



HAMILTON INDUSTRIAL ENVIRONMENTAL ASSOCIATION

Environmental Survey

2007 Report



Measuring our Success

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1. Executive Summary

The Hamilton Industrial Environmental Association (HIEA) is a non-profit association of local private sector industries. HIEA's mandate is: "to improve the local environment – air, land and water – through joint and individual activities, and by partnering with the community to enhance future understanding of environmental issues and help establish priorities for action."

HIEA has a strong history of transparent and open communications regarding the collective environmental performance of its members. The association conducts an annual environmental survey of its member companies to report their aggregate environmental performance against key parameters such as air emissions, water discharges, recycling and waste management and environmental spending and stewardship. The survey uses 1997 as the baseline year to evaluate environmental trends. HIEA's Environmental Survey is presented at the association's Annual General Meeting and to the Community Advisory Panel. It is also available to the public both in print and on the association's website - www.hiea.org. Individual company data is not included in the report.

The 2007 Environmental Survey shows an overall improving trend for the years 1997 through 2007. This year's statistics are a concrete example of the continued success that HIEA member companies are achieving to improve the environment in the Hamilton community. Some of the highlights of the association's performance over the past 10 years include:

Air Emissions

- 10% reduction in Greenhouse Gases
- 37% reduction in Sulphur Oxides
- 28% reduction in Volatile Organic Carbon Compounds
- 38% reduction in Particulate Matter
- 83% reduction in Polycyclic Aromatic Hydrocarbons

Water Discharges

- Bay water consumption decreased 17%
- City water consumption decreased 31%
- Suspended Solids discharged has decreased 83%
- Total Metals discharged has decreased 35%
- Oil and Grease discharged has decreased 88%

Recycling & Waste Management

- HIEA member companies externally recycled 555,762 tonnes of material, a decrease of 39% from the 1997 baseline of 906,285 tonnes. This can be attributed to an overall reduction in waste generation and an increase in internal waste re-processing
- Subject waste (liquid industrial and hazardous waste) sent for treatment or destruction, and therefore not landfilled, decreased by 60% or 5,517 tonnes since 1997. This trend can be attributed to less subject waste being generated
- Since 1997, subject waste sent to landfill has also been reduced by 90%
- Commercial and domestic waste sent to landfill has decreased by 30% since 1997
- Purchased recycled materials and by-products for use in HIEA member company production operations have continued to trend upward with an overall increase of 10% since 1997.

Environmental Stewardship and Spending

As part of their environmental commitment, HIEA member companies reported involvement with twenty-five (25) environmental organizations/committees, in addition to HIEA. All member companies continue to implement comprehensive voluntary environmental improvement programs and adhere to various environmental management standards. Four (4) member companies are registered to the ISO 14001 International Environmental Management Standard and one (1) member company has adopted Responsible Care as the basis for their environmental management standard.

From 2003 to 2007, HIEA member companies combined to spend approximately \$348 million in operating expenses and \$78 million in capital expenses on environmental protection.

In conclusion

Since 1997 there have been significant improvements made by member companies in the area of environmental protection. In 2007, HIEA's collective environmental performance continued this positive trend.

Looking forward, member companies are committed to reducing their environmental footprint and protecting the air, water, and land by:

- Operating their facilities in a safe and responsible manner and in a way which does not adversely impact neighbouring communities
- Having operational systems in place that monitor environmental performance and adherence to key performance metrics
- Transparent and open communications regarding environmental performance and improvements
- The conservation and protection of our natural environment
- Responsiveness to community enquiries and concerns, and
- Working in partnership with residents and community associations to promote environmental awareness.

2. HIEA Member Companies

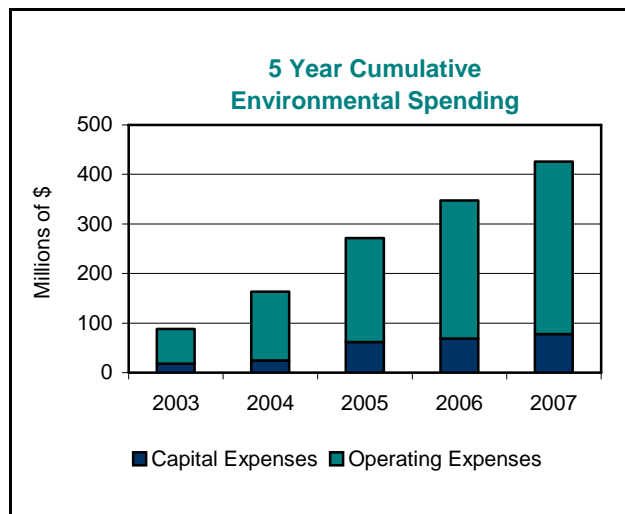
Facility	Business Description	Land Area (Hectares)
Air Liquide	Producer of industrial gases	6.0
ArcelorMittal Dofasco	Integrated steel mill producing a full range of flat rolled and coated steel products	282.0
Bitumar	Produce and blend paving and roofing asphalt	9.2
Bunge Canada	Oilseeds processor	11.3
Columbian Chemicals Canada ULC.	Carbon Black manufacturer	11.3
Enssolutions	Manufactures and distributes environmentally friendly organic sealers and binders	2.0
Lafarge Slag Ltd.	Processor of blast furnace slag	4.5
Liberty Energy	-	-
ArcelorMittal Hamilton East	Producer of steel wire products	16.0
MultiServ	Steel-making slag processor	-
Triple M Metal LP	Sourcing and sales of ferrous scrap	11.0
Sanimax	Transforms food and meat industry by-products into useful materials for other services	20.0
U. S. Steel Canada (Hamilton Works)	Integrated steel mill producing a full range of flat rolled and coated steel products	445.0
VFT Canada Inc.	Producer of coal tar pitch and distillates	5.4
Westway Terminals	-	-
	TOTAL:	823.7

Note: The 2007 data has been adjusted to reflect that 4 new member companies are now participating in the survey.

- In 2007 HIEA companies employed over 8,700 people and paid over \$25 million in municipal taxes.
- Four HIEA companies had achieved or were implementing ISO 14001 environmental management systems.
- One company followed the Canadian Chemical Producers Association's Responsible Care Initiative.
- This report includes data from the above facilities.

3. Environmental Spending

- HIEA member companies collectively have invested approximately \$426 million on environmental capital and operating expenses in the last 5 years.
- Each year, HIEA member companies have invested between \$6 million and \$37 million in environmental capital projects.
- HIEA member companies spend over \$70 million per year on environmental operating expenses.
- Through its financial sponsorships and the volunteer efforts of its member companies, HIEA has contributed more than \$750,000 to local environmental initiatives.



4. Voluntary Environmental Improvement Programs

HIEA member companies participate in a variety of voluntary environmental improvement programs sponsored by governments and trade associations including:

- Benzene Reduction Program
- Canadian Chemical Producers Association (CCPA) - MOU on VOC Emission Reduction
- Canadian Chemical Producers Association (CCPA) - Environmental Quality Committee
- Canadian Chemical Producers Association (CCPA) - Responsible Care - National Emission Reduction Masterplan (NERM)
- Canadian Industry Program for Energy Conservation
- Canadian Steel Producers Association (CSPA) - Statement of Commitment and Action
- Golden Horseshoe By-product Synergy Project
- Hamilton Ambient Air Quality Monitoring Partnership
- Polycyclic Aromatic Hydrocarbon (PAH) - Best Practices
- Wood Preservation Strategic Options Process for Polycyclic Aromatic Hydrocarbons

5. Memberships in Environmental Associations

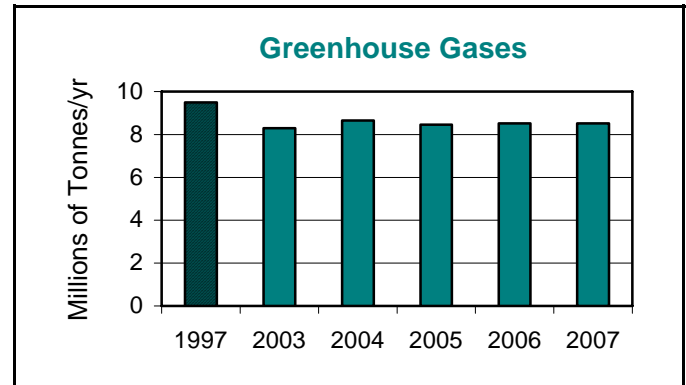
In addition to HIEA, member companies are active in many other environmental associations including:

- Air and Waste Management Association (AWMA)
- American Iron and Steel Institute (AISI)
- Bay Area Implementation Team (BAIT)
- Bay Area Restoration Council (BARC)
- Bitumar Public Liaison Committee
- Canadian Association of Environmental Labs
- Canadian Centre for Pollution Prevention
- Canadian Chemical Producers Association (CCPA)
- Canadian Chemical Producers Association (CCPA) - Environmental Quality Committee
- Canadian Environmental Auditing Association
- Canadian Manufacturers and Exporters (CME)
- Canadian Oilseed Producers Association (COPA-TES) – Technical, Environmental and Safety Committee
- Canadian Slag Association (previously Ontario Slag Association)
- Canadian Steel Producers Association (Environment and Energy Committee)
- CARI (Canadian Association of Recycling Industries)
- Clean Air Hamilton (CAH)
- Compressed Gas Association
- Conseil patronal de l'environnement du Québec
- Eastern Canada Response Corporation Ltd. (ECRC)
- Hamilton – Community Awareness Emergency Response (CAER)
- Hamilton Air Monitoring Network (HAMN)
- Institute of Scrap Recycling Industries (ISRI)
- Worldsteel (formerly International Iron & Steel Institute)
- Steel Manufacturers' Association (Environmental Committee)
- Water Environment Federation

6. Air Emissions

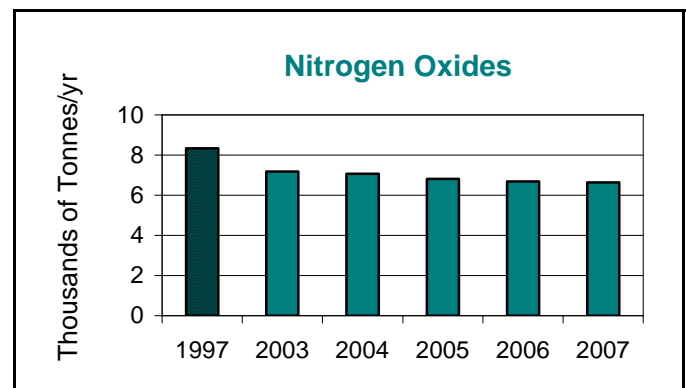
6.1 Greenhouse Gases (GHG)

- Greenhouse gases include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride.
- Carbon dioxide is the most significant GHG for HIEA companies.
- GHG emissions are 10% lower than 1997 levels.
- Although production has increased, the trend for GHG emissions over the past five years is relatively stable.
- Reductions in emissions have primarily been achieved by energy conservation, increased waste energy recovery and increased process yields and efficiencies.



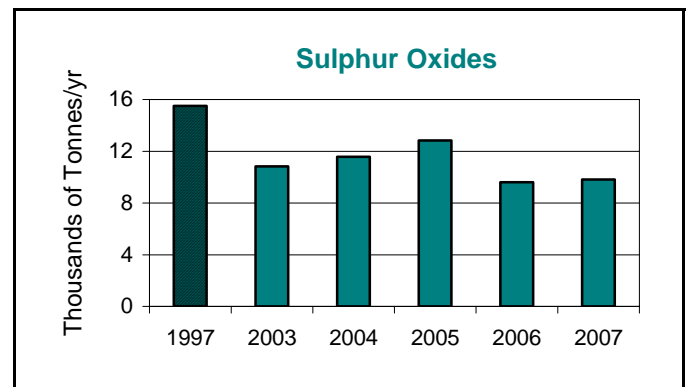
6.2 Nitrogen Oxides (NOx)

- Nitrogen oxides are precursors to ground level ozone. The main source of NOx is the combustion of fuels.
- NOx emissions have been reduced by almost 21% since 1997. NOx emissions over the past five years show a slightly improving trend.
- Improvements have primarily been achieved by the installation of advanced combustion technology (low-NOx burners) and shutdown of obsolete equipment.



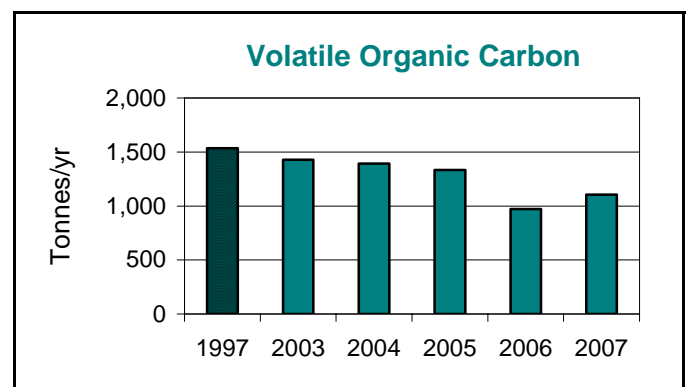
6.3 Sulphur Oxides (SOx)

- Sulphur oxides are composed mainly of sulphur dioxide (SO₂).
- SOx emissions have been reduced by 37% since 1997.
- SOx emissions over the past five years show a slightly improving trend.
- Reduction in emissions have primarily been achieved by switching to lower sulphur fuels and feed stocks, shutting down obsolete equipment and recent reductions in coke production by member companies.



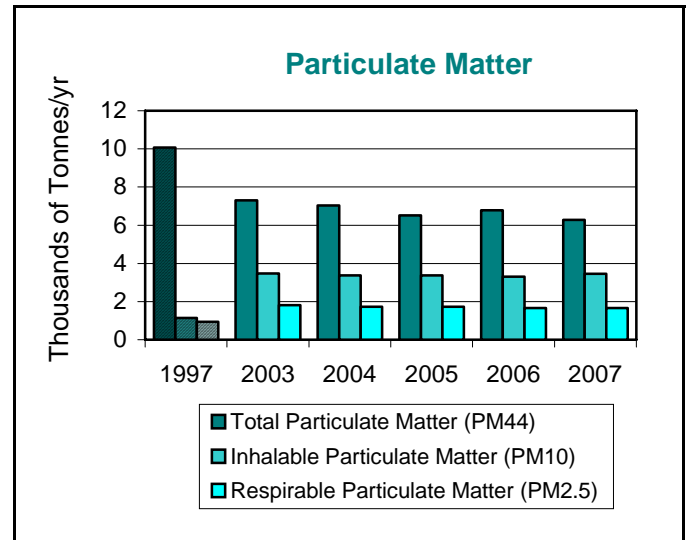
6.4 Volatile Organic Carbon (VOC)

- Volatile Organic Carbon includes a variety of organic compounds that react with nitrogen oxides and sunlight to form ground level ozone.
- While levels have increased over 2006 as a result of operational problems, VOC emissions are 28% lower than 1997 levels. Extensive maintenance programs are being implemented to ensure future improvements.
- VOC emissions over the past five years show an improving trend.
- The reductions were achieved primarily by the installation of benzene emission controls at the coke by-products plants.



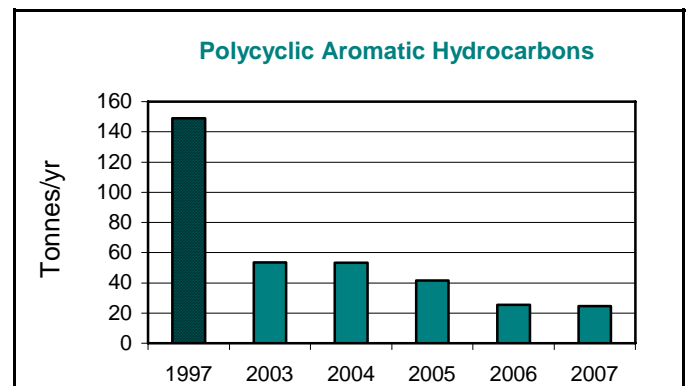
6.5 Particulate Matter

- Total Particulate includes particles smaller than 44 microns (PM₄₄) - the size limit of particles that can be suspended in air.
- Inhalable Particulate includes particles smaller than 10 microns (PM₁₀) - the size of particles that can be inhaled.
- Respirable Particulate includes particles smaller than 2.5 microns (PM_{2.5}) - the size of particles that can be inhaled deeply into the lungs.
- Total Particulate Matter emissions by HIEA companies have declined by 38% since 1997. TPM emissions over the past five years show an improving trend.
- The higher numbers for PM10 and PM2.5 reported since 2001 are a result of improved testing methods and better information.
- Particulate emissions control is a priority for many HIEA companies and there are numerous programs responsible for the improvements, including point source controls, shutdown of obsolete equipment, improved operating practices, paving of roads and yards, and greenbelting.
- Since 1999, HIEA has contributed approximately \$120,000 to local greenbelting programs.



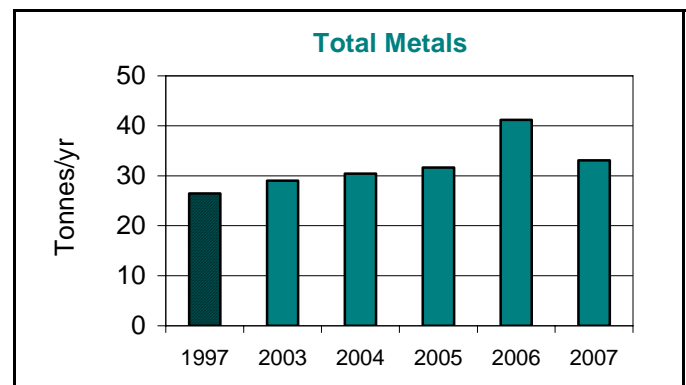
6.6 Polycyclic Aromatic Hydrocarbons (PAH)

- PAH emissions have been reduced by 83% since 1997.
- PAH emissions over the past five years show an improving trend.
- Reductions in emissions have primarily been achieved by improving coke oven maintenance and shutting down obsolete coke plants.



6.7 Total Metals (TM)

- Total Metals emitted include copper, lead, zinc, cadmium, chromium, nickel, mercury, manganese and vanadium.
- TM emissions in 2007 are 20% below 2006 levels.
- TM emissions are 25% higher than 1997 due to increased production and improved reporting methodology. TM emissions over the past five years show an increasing trend.
- Improvements are being made and have resulted in reduced emissions.
- Companies continue to implement particulate emission control plans which help control metal emissions.

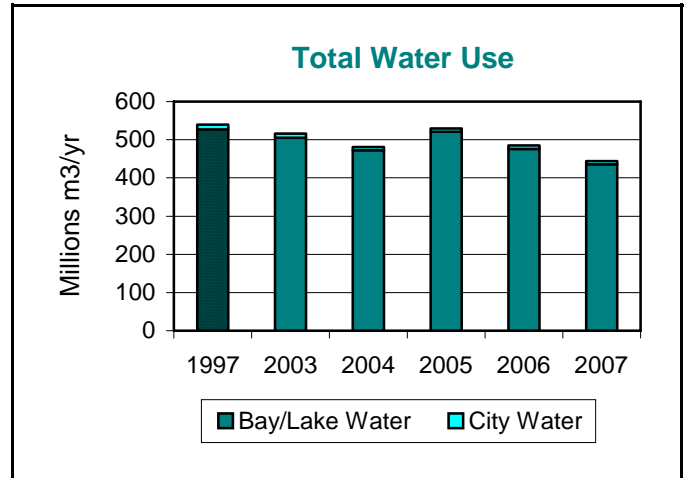


7. Water Discharges

Some HIEA members discharge waste water to the municipal sanitary sewer system and some discharge to the bay or lake. The data provided below includes both the direct discharges and those from the Hamilton Sewage Treatment Plant attributable to members.

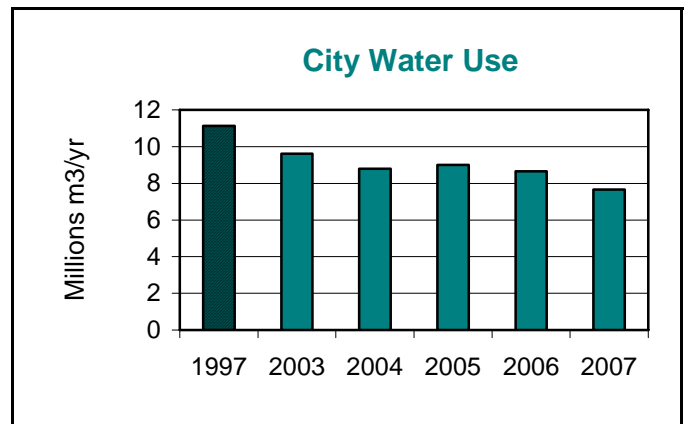
7.1 Total Water Use

- Bay/lake water use has decreased by 17% since 1997.
- Bay/lake water use over the past five years shows a reducing trend.
- A large portion of this water is used for non-contact cooling. This water circulates within equipment without contacting a process and does not pick up contaminants.
- Bay water is also used for dust control.
- In 2007, city water use was only 1% of total water use.



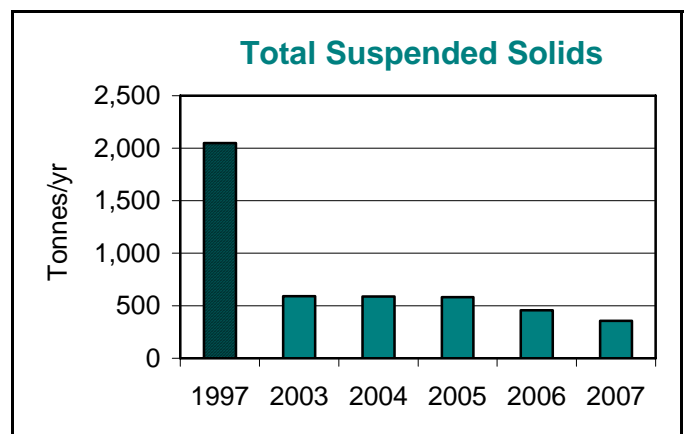
7.2 City Water Use

- HIEA companies have reduced city water use by 31% since 1997.
- City water use over the past five years shows a reducing trend.
- In 2007, city water use was only 1% of total water use.



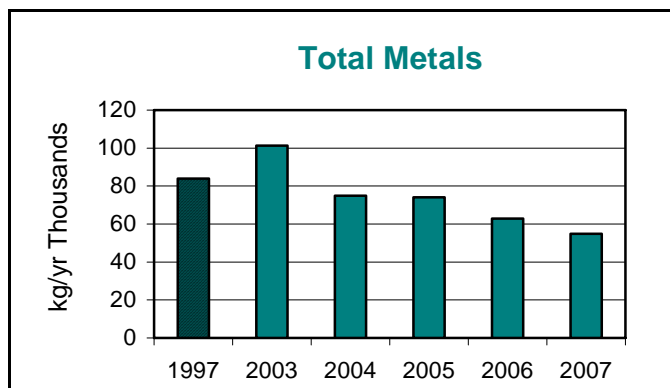
7.3 Total Suspended Solids

- Total Suspended Solids discharges have been reduced by 83% since 1997.
- Total Suspended Solids discharges over the past five years show an improving trend.
- Implementation of tight water recycle systems and shutdown of obsolete facilities contributed to the improvement.



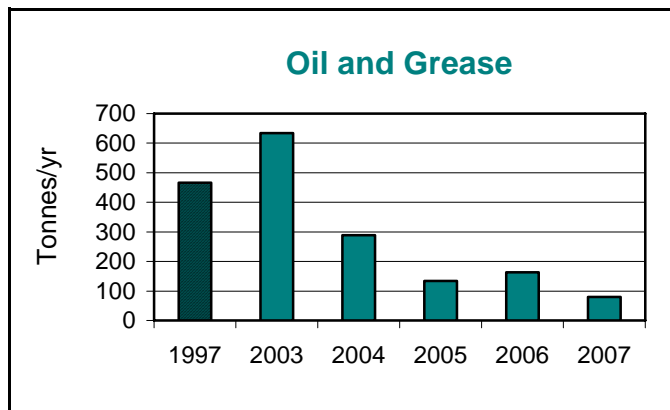
7.4 Total Metals

- Total Metals include lead, zinc, cadmium, chromium, iron, nickel, mercury, manganese and vanadium.
- Total Metals discharges attributable to HIEA companies decreased 35% since 1997.
- Total Metal discharges over the past five years show an improving trend.
- The implementation of tighter water recycle systems, and shutdown of obsolete facilities contributed to the improvement.



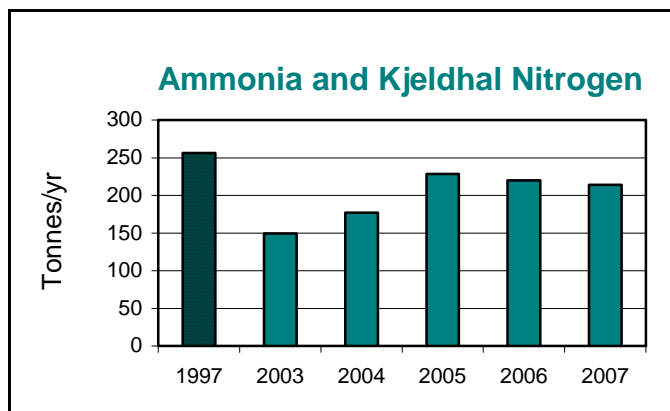
7.5 Oil and Grease

- Oil and Grease discharges attributable to HIEA companies decreased 88% since 1997.
- Oil and Grease discharges over the past five years show an improving trend.
- Implementation of tighter water recycle systems and diversion of some wastewater to sanitary sewer for additional treatment contributed to the improvement.



7.6 Ammonia and Kjeldhal Nitrogen

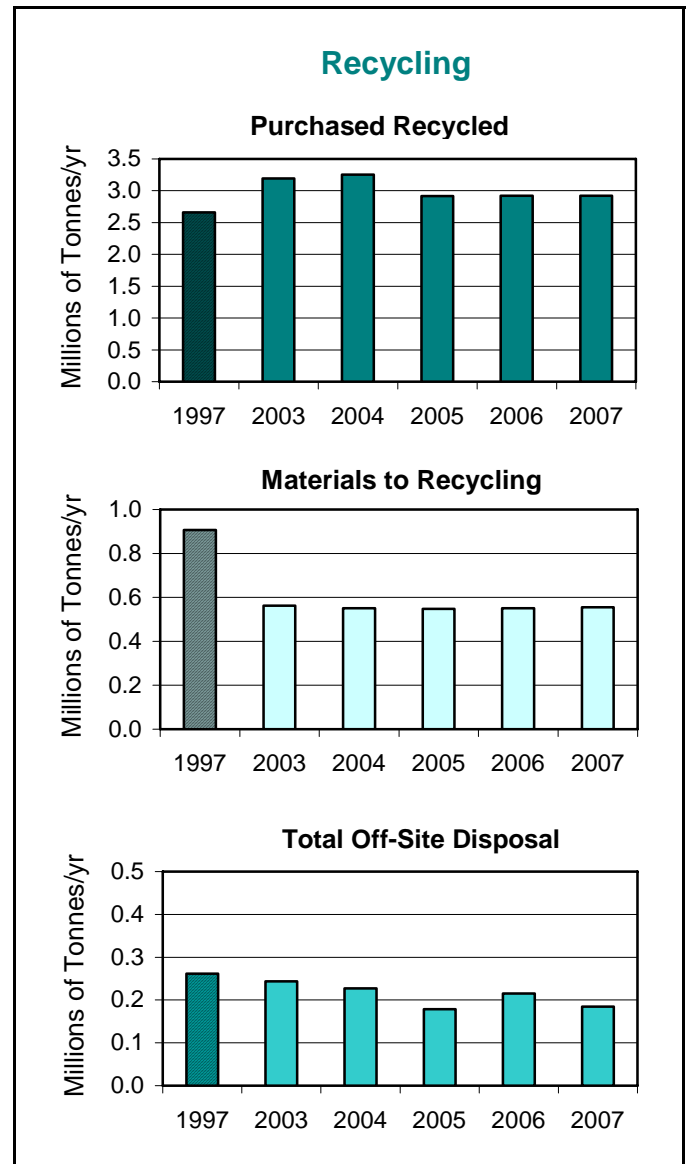
- Ammonia is a parameter commonly measured in industrial effluents. Total Kjeldhal Nitrogen (TKN) includes ammonia and other compounds containing nitrogen like nitrates and nitrites. TKN is a parameter more often used as a measure of municipal waste loads; it is not usually measured in industrial effluents. Both are a measure of nitrogen discharge to Hamilton Harbour.
- While Ammonia and TKN discharges over the past five years show an increasing trend, discharges attributable to HIEA companies have decreased by 16% since 1997.
- Implementation of tighter water recycling systems and diversion of some wastewater to sanitary sewer for additional treatment are possible measures to help reduce this emission.



8. Recycling and Waste Management

8.1 Recycling

- Hamilton is an important recycling centre and HIEA companies are major participants.
- HIEA member companies purchase by-products and waste from other companies to recycle or manufacture into other usable products. They also purchase products made of recycled materials. Member companies sell by-products and wastes to other companies for recycling or otherwise dispose of them.
- HIEA companies purchased recycled materials and by-products totalling almost 3 million tonnes in 2007, an increase of almost 10% since 1997.
- Reductions in purchased, recycled materials/by-products since 2004 were due to lower scrap purchases and higher utilization of internal sources of scrap at the steel companies.
- Materials sent to recycling include a wide variety of materials, from blast furnace slag to office paper, which HIEA companies send to other companies as valued products or raw materials for their processes. Each year over 550,000 tonnes are recycled.
- In 2007 almost 19 tonnes of recycled materials were purchased or produced by HIEA companies for every tonne of waste disposed off-site.
- In 2007, 95% of the non-recyclable waste disposed off-site was non-hazardous industrial waste.



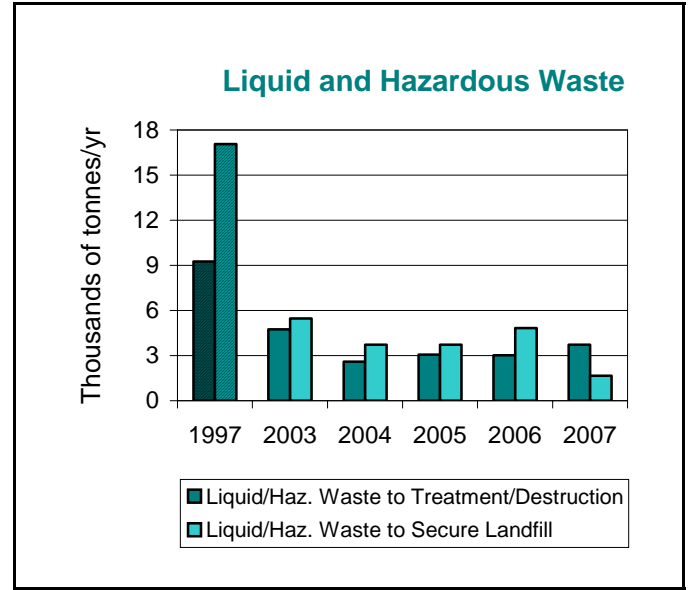
8.2 Commercial Waste

- Commercial Waste is waste material that originates in business establishments such as office buildings or stores and excludes household and industrial waste.
- Commercial waste sent to landfill has declined 30% since 1997.
- Commercial waste sent to landfill over the past five years shows a reducing trend.
- The reduction was achieved by implementation of "3Rs" recycling programs for paper, glass, cans, cardboard, plastic, etc., as well as continuously implementing new recycling opportunities.



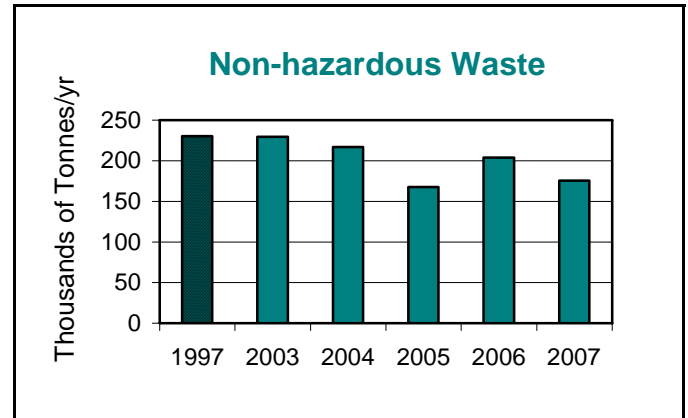
8.3 Liquid and Hazardous Waste

- Liquid industrial and hazardous wastes are referred to as “subject wastes” by Ontario regulations.
- Liquid and hazardous wastes are landfilled, solidified, treated to render them non-hazardous, or destroyed.
- The amount of liquid and hazardous waste diverted to treatment and destruction has decreased 60% since 1997. This is a result of less waste generation and greater internal re-use of wastes.
- HIEA companies recycling opportunities have contributed to the 90% reduction in landfilled liquid and hazardous waste since 1997.



8.4 Non-hazardous Waste

- In 2007, 95% of the non-recyclable waste disposed off-site was non-hazardous industrial waste.
- Non-hazardous wastes include all wastes that are not subject or commercial/domestic wastes that are sent to landfill.
- Non-hazardous waste sent to landfill has decreased 24% since 1997. This is a result of less waste generation and greater internal re-use of wastes.





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