
- About \$400,000 a year is directed as the upkeep of the emissions inventory because the inventory is considered essential to the development and assessment of Air Quality Planning strategies.

- About half of the air quality budget comes from permit fees for industrial point sources and the other half comes from municipal taxes collected for the GVRD.

Effectiveness

- Emissions of the five common air pollutants targeted in the 1994 AQMP have been reduced by an estimated 42% between 1985 and 2000 despite a growing population.
- The greatest share of emissions reductions has come from the transportation sector as a result of the AirCare program (developed by the GVRD and implemented by the province) and as a result of provincial and federal regulations directed at vehicle emissions (some of which had been recommended by the GVRD).

Contacts

Patrice Rother, Air Quality Planner, GVRD 604-451-6696
Nicholas Heap, Air Quality Planner, GVRD 604-436-6787
Morris Mennel, Former Administrator of Air Quality Planning, GVRD, on secondment as Head of Air Quality Management, Environment Canada, Pacific & Yukon 604-666-2815

Comments

- While a number of the staff working on air quality in the GVRD are doing work that the provincial government would do in Ontario, it appears that a number are doing Air Quality Planning work that is not being done to any substantial degree by any level of government in Ontario.
- Air quality monitoring data and emissions inventories data are considered the two foundations upon which all Air Quality Planning is based. Consideration of health impacts and addressing public concerns are becoming increasingly important over time. The GVRD operates one of the most extensive ambient air quality monitoring networks of any urban area in North America, consisting of a total of 24 permanent air quality stations.
- While the GVRD has a great deal of legislative and enforcement authority in the area of air quality, it has a number of strategies and programs that are directed at area and transportation sources that are not regulated that may be applicable to the GTA context.
- The integration of Air Quality Planning with Land Use Planning on a regional basis is seen as a major step forward for air quality by staff within the GVRD.
- The effectiveness of the program clearly reflects the budget and staffing complement provided for air quality.

- The links between the GVRD and other neighbouring jurisdictions occur at several levels -- staff, senior management, and political -- which seems to strengthen the effectiveness of those relationships.
- Stakeholder and public consultation processes are built into the air quality management process.

Alberta Clean Air Strategic Alliance (CASA)

Mission, Coverage & Legal Authority

- Vision: “The air will be odourless, tasteless, look clear and have no measurable short- or long-term effects on people, animals or the environment.”
- Mission: “The Clean Air Strategic Alliance (CASA) is a stakeholder partnership that has been given shared responsibility by its members, including the Alberta Government, for strategic air quality planning, organizing, and coordinating resources, and evaluation of results in Alberta through a collaborative process.”
- CASA was established in 1994 by the provincial government to address strategic planning for air quality issues in Alberta.

Structure

- CASA is a voluntary organization that assesses information and makes recommendations on issues related to air quality. Membership is open to any organization.
- CASA’s Board of Directors consists of representatives from three levels of government (5), industry (9), and non-governmental organizations (NGOs)(5).
- Project teams with stakeholder representation are struck to deal with specific issues. Currently, there are nine teams addressing issues such as climate change, ambient monitoring and vehicle emissions.
- Stipends and travel costs are offered to those representatives that “would not otherwise receive pay for their time” to ensure participation by all stakeholders.
- This rule is extended to representatives from NGOs, municipalities and small businesses that might not otherwise be able to participate as well.
- In these cases, stipends of \$300 per day are offered to Board Directors and of \$150 per day are offered to members of Project Teams.
- A consensus-based approach is used for decision-making at both the Board and Project Team levels.
- A decision-making tree called the “Comprehensive Air Quality Management System” has been developed to identify the criteria that will be used to judge issues and the process that will be followed.

Responsibilities & Functions

- ❑ CASA does not develop or enforce regulations respecting air quality, nor does it monitor ambient air quality; those jobs remain the domain of the provincial government.
- ❑ CASA's recommendations can be directed at specific sectors including the provincial government but they are not legally binding.
- ❑ CASA does not develop or implement programs although it occasionally runs pilot projects. For example, it is currently running a pilot project for a vehicle inspection and maintenance program.
- ❑ CASA does not offer any incentive programs to encourage emission reductions.
- ❑ Any party affected by or interested in air quality issues can register their concern by filing a brief statement of concern through the CASA Secretariat.
- ❑ Public consultation is an important step in the decision-making process for any issue dealt with by CASA.

Staff Support

- ❑ An independent Secretariat with 6.5 FTEs has been established to provide project management, technical, administrative, and communications support to the CASA Board of Directors and its Project Teams.
- ❑ The Secretariat is a not-for profit organization that is arms length from the provincial government.
- ❑ It reports to the CASA Board of Directors. It facilitates meetings and produces annual reports on CASA's activities.

Funding

- ❑ A budget of about \$685,000 per year is provided to the Secretariat by the provincial government.

Effectiveness

- ❑ It is difficult to assess the effectiveness of CASA; It currently has no air quality or air emissions indicators to measure its effectiveness.
- ❑ According to the Executive Director of the CASA Secretariat, effectiveness has been measured internally by factors such as stakeholder satisfaction and recommendation outcomes.
- ❑ In 1997, it was determined that 77% of the substantive recommendations made by CASA had been acted upon. For example, its recommendation that flaring should be cut by 20% has been met in most situations across the province.

- Stakeholder satisfaction is considered relatively high (ie. 67% are satisfied). However, it is recognized that satisfaction is likely higher among industry representatives than among NGO representatives.

Contact

Donna Tingley, Executive Director, CASA Secretariat, 780-427-9793

Comments

- The successes in CASA can be attributed in part to the technical, project management, facilitation and administrative support provided by 6.5 FTEs of staff.
- The arms-length nature of the CASA Secretariat allows the provincial government to be treated the same way as other stakeholders, which many stakeholders appreciate.
- Participation by NGOs, small businesses and municipalities is encouraged by the provision of stipends and travel expenses.
- While the recommendations of CASA are not legally binding, the Secretariat reported that there appears to be a high rate of compliance with them. This success is attributed to the consensual nature of decision-making by CASA.
- The CASA process does allow all stakeholders to be “heard” on an issue although it gives greater representation to industry than to NGOs which likely influences the decisions and recommendations made by CASA.
- The CASA process is accessible and transparent; the public has access to the process and CASA’s decisions and deliberations are released in public reports.

Clean Air Hamilton

Mission, Coverage & Authority

- Clean Air Hamilton is the new name for the Hamilton-Wentworth Air Quality Initiative (HAQI) that was originally begun in 1995 by discussions between the Regional and Provincial governments.
- In 1998, the former Regional Council of Hamilton-Wentworth provided formal direction to Clean Air Hamilton on actions and initiatives to pursue to improve air quality in the region.
- Clean Air Hamilton is a collaborative, voluntary, multi-sectoral effort that is open to anyone with an interest in air quality.
- Approximately 60 individuals from 24 organizations representing all levels of government, industry, academia, and environmental/community groups in the Hamilton area are involved with the process.

Structure

- ❑ Clean Air Hamilton has one Coordination Group and four working groups – the Emission Reduction Working Group, the Health and Environmental Impacts Working Group, the Research and Policy Development Working Group, and the Communications Working Group – all of which function on a voluntary basis.
- ❑ The Coordination Group has ten representatives from each of the four working groups, the community, all levels of government, industry and academia. It has decision-making authority for Clean Air Hamilton and helps to coordinate activities and information between the four working groups.
- ❑ The representatives on the Coordination Group are staff and citizens; there are currently no City Councillors or Members of Provincial or Federal Parliament (MPPs or MPs) involved directly in the process.
- ❑ Regional Councillors were actively involved in the formation and establishment of the Clean Air Hamilton effort.
- ❑ The four working groups are composed of representatives from industry, the three levels of government, McMaster University, and environmental/community groups as well. Membership in each working group ranges from 10 to 25 representatives.

Responsibilities & Functions

- ❑ Clean Air Hamilton identifies air quality research needs, develops and recommends emission reduction policies and initiatives, monitors and reports on air quality indicators, monitors health and environmental impacts associated with air quality, and develops communications tools.
- ❑ It harnesses the expertise of the community and directs it towards research and policy development, and in some cases, towards policy implementation.
- ❑ It identifies areas of action for the City of Hamilton, and sometimes for other partners in the process.
- ❑ It produces annual progress reports that provide updates on air quality indicators, health impacts, and actions undertaken by the partners.

Staff Support

- ❑ The process is supported by a Coordinator who works in the Planning Department of the City of Hamilton (formerly the Planning Department for the former Region of Hamilton-Wentworth).
- ❑ The Coordinator organizes and coordinates the meetings, agendas and work programs for the Coordination and Working Groups, prepare and administers the budget, and prepares reports for Council.

Funding

- In 1997, the Regional Council of Hamilton-Wentworth approved a Regional Air Quality Program that includes \$250,000 per year. This budget goes towards the continuation of the partnership, a tree planting program, a street sweeping program and chemical sampling program.
- From this budget, approximately 80% of 1 FTE is provided for a staff person from the City's Planning Department to act as a Coordinator for Clean Air Hamilton.
- Clean Air Hamilton has benefited from significant in-kind contributions of time and expertise from the many individuals and organizations that participate in the process on an on-going basis. Conservative estimates suggest that these in-kind contributions were worth about \$210,000 in 2000.
- A number of the partners (eg. Hamilton Industry Environmental Association, Environment Canada, Ontario Ministry of the Environment, and the City of Hamilton) have also provided financial contributions to fund particular projects such as the Upwind/Downwind Conference, the Commuter Challenge, and the Truck Modeling Research Project. These contributions have not been included in the estimate of in-kind funding.
- Clean Air Hamilton is currently preparing a budget for the activities that have been identified as priorities for the coming years, and is seeking funding from its partners in an attempt to provide sustainable funding for the planned activities.

Effectiveness

- The Clean Air Hamilton effort has successfully maintained a high level of participation from all sectors of the community.
- It has harnessed a wealth of expertise from the community and directed it towards the identification of actions needed to improve air quality in the region.
- Its activities have drawn attention to the air pollutants and emission sources of greatest concern for Hamilton residents.
- Its activities have contributed toward significant reductions in air levels of pollutants such as sulphur dioxide, total reduced sulphur, benzene and inhalable particulates in the Hamilton region.

Contact

Sonya Kapusin, Clean Air Hamilton Coordinator, City of Hamilton 905-643-1262 ext.275

Comments

- The Clean Air Hamilton effort has benefited greatly from the time and expertise that has been volunteered by individuals working in the City's academic institutions (ie. McMaster University and Mohawk College).
- It has also benefited from the administrative and coordinating support provided by the Coordinator who is paid by the City of Hamilton (formerly by the Region of Hamilton-Wentworth).
- It has also benefited from the participation, financial support and activities of the City's industrial sector that has been motivated to address the public's perception about its contribution to poor air quality.
- It is unlikely that the effort could have been sustained without the on-going financial support of the City and the other levels of government.
- The participation and support of Regional Councillors in the early years was essential to its successful establishment.

Summary:

- The two regions (GVRD and SC AQMD) that have been able to demonstrate a significant improvement in air quality have hefty budgets, sustainable funding arrangements, and a significant number of staff to direct towards all aspects of air quality management.
- The GVRD's success on air quality has more to do with its Air Quality Planning process than it does with its legislative authority and enforcement responsibilities. The GVRD successes on air quality can be attributed to:
 - The provision of significant and sustainable funding for Air Quality Planning processes at the GVRD;
 - The development and maintenance of a comprehensive emissions inventory to support the assessment and development of emission reduction strategies;
 - The prioritization of emission reduction strategies in a comprehensive air quality management plan prepared in consultation with the public, stakeholders and representatives from all levels of government; and
 - On-going collaboration between all levels of government and affected stakeholders.
- The AQMD's success on air quality can be attributed to:
 - Broad legislative authority and a federally mandated air quality target to achieve;
 - The provision of significant and sustainable funding for air quality planning, assessment and enforcement;

- Strong political support through the Governing Board and on the Standing Committees; and
 - The provision of public access to the AQMD through the Board and Standing Committees.
- The experience in the other three regions (Alberta, Chicago and Hamilton) demonstrates that substantial work can be done with voluntary programs and relatively modest staff complements.
- In Chicago, significant progress has been made on the development of a regional air quality program with quantifiable emission reduction strategies, all of which are voluntary in nature. The successes in the program can be attributed to:
- The provision of dedicated staff to support the process;
 - Significant technical support provided by the U.S. EPA;
 - The ability to solicit participation from high level leaders among the sectors being targeted for emission reductions;
 - The use of stipends to encourage stakeholder participation; and
 - The on-going support from regional politicians.
- In Alberta, it is reported that there has been a relatively high rate of response to the voluntary recommendations made by CASA. The successes in the process can be attributed to:
- The provisions of dedicated staff to support the process;
 - The provision of stipends to encourage stakeholder participation;
 - The arm-length nature of the CASA Secretariat; and
 - The transparent and consensual decision-making process used by the CASA.
- In Hamilton, a high level of voluntary participation has been maintained from all sectors of the community and measurable improvements in air levels of some pollutants have been made since Clean Air Hamilton's establishment. The successes in the process can be attributed to:
- The provision of dedicated staff to support the process;
 - The provision of financial support for priority projects by several partners (including all levels of government) involved in the process;
 - The high level of expertise provided by volunteers from the community;
 - A high level of motivation among the industrial community to address concerns of the community; and
 - A high level of motivation among community/environmental groups.

Lessons Applicable to the GTA Clean Air Council

From each of the regional models examined, there are ideas, strategies or experiences that can be adopted by, or applied to, the GTA Clean Air Council to increase its effectiveness:

1. Dedicated staff are essential to the development and implementation of an effective long-term program for air quality. Experience in Alberta, Chicago and Hamilton suggests that a substantial amount of useful work can be done with a relatively modest complement of staff. Staff can provide basic administrative and organizational support to ensure that meetings occur. With sufficient resources, they can also do analyses, prepare funding proposals, supervise research, encourage action on the recommendations, and generally follow through on the recommendations of the voluntary groups between meetings.
2. The development and maintenance of a comprehensive air emissions inventory is as essential to the development and assessment of an effective air quality plan as comprehensive air quality data. In the two jurisdictions that can attribute measurable improvements in air quality to their respective actions, considerable investment has been made in both the development of a comprehensive emissions inventory and in the modeling and assessment of various emissions reduction strategies. The Clean Air Counts program in Chicago has also benefited from access to information about emission sources, and about the emission reductions gained with the emissions reduction strategies being promoted.
3. Participation of high level leaders from each of the sectors targeted for emissions reductions is essential. This is particularly true for voluntary actions required from non-regulated sectors. In Chicago, they learned that it was more effective to have upper level management (eg. Commissioner level for a Municipality) representing a sector than it was to have the professional staff who understood the technical side of the issue. In both Chicago and Alberta, they have learned that stipends can be used to ensure participation from all of the sectors that need to be involved in the process. Currently, the GTA Clean Air Council is composed of representatives from all levels of government within the GTA, but it includes no representatives from the business, development or NGO sectors.
4. In three of the five models examined, on-going political support is demonstrated with formal representation by one or more regional politicians at one or more of the decision-making bodies that direct the activities of the regional body. In Chicago for example, one of the Mayors from the Metropolitan Mayors Council Chairs the Clean Air Counts Steering Committee. This kind of political involvement can be useful to

maintain momentum of the group. Local politicians can act as Champions for the process.

5. Close cooperation and collaboration between all levels of government with responsibility for air quality in the region is essential. While all five of the regional models examined have addressed this issue differently, all of them have provided some mechanism for communication, cooperation and collaboration between the different levels of government and between neighbouring jurisdictions within the region on air quality issues.
6. All of the processes examined have provided one or more mechanisms for public involvement. In some cases, citizens have the opportunity to join the process as volunteers. In other cases, they are provided opportunities to express their opinions about proposals, priorities or plans being developed. In Alberta, they are provided with a formal mechanism to express their concerns about any issue related to air quality.