

3.0 BACKGROUND:

Smog is a form of poor air quality containing a mixture of contaminants that appears as a brownish-yellow or greyish-white haze. The contaminants that form smog come from the combustion of fossil fuels in our vehicles, power plants, factory boilers, and homes. They are also released through industrial processes, the evaporation of liquid fuels, and the use of solvents and other volatile products, such as oil-based paints.

Smog affects both our health and the environment. Members of the population that are most susceptible to smog include children, seniors, and people with asthma, heart, and lung conditions. Common health effects include eye, nose, and throat irritation, coughing, wheezing, and shortness of breath.

Smog Alert Program

The Ontario Ministry of the Environment (MOE) initiated a smog alert program as a public awareness tool in the spring of 1993. Between 1993 and August 2003 there have been 47 smog advisories lasting 104 days (Appendix A). Note that smog events can fluctuate greatly from year to year with less smog episodes occurring in cooler, wet summers.

The smog alert program is a three-tiered notification system involving smog watch, smog advisory, and smog termination notices. When there is a strong likelihood of a poor air quality episode occurring within the next 72 hours, a smog watch is issued. When there is a strong possibility of a smog episode occurring within the next 24 hours, a smog advisory is issued. When the air quality has improved and a smog episode is over, a smog termination notice is issued.

Smog advisories are issued when the air quality index is expected to reach a reading of 50 or “poor” air quality. Traditionally, ozone was the trigger for smog advisories. These advisories were called only in the summer months because the reactions necessary to create ozone (a secondary chemical formed by the mixture of NO_x and VOCs) take place under hot, sunny conditions. As a result, heat advisories often occur with smog advisories.

Since the fall of 2002, fine particulate matter has also been measured and can now be the trigger for a poor air quality day. Since fine particulate matter is not dependant upon heat or sun, smog advisories may now be called in the winter months or much earlier in the season. For example, poor air quality was measured in some municipalities in southern Ontario in December 2002 and March 2003, previously unheard of occurrences. It is estimated that smog advisories may now be called 10% more often due to measuring fine particulate matter.

Halton Public Sector Smog Response Plan

In 1999, a regional team was formed to develop a Halton Public Sector Smog Response Plan¹ and to raise community awareness of the health risks of smog and actions that can be taken. The team, now known as Halton Partners for Clean Air, consists of representatives of the Region, its

¹ To view the Halton Public Sector Smog Response Plan online, please view http://www.region.halton.on.ca/health/programs/healthyenvir/healthyenvir_PDFs/Smog%20Plan%202001.pdf

four area municipalities, the two school boards, the local hydro utilities, and the conservation authority.

Council, at its meeting of February 7, 2000 approved the following item No CD-21-00

THAT the City of Burlington adopt the Halton Public Sector Response Plan, dated October 1999

The City of Burlington adheres to the Smog Response Plan and has implemented a number of action items to reduce its impact on air quality (Appendix B). Each department is responsible for following the protocol that is applicable to them (Appendix C).

4.0 DISCUSSION:

Based on the experience of the summers of 2000-2002, some changes were implemented for the 2003 smog season.

Smog Days

During the summer of 2002, some confusion arose among staff as to when a smog event was occurring due to differing terminology used by the Ministry of the Environment. MOE used the term "Smog Advisory," in response to the Air Quality Index approaching "50" or "poor air quality," even though their website is called Smog Alert Network. Staff were often unsure whether a smog advisory meant a smog day was in effect. In 2003, initial broadcasts issued by Environment Staff referred to a "Smog Day" to simplify the issue. In addition, a smog termination notice was sent to all staff advising that air quality had improved.

Further changes occurred during the 2003 smog season. Due to a change in corporate policies concerning broadcasts, a link from COBNet was set up where employees could take the initiative to view information related to smog days. Email broadcasts concerning smog days would no longer be issued based on the assumption that staff awareness of smog days is greater now due to media attention.

Key staff were registered on the Ministry of the Environment's Smog Alert Network so that they receive the information directly and can ensure that proper actions are taken to implement the Smog Response Plan. To date, Environment staff have registered 75 staff members on the Smog Alert Network. In addition, Environment staff will now survey city departments annually to update the names of staff that should receive immediate notification of Smog Days.

Bio-diesel Fuel

There has been a cost to the City to implement the Smog Response Plan. Roads and Parks Maintenance particularly felt the effects due to the need to stop the use of mowing equipment. Due to the high number of smog events that occurred in 2001 and 2002, horticultural operations fell behind by as much as one month.

In 2003, council approved a pilot to purchase bio-diesel fuel for a period of 5 months for non-licensed equipment. The use of this fuel was expected to significantly reduce emissions overall and would enable RPM to continue some operations throughout smog events.

Anti-idling

Addressing idling was one of the items listed within the Halton Smog Response Plan. In June 2003, the City of Burlington launched an idling awareness campaign for staff and also for the community.

The internal campaign included:

- Information about the idling campaign in the May 2003 issue of Focus and on the Environment site on COBNet.
- The six month pilot of a management approved Idling Control Policy that applied to city staff driving city vehicles or their own vehicles while conducting municipal business.
- Information cards, bookmarks, and electromagnetic stickers regarding idling were circulated to employees with their pay stubs prior to the Environment Week launch (on May 23rd and May 29th).
- Posters for bulletin boards were circulated to all city departments.

The public awareness campaign included:

- A media release to announce the campaign's launch on June 4, 2003, during Environment Week.
- A display from June 2–6, 2003 in the City Hall foyer demonstrating the city's environmental initiatives, including the anti-idling campaign.
- Distributing bookmarks to bookstores (1,150), schools (22,000), and public libraries (6,500) for circulation.
- Posting information on the city's Internet site, in the "Update" section of the Burlington Post, and in City Talk.
- Circulating posters to schools and municipal facilities including public libraries, arenas, community centres, etc.
- Posting "idle free zone" signs for municipal "hotspots" such as the drop-off zone at City Hall.
- Working with GO Transit stations in Burlington to post two "idle free zone" signs at each kiss and ride location for a total of 10 signs.
- Newspaper articles in the Burlington Post and Hamilton Spectator and interviews on COGECO, CH TV, and 94.7.

An idling report will be prepared for Council in early 2004 to discuss the effectiveness of the 2003 public awareness campaign. A draft idling control by-law will also be presented for Council's consideration as per the staff direction in Report CD-31-00-1.

5.0 FINANCIAL MATTERS:

The costs associated with producing the idling materials, such as the information cards, bookmarks and posters, were paid for through the City's Development & Infrastructure – Environment budget (approximately \$3,500). The Region's Halton Partners for Clean Air

organization provided electromagnetic stickers with an anti-idling message for vehicles. A grant of \$3,500 was received from TD Friends of the Environment to cover the cost of producing and installing the anti-idling signs.

In addition, the cost to the Roads & Parks Maintenance Department for the five-month pilot to use bio-diesel fuel for off-road vehicles was \$18,600, approved by Council in the 2003 current operating budget. Staff will review the financial and environmental implications of continuing with the use of bio-diesel fuel during the 2004 current operating budget process.

6.0 ENVIRONMENTAL MATTERS:

Please refer to sections 3.0 and 4.0

7.0 COMMUNICATION MATTERS:

Environment staff continue to work closely with Corporate Communications to coordinate communications for all air quality initiatives.

8.0 CONCLUSION:

Air pollution is not just a problem for major industrialized cities. Research by the Ontario Medical Association clearly indicates that it should be everyone's concern. Although the problem is global, local action can make a difference. The City of Burlington is involved in a number of initiatives to help reduce our impact on the environment including the Environmental Management Plan, Halton Partners for Clean Air, the GTA Clear Air Council, and Partners for Climate Protection.

Respectfully submitted,

Lynn Robichaud
Sr. Environmental Co-ordinator

Fleur Stora-Hogan
Environmental Projects Support Technician

Appendices:

Appendix A: Smog Advisories Issued 1993-2003 Appendix B: City's Response to Smog Response Plan Appendix C: Departmental Response to Smog Response Plan
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Staff / Others Consulted:

Name	Telephone
- Burlington Air Quality Initiatives Committee	
- Burlington Sustainable Development Committee	
- Environmental Management Team	
- Management Committee	
- John Duncan, Manager of Fleet, RPM	905-333-6151
- Beckie Jas, Region of Halton	905-825-6000 x7678
- Peter Willmott, Region of Halton	905-825-6000 x7841

Notifications:

Name	Mailing or E-mail Address
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Beckie Jas, Region of Halton	jasb@region.halton.on.ca
Peter Willmott, Region of Halton	willmottp@region.halton.on.ca

Special Instructions:

Consent Agenda

Appendix A: Smog Advisories Issued 1993-2003

Year	# of Advisories	# of Smog Days
1993	1	1
1994	2	6
1995	6	11
1996	3	5
1997	3	6
1998	3	8
1999	5	9
2000	3	4
2001	7	23
2002	9	18
2003	5	13 (as of September 15, 2003)
Total	47	104

Appendix B: City’s Response to Smog Response Plan

Smog Response Plan Strategy	City of Burlington Response
May 1st to September 15th Strategies	
Increase temperature settings in offices with air conditioning and allow for employees to adopt a flexible dress code	The city adopted a flexible summer dress code allowing an increase in temperature settings in offices with air conditioning, thereby reducing energy usage. Signs are posted on city service counters that read, "Our dress may be casual, but our commitment to service is not."
Refuel equipment before 9:00a.m. and after 3:00p.m.	Staff follow this when possible. Stickers were distributed in summer 2001 reminding staff to “refuel before 9a.m. or after 3p.m.”
Minimize the use of non essential lighting and electrical equipment	Stickers were posted in all City meeting rooms in the summer of 2001 on light switch plates advising staff to “please turn the lights off.” In addition a brochure with three inserts was distributed to all staff in 2001. One of the inserts dealt with energy conservation. In 2003, “turn your computer off at the end of the day” stickers were given to ITS for distribution.
Delay or postpone the discretionary use of work related vehicle trips	The ITS department now has the ability to work remotely, reducing the number of trips necessary to resolve problems. In addition, ITS staff are encouraged to make site visits on their way to work or home from work.
Investigate the potential for alternate work arrangements	The City has adopted flexible working hours and also has a draft telecommuting policy for non-union staff.
During “Smog Alert Days”, minimize where possible	
The use of gas and diesel powered equipment, such as lawnmowers between the hours of 9:00a.m. and 3:00p.m.	In previous years, the City shut down the use of gas and diesel powered equipment when a smog day was called. This year, Council approved the five-month pilot of biodiesel, which emits fewer pollutants, allowing some operations to continue on smog days.
The spraying of pesticides during the hours of 9:00a.m. and 3:00p.m.	Pesticide use has been greatly reduced on City lands through the use of cultural practices,

Smog Response Plan Strategy	City of Burlington Response
	including the use of aquacide machines (using steam on paved surfaces to remove weeds). Pesticides are only applied when necessary on the golf course, bowling green, cemetery, and in special circumstances (i.e. poison ivy).
Street sweeping operations between the hours of 9:00a.m. and 3:00p.m.	Street sweeping operations are modified to operate outside these working hours during smog alert days.
The use of oil-based paints and other compounds which emit volatile organic compounds	Latex paints are primarily used by staff.
Road and roof resurfacing activities during the hours of 9:00a.m. and 3:00p.m.	Engineering contracts include a clause that states that work will shut down on the second day of a smog advisory event, except for emergency repairs.
The use of vehicles between the hours of 9:00a.m. and 3:00p.m.	Teleconferencing and carpooling are encouraged.
Year Round Strategies	
Implement an anti-idling policy for all public sector vehicles	The city is currently piloting an idling control policy for staff driving city vehicles or personal vehicles while conducting municipal business to “three minutes or less.”
At schools and day care centres, ensure that drop off/pick up zones are anti idling areas	Staff distributed idling posters and bookmarks to all Burlington public and separate schools (each board is represented on Halton Partners for Clean Air). The school boards have also been notified that they can purchase ‘idle free zone’ signs at cost from the city. The Region notified day care centres across the region about the program.
Conduct routine inspections of all vehicles to meet the provincial “Drive Clean” standards	City vehicles must meet “Drive Clean” standards.
Longer Term Strategies	
The development of green fleet policies, which encourage the use of alternative fuel-powered fleet vehicles, which use such fuel as electricity, methanol, ethanol, natural gas and propane.	The City purchases low sulphur fuel for its fleet; leases 2 hybrid vehicles; and is testing biodiesel for five months. In addition, RPM currently owns eleven tandem dump trucks and two wheel loaders

Smog Response Plan Strategy	City of Burlington Response
	<p>with automatic shut down. Equipment purchase specifications (for all departments except Fire and Transit) include a request for these devices wherever possible as well as compliance with the latest emission standards for Europe, Canada, and the U.S.A, including California.</p>
<p>Promote employee car or van pooling and the use, by employees, of public transit. This could be done by providing preferential parking spaces, free or subsidized transit passes etc.</p>	<p>Parking spaces were reassigned in June 2003 based on the following criteria - senior staff, health, work needs, carpooling, and seniority. Carpoolers were provided with preferential parking spaces closer to City Hall. A total of four carpoolers (two adults per car) fit the criteria for a closer parking space.</p> <p>Staff who did not need a parking space were eligible for a free bus pass. Six city hall staff received passes.</p> <p>The City participated in Commuter Challenge in 2003 which is a national challenge promoting active or sustainable forms of transportation, including carpooling and transit.</p>
<p>Promote walking and cycling initiatives to reduce car usage. This could be done through the provision of bike racks, changing facilities and shower areas.</p>	<p>Burlington has a bikeway committee whose members are appointed by City Council. The committee reviews and provides input about Burlington's Bikeways. Members monitor and evaluate the condition of the pathways, review the design standards, monitor expenditures for bikeway facilities and promote cycling throughout the City.</p> <p>Bike racks, changing facilities, and shower areas are provided at some City facilities, including City Hall.</p> <p>The City participated in Commuter Challenge in 2003 which is a national challenge promoting active or sustainable forms of transportation, such as walking and cycling.</p>
<p>Encourage community and the private sector to develop and promote clean air initiatives and the sharing of information and technologies that support the Smog Response Plan.</p>	<p>HPCA is looking to expand its membership to include representation from the private sector to promote clean air actions.</p>
<p>Develop long-term transportation initiatives that reduce reliance on the automobiles.</p>	<p>The City supports the GTA Smart Commute proposal for funding from Transport Canada to</p>

Smog Response Plan Strategy	City of Burlington Response
	improve and expand commuter options in the GTA and Hamilton.
Develop targets for energy conservation in all public sector facilities.	In 2002, Council approved a resolution to join Partners for Climate Protection. This requires that municipal operations reduce their greenhouse gas emissions by 20% below a base level (likely 1994) within 10 years of joining. Energy conservation and alternate fuels are a major component of this program.
Work in partnership with other levels of government to develop actions that will reduce air pollution, nationally and internationally.	<p>The City endorsed the Kyoto Protocol in 2002.</p> <p>The City continues to be a member and actively participate in the HPCA and the GTA-Clean Air Council.</p> <p>The City has participated in the 2002 and 2003 smog summits where representatives from senior and local governments sign the Declaration of Clean Air.</p>
Develop policies that increase naturalized areas for all public lands in order to reduce lawn cutting and pesticide use.	A naturalization committee was formed in 2002 as part of the City's Healthy Green Spaces Strategy.
Implement a synchronized traffic signal system, which avoids regular stopping/starting of road vehicles.	Most of Burlington's 152 signalized intersections are controlled from City Hall by a Computerized Traffic Control System. Co-ordination between adjacent traffic signals is maintained based on the posted speed limit.
Develop municipal anti idling strategies for all vehicles.	<p>An idling control policy is currently being piloted. A spring 2004 report to Council will highlight all idling initiatives in 2003 and include a draft idling bylaw for Council's consideration as per the staff direction in report CD-31-00-1.</p> <p>In 2003, the City participated in Repair Our Air Fleet Challenge. The challenge was to have the lowest incidence of idling by our fleets in our class. The City ranked second in the competition.</p>

Appendix C: Departmental Response to Halton Public Sector Smog Response Plan

Recommendation from Halton Smog Response Plan	Department responses							
	P&R	Fire	T&T	RPM	ENG	BLD	Finance	Other comments
1. Yearly								
1.1. Implement an anti idling policy for all public sector vehicles.	√Pilot	√Pilot	√Pilot but buses not included; S.3.22 of CoB Transit Operators Regulations Manual limits bus idling to 10 mins.	√Pilot; automatic shutdown devices installed in some vehicles	√Pilot	√Pilot	√Pilot	- June 2003 Management approved Idling Control Policy - RPM, ENG, BLD 2003 participant of Repair Our Air Fleet Challenge
1.2. At schools and day care centres ensure that drop off/pick up zones are anti idling areas.	N/A	√ Fire truck engines turned off during school fire drills.	N/A	N/A	N/A	N/A	N/A	The City has produced "Idle Free Zone" signs that schools can purchase at cost.
1.3. Conduct routine inspections of all vehicles to meet the provincial "Drive Clean" standards.	√	√ (passenger vehicles)	√	√	√	√	N/A	RPM: an emissions plan is in place for licensed on-road vehicles
2. May 1st to September 15th								
2.1. Increase temperature settings in offices with air conditioning and 2.4 allow for employees to adopt a flexible dress code	√		√	√	√	√	√	City-wide summer flexible dress code
2.2. Refuel equipment before 9:00 a.m. and after 3:00 p.m.	√		√	√	√	√	N/A	BLG: Will advise inspectors of this Note: vehicle

Recommendation from Halton Smog Response Plan	Department responses							
	P&R	Fire	T&T	RPM	ENG	BLD	Finance	Other comments
resurfacing activities during the hours of 9:00 a.m. to 3:00 p.m.	N/A	N/A	N/A	√	√As amended	N/A	N/A	Owners/Contractors are to be restricted to emergency paving work only on city streets and city owned property from 0700 to 1800 on the second and subsequent consecutive days of a smog alert. Amending contracts re costs.
3.6. The use of vehicles between the hours of 9:00 a.m. to 3:00 p.m.	√	N/A for emergency equipment	N/A for public transportation	√	√	√	√	BLG: Based on each inspectors appointments