

Appendix A: 1997 Hamilton-Wentworth Air Quality Initiative (HAQI) Recommendations & 2008 Results

| HAQI Recommendations | <i>Clean Air Hamilton</i> Comments & Updates |
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| Actions to Reduce Industrial Sources | |
| 1. Implement Code of Practice/Guidelines | <p>The Ontario Ministry of the Environment introduced two regulations to address NOx (and SOx). One is Reg 397/01 which is the capping (and trading) for the electricity sector. The second is Reg 194/04 which is a capping and trading regulation for a number of other sectors.</p> <p>The steel sector endorsed Strategic Options Processes in 2000. Types of BACT and SOP introduced into the steel sector and local industries included electric arc furnaces, coal pile management practices, site wide Particulate Matter (PM) Management Plans resulting in reductions of Total Reduced Sulphur, Benzene and Particulate Matter.</p> |
| 2. Develop Best Available Control Technology and Practices for Major Sources | |
| 3. Implement Strategic Options Process (SOP) Recommendations | |
| 4. Continue Permitting Programs | <p>The Ontario Ministry of the Environment issues certificates of approval for stationary sources of air pollutants in the province. Reg 419/05- Air Quality applies to industrial sources of pollutants and the permitting process.</p> <p>The Ministry should continue to develop and enforce air quality/source performance standards to protect the environment.</p> |
| 5. Establish Industry-Local Resident Liaison Committees | <p>The Hamilton Industrial Environmental (HIEA) Association Community Advisory Panel was formed in 1999 to provide a venue for for community representatives and local associations to discuss environmental concerns regarding their respective communities.</p> <p>In addition, requirements under Reg 419/05 s.32 require meetings with the public including community and neighbourhood groups as part of the permitting process.</p> |
| Reduce Emissions from Private Vehicles | |
| 6. Reduce the number of Single-Occupancy Auto Trips: <ul style="list-style-type: none"> • HSR Bus Service • Urban Development • Promote Cycling | <p>Since 2000, Hamilton has undertaken the Commuter Challenge: a week-long, friendly competition between Canadian cities to reduce emissions by encouraging citizens to use active and sustainable modes of transportation.</p> |

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| <ul style="list-style-type: none"> • Promote Walking • Discourage Parking Downtown | <p>In 2007, the City of Hamilton produced a Transportation Master Plan that encourages increased transit ridership and promotes walking and cycling within the City. In 2009, the City will release its Official Plan with supporting land use planning policies for increased transit, cycling and walking.</p> <p>In 2008, the Hamilton Street railway introduced additional bus routes to Waterdown, across the mountain on Rymal Rd, and along Wentworth Rd to Stintson Ave. In addition, all transit vehicles include bike racks to encourage cycling and transit connections.</p> <p>Hamilton is adding bike lanes and facilities throughout the City towards a fully connected cycling network. In 2008, 22 km new bike lanes were created. The City's Cycling Master Plan is under review and available for public consultation with a new plan is to be considered by City Council in 2009.</p> <p>Downtown parking can be discouraged through levers such as zoning requirements, changes in parking pricing and carpool incentives, while parking and cycling facilities development should be promoted in areas where access to public transit and/or car pooling or car sharing is provided.</p> |
| <p>7. Minimize the emissions of private vehicle use:</p> <ul style="list-style-type: none"> • Promote car pooling • Encourage emissions testing • Minimize discretionary trips | <p>Smart Commute is a partnership between Metrolinx and the cities and regions of the Greater Toronto Area and Hamilton to reduce traffic congestion and take action on climate change through transportation efficiency. Smart Commute helps local employers and commuters to explore different commuter choices like carpooling, teleworking, transit, cycling, walking or flexible work hours.</p> <p>The public can access services for carpolling through the Carpool Zone at www.carpoolzone.ca and Metrolinx www.metrolinx.com</p> |
| <p>8. Establish Standards for Vehicle Emissions and Implement Vehicle Emissions Testing</p> | <p>Since 1999, the Ontario Ministry of the Environment has operated the Drive Clean program, Ontario's mandatory vehicle emissions inspection and maintenance program that reduces vehicle emissions of smog-causing pollutants by</p> |

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| | <p>requiring vehicles (personal and commercial) to undergo an emissions test to identify emissions problems and have them repaired.</p> <p>There are about 6.0 million vehicles in the light duty vehicle program area, many of which have been tested twice or more.</p> |
| <p>9. Anti-Idling By-laws</p> | <p>In 2007, the City of Hamilton enacted By-Law 06-170 that restricts the idling of vehicles in Hamilton to no more than 3 minutes.</p> <p>Since 2005, <i>Clean Air Hamilton</i> and the City has supported Green Venture in the delivery of an Anti-idling education campaign to the public, schools and private fleets in Hamilton.</p> |
| <p>Reduce Emissions from Commercial/Fleet Vehicles</p> | |
| <p>10. Enact Commercial Vehicle Maintenance Standards</p> | <p>The Ontario Ministry of the Environment Drive Clean Program includes a Heavy Duty Drive Clean program that requires large trucks and buses to pass regular emissions tests in order to have their registrations renewed.</p> <p>The program applies to diesel-powered vehicles registered anywhere in Ontario and to heavy-duty non-diesel vehicles in the areas of Southern Ontario where light-duty testing is required. There are about 200,000 vehicles in the heavy-duty vehicle program area.</p> |
| <p>11. Achieve More Efficient Commercial Vehicle Flow</p> | <p>Truck traffic should flow through the City with as little stopping, starting and idling as possible. Possible ways to achieve this include improvements to road systems, special routing of truck traffic and banning of trucks on specific routes during periods of heavy congestion.</p> <p>In 2008, The City of Hamilton began undertaking a comprehensive Truck Route Master Plan Study to examine the existing trucking routes, traffic patterns and truck interaction with other modes of transportation, businesses and residents of the City of Hamilton in order to determine if the truck routes need to be changed and if so, how and to where.</p> |
| <p>12. Greening of Fleets</p> | <p>In 1999, the former Region endorsed a hybrid vehicle partnership. The concept involved the purchase of fuel efficient, low emission hybrid electric vehicles by the Ontario Ministry of the Environment, Hamilton Hydro, and Hamilton Street Railway.</p> |

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| | <p>In 2000, the Ontario Ministry of the Environment purchased a Honda Insight, Hamilton Hydro purchased a Toyota Prius and Hamilton Street Rail purchased two Honda Insights.</p> <p>In 2001, <i>Clean Air Hamilton</i> performed an evaluation of the hybrid Vehicle (HEV) Use. Results showed overall satisfaction with hybrid vehicle use by the City, and this initiated further development of Hamilton's hybrid fleet.</p> <p>In 2005, the City of Hamilton initiated the Green Fleet Implementation Plan to implement affordable and sustainable vehicle technology that demonstrates the City's leadership role toward reducing its environmental impact.</p> <p>Hamilton's hybrid fleet has grown to 135 vehicles and the City Transit division has also purchased 12 new diesel-electric hybrid buses. The Central Fleet has been using 5% biodiesel fuel since 2007 and estimates total GHG reduction of 546 tonnes in the period 2006-2008. Other municipalities have followed Hamilton's lead. Our partnership with many of them, in particular the City of Toronto through showcase events like the Green Fleet Expo has demonstrated our progress.</p> <p>The City of Hamilton is one of the leading municipalities in Ontario to transition their fleet to greener alternatives.</p> |
| <p>Other Sources</p> | |
| <p>13. Control Fugitive Dusts</p> | <p>Fugitive dusts are a significant source of airborne particulate matter in Hamilton. Fugitive dust control is an important responsibility of the City and at all industrial sites, particularly industries that handle or store large amounts of particulate-containing or particulate-generating materials, such as bulk storage facilities and the aggregate handling facilities.</p> <p>Fugitive dust control can include regular sweeping and cleaning of roads within industrial areas of Hamilton, storage pile dust control, covering open trucks, planting tree screen and vegetation, paving heavily used trucking areas, and cleaning stations to prevent dirt track out onto roads.</p> <p>In 2005, a Fugitive Dust workshop was held in</p> |

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| | <p>conjunction with the City of Hamilton, the Ministry of the Environment and the Hamilton Port Authority to introduce industrial operators to fugitive dust control techniques and the health impacts of fugitive dust.</p> <p>Since 2005, The city has increased street sweeping service level in the Strathearne Avenue area and in the Burlington Street Industrial Area, provided more effective street sweeping using new regenerative-air street sweepers and increased frequency of boulevard, median and street flushing. The industrial community in Strathearne Avenue have formed the Strathearne Dust Committee to look at best industrial practices to address fugitive dust from local operations.</p> <p><i>Clean Air Hamilton</i> continues to work with various stakeholders to reduce road dusts and road dusts impacts on the community.</p> |
| <p>14. Reduce Transboundary Pollution</p> | <p>The biannual Upwind Downwind conference have provided a forum of education, awareness, science and policy discussions on transboundary air issues and related health impacts.</p> <p>In 2000, an Ozone Annex was added to the Canada and United States Air Quality Agreement. In 2008, the US EPA created tighter standards for Ozone. Unfortunately Ozone is still a transboundary pollutant that affects air quality and health in Hamilton</p> <p>The HAQI model won the International Dubai Award for Best Practices to Improve the Environment in 2000 and has been used as a case study nationally and internationally.</p> |
| <p>15. Develop and Implement Energy Conservation Measures:</p> <ul style="list-style-type: none"> • Municipal Energy Reduction Programs • Industrial Energy Reduction Programs • Alternative Energy • Subsidies for Energy Audits • District Heating and Co-generation | <p>In 2007, the City of Hamilton established a Corporate Energy Policy to reduce energy intensity by 3% by 2009, 7.5% by 2012 and 20% by 2020, using 2005 as the base year. The City has already begun to address the corporate fleet energy usage through Hamilton's Green Fleet Implementation Plan.</p> <p>In Hamilton, a number of local large industries have undertaken corporate energy reduction programs. For small and medium sized enterprises, Horizon utilities offers the Electricity Retrofit Incentive Program (ERIP) which focuses on the areas of lighting, motors, heating, ventilation</p> |

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| | <p>and air conditioning, and overall electricity systems.</p> <p>Since 1999, Green Venture has undertaken energy audits for homeowners through the former Energy Star federal program and under the current ecoEnergy federal program. Both the province and federal government offer incentives for homeowners undertaking energy conservation retrofits.</p> <p>The City has begun to generate energy and reduce emissions through the use of wasted methane gas emissions. A 1.6 MW Cogeneration Facility, located at the Woodward Avenue Wastewater Treatment Plant, takes methane gas created from the wastewater treatment process to produce electricity and heat.</p> <p>Hamilton Community Energy (HCE) operates a district heating and co-generation facility in downtown Hamilton. The combined heat and power installation produces hot water that is distributed by underground pipeline to large buildings clustered on the west side of downtown Hamilton. Besides thermal heat, HCE's Energy Centre produces 3.5 megawatts of electricity, which is routed through the city's Electrical Distribution System.</p> |
| <p>Public Awareness</p> | |
| <p>16. Promote Public Awareness through Social Marketing</p> | <p><i>Clean Air Hamilton</i> promotes behavioural changes in companies, government, institutions and individuals in Hamilton to reduce energy consumption and improve air quality.</p> <p><i>Clean Air Hamilton</i> works with partners (Green Venture, Horizon Utilities, Ministry of the Environment, Environment Canada, the City) to provide programs in the community that educate and address air quality.</p> <p><i>Clean Air Hamilton</i> maintains a website www.cleanair.hamilton.ca that educates and informs citizens across Canada on air quality and programs in Hamilton.</p> |
| <p>Monitoring, Research and Development</p> | |
| <p>17. Expand Capability for Inhalable/Respirable Particulate Monitoring</p> | <p>In Hamilton, two local fixed air monitoring networks exist- the provincial Air Quality Index (AQI)</p> |

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| <p>18. Maintain Current Monitoring System</p> | <p>monitors (West, Mountain and Downtown) and the Hamilton Air Monitoring Network which is an industry-operated network. The AQI network includes equipment from Environment Canada as part of its National Air Pollution Surveillance Station (NAPS) network at two of the AQI stations.</p> <p>The Hamilton Air Monitoring Network (HAMN) is an industry-operated local real time air monitoring network comprising 22 local companies who have committed to assessing air quality in Hamilton on a regular basis and tracking changes in air quality. HAMN was initiated in 2003 through the transfer of responsibilities for Hamilton's air monitoring network from the Ontario Ministry of the Environment to HAMN. The network provides air quality reports to the Ministry on a regular basis and the reports are audited by the Ministry to ensure consistent and high levels of quality data.</p> <p>In 2008, HAMN membership increased and new air monitors are being introduced into the network in 2009</p> |
| <p>19. Expand Mobile/Portable Monitoring Capabilities</p> | <p>Between late 2004 and 2008, mobile monitoring surveys were undertaken for <i>Clean Air Hamilton</i> to obtain a comprehensive picture of the air quality across the City of Hamilton, in particular air and health impacts due to traffic emissions and atmospheric inversions conditions.</p> <p>The mobile sampling can be used to focus on locations with specific issues, to roam city-wide or to determine representative local air quality conditions (e.g., at traffic intersections) which are common issues in numerous areas across this city and in other cities.</p> |
| <p>20. Maintain Government Scientific/Laboratory Capabilities</p> | <p>Since 1997, government and laboratory capabilities have been maintained at the provincial and federal governmental levels.</p> |
| <p>21. Research about the Origins, Characteristics and Health Impacts of Particulates</p> | <p>In 2003, <i>Clean Air Hamilton</i> undertook a health assessment on air quality impacts in Hamilton, which updated the 1997 work of HAQI on air quality and health. The 2003 assessment determined 5 key pollutants result in >100 premature deaths and >620 respiratory and cardiac admissions in Hamilton.</p> <p>In 2005 the Ontario Medical Association (OMA) issued an update to its 2000 report on the health impacts of poor air quality in Ontario. The 2005</p> |

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| | <p>OMA report estimated the Illness Cost of Air Pollution (ICAP) for Ontario in 2005 to be \$16 B (or about \$1250 per year for every person in Ontario).</p> <p>The mobile monitoring studies have been investigated and determining the linkages between air quality, transpiration sources and health impacts along major roadways.</p> |
| <p>22. Analyze and Model Transportation Emissions</p> | <p>To support on-going air quality improvement actions, mobile scans for NO_x (Nitrogen oxides), SO₂ (Sulphur Dioxide), PM (Airborne Particulate Matter) and CO (Carbon Monoxide) were performed in traverses across the city, at selected industrial areas, at traffic intersections, at schools during student pickup and drop-off times, near drive thrus, and along highways were conducted in 2005 to 2007.</p> <p>The mobile monitoring demonstrated that citizens of Hamilton are exposed to very high levels of pollutants due to traffic related emissions, particularly along main transportation corridors as oppose to arterial and residential areas.</p> <p>The data collected by the mobile monitoring work has been shared with the province, the City, and with the McMaster Spatial Analysis Group. When transportation models undertaken by the McMaster Spatial Analysis are compared to actual emissions monitoring form the mobile study, the data are highly comparable.</p> |
| <p>23. Research on the Impact of Air Toxics on Ecosystems</p> | <p>The atmospheric deposition of large quantities of persistent toxics into the aquatic environment was an issue for HAQI in 10997 and remains an issue in the harbour under the Hamilton Harbour Remedial Action Plan (RAP).</p> <p>Movement has begun on Randle Reef with involvement and funding by all partners, federal, provincial, municipal and local communities with implementation in 2010.</p> |
| <p>24. Develop an emissions inventory and carry out atmospheric modelling</p> | <p>In 2008, the City Of Hamilton approved an Air Quality and Climate Change Strategic Plan to undertake actions to meet corporate emission targets of 10% reduction of 2005 greenhouse gases levels by 2012 followed by a 20% reduction of 2005 greenhouse gases levels by</p> |

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| | <p>2020.</p> <p>The City is currently undertaking a City wide air pollutant and greenhouse gas inventory to assess the levels of GHGs and air pollutants in Hamilton, identify sources and undertake actions to improve air quality and climate change in Hamilton and to meet the intended targets of the Strategic Plan.</p> <p><i>Clean Air Hamilton</i> and the City have also partnered with the Clean Air Partnership to undertake studies in atmospheric modelling.</p> |
| <p>25. Review and Continued Refining of Environmental Priorities</p> | <p>In 1997, HAQI noted that air quality is a concern of citizens in Hamilton. This statement continues to apply today. It is still essential that air quality in Hamilton receive adequate attention and a systematic evaluation of air quality issues continues along with the establishment of priorities.</p> <p><i>Clean Air Hamilton</i> through its partners continues to evaluate and recommend actions and policies to improve air quality and the health of the citizens of Hamilton.</p> |