



2021 Report to the Community



HIEA Mission, Goals and Objectives



Mission: Care for our environment and improve the quality of life in our communities through sustainable operations, open dialogue with our neighbours, and local partnerships that support environmental education for Hamilton students.

Goals and Objectives:

- Support innovation toward a lower-carbon future by working with stakeholders, including suppliers, customers, and government, to implement transformational changes and breakthrough technologies.
- Serving and improving communities by delivering jobs and growth and by monitoring and communicating our environmental performance in a transparent manner.
- Support members to improve their environmental performance, and where possible go beyond requirements required in environmental regulation.
- Support enhanced public awareness of local environmental issues through community engagement and education.

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Message from the Chair



I would first like to say that it has been my personal and professional pleasure to have been a Director of HIEA since 2016 and the Chair of the Board of Directors since 2018. I am very proud of all that we have been able to accomplish and would like to offer my sincere thanks to all of our members and staff for their continued hard work and dedication throughout this particularly challenging year. While some uncertainty remains and we will surely face more adversities,

HIEA will continue to invest our time and resources to fulfil our mission to:

Care for our environment and improve the quality of life in our communities through sustainable operations, open dialogue with our neighbours, and local partnerships that support environmental education for Hamilton students.

In 2021 we welcomed a new Vice Chair, Julie Wedzinga who replaced Andrew Sebestyen, and a new General Manager, Geoffrey Knapper who replaced Ed Cocchiarella. Our Board of Directors also underwent adaptation as Bruce MacGregor replaced Gabriel Panaccio at Air Liquide, Karl Marcotte replaced Adam Ruys at AIM, and Robert Van Vugt replaced Mark Lynch at Sanimax. I wish Andrew, Ed, Gabriel, Adam and Mark all the best and look forward to our continued work in the Hamilton Community.

We are incredibly honoured to provide a new endowed fund in a brand new, first of its kind Sustainable Chemistry Program at McMaster University. We were very fortunate to have special guests Professor's Gillian Goward and Michael Brook join us at our fall public meeting to discuss the significance of this program. "Chemists need to practice environmental

stewardship," says Brook, who will teach in the new program. "Our stewardship needs to start in labs and classrooms and continue into the chemical industry. In the decades ahead, chemists will be counted on to make key contributions in building a sustainable green economy," says Brook. The first award will be issued September 2022 and HIEA is delighted to support a bright and talented student every year going forward.

One of the key benefits of HIEA membership is our ability to merge resources as a collective of 14 companies to improve our connection to the community. One of the ways we can do this is by supporting environmental education programs for Hamilton's youth. In 2021, HIEA supported The Bay Area Restoration Council, The Hamilton Conservation Foundation, The Royal Botanical Gardens, and the City of Hamilton's McQuesten Urban Farms. Details about the specific programs that were funded can be found later in this report.

HIEA members also understand that it's today's students who will be tasked to help us shift to a more sustainable future and we believe that post-secondary environmental studies are a primary focus for financial support. Since 2006, HIEA has awarded students with our own scholarship fund at Mohawk College. The endowed fund has provided a total of over \$27,000 to support 30 recipients enrolled in Environmental Diploma Programs.

HIEA is proud of the work we've been able to do in our community. As a neighbour to industry, your input is integral to HIEA's on-going success. We welcome your involvement. For more information about our meetings and other current initiatives, visit hiea.org or contact us at 905-662-2131 or prcommunications@hiea.org.

A handwritten signature in black ink, appearing to read 'John Lundrigan', written in a cursive style.

John Lundrigan
Chair of the Board - Hamilton Industrial Environmental Association

Message from the General Manager



I was pleased to join HIEA as the General Manager in 2021, and despite significant restrictions still in place due to the pandemic, the year was quite productive. I would like to thank John Lundrigan, Julie Wedzinga, Andrew Sebestyen, and Heidi Levitzky for helping me transition into the General Manager role as well as providing the policy and operational background to fully understand the intent and scope of HIEA's advocacy and its activities.

HIEA continues its advocacy role for its members, in particular participation in

forums and policy discussions that would have a material impact or benefit for the community, the City of Hamilton and the Province of Ontario. HIEA and its members believe that through its participation in local and provincial initiatives and policy discussions, that new policies or proposals will be more effective, balanced and equitable for our city and our members as stakeholders. These include:

- Clean Air Hamilton and Dust Management Sub-Committee
- Hamilton Truck Advisory Focus Group
- The External Working Group on Regulation 419
- The Iron and Steel Technical Standards Working Group
- Bay Area Climate Change Council
- Bayfront Industrial Area Strategy
- Community Energy and Emissions Plan
- Hamilton Chamber of Commerce, Waste Heat Recovery Project

Over the past year HIEA finalised an endowed scholarship fund for the Sustainable Chemistry program at McMaster University, equating to \$80,000 over the next five years. Beginning in 2022 and every year going forward a select student will receive this \$2,500 scholarship. We are very proud to be partnering with McMaster and supporting students in this new, forward-thinking program. HIEA and its members believe that this directed academic support is instrumental to helping achieve its vision that

today's students are future decision makers and change-makers. These trailblazers will practice chemistry more sustainably to decrease negative environmental impacts such as climate change, resource depletion, air pollution and biodiversity loss.

As part of its advocacy role HIEA also responded on behalf of its members to the following proposals published by the Ministry of Environment, Conservation and Parks (MECP) on the Environmental Registry of Ontario (ERO): Land Use Compatibility Guideline; Modernizing Environmental Compliance Practices of the Ministry of the Environment, Conservation and Parks; and Guideline to Address Odour Mixtures in Ontario. All responses have been published on the ERO.

HIEA companies remain committed to compliance with applicable air emissions standards having spent \$639 million on air-related and other environmental improvements over the last 5 years. HIEA and its members are also actively engaged with the City of Hamilton and the Government of Ontario on discussions around advanced manufacturing and Ontario's Hydrogen Hub strategy.

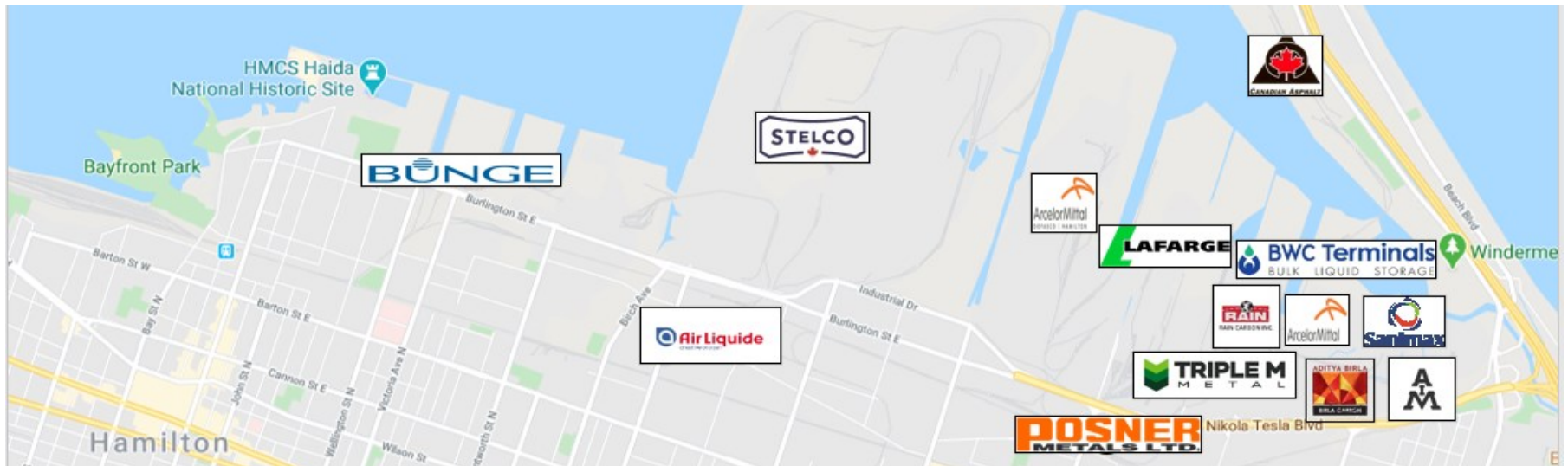
HIEA's members have not only championed the circular economy but practice it every day as part of their core business. HIEA members form part of an important business model and industrial systems-based approach involving manufacturing processes and economic activities. This results in the reuse and recycling of member companies' by-products and waste and recovers tremendous value. This circular economy approach is less resource intensive and recaptures waste for reuse in new materials and products and protects the environment.

HIEA and its member companies are dedicated to fostering a strong and sustainable future through the actions of its members, their commitment to the environment and through supporting education initiatives for the Province of Ontario, The City of Hamilton and all its residents.

A handwritten signature in black ink, appearing to read 'Geoffrey Knapper'. The signature is stylized and written over a horizontal line.

Geoffrey Knapper
General Manager—Hamilton Industrial Environmental Association

2021 HIEA Members ...



Air Liquide - www.airliquide.com - is a global provider of industrial and medical gases and related services. Founded in 1902, Air Liquide has 125 subsidiaries in 75 countries and has 40,000 employees, including 2,000 in Canada.

American Iron and Metal - www.aim-recycling.com has roots in the world of metal stretching back over 80 years, American Iron & Metal (AIM) is a family-owned company, recognized as a world leader in the metal recycling industry. From humble beginnings, AIM has evolved into a multi-faceted firm with multiple facilities and over 2,000 employees located throughout the world. Thanks to its global reach and personalized local support, AIM provides customers with unsurpassed service and support.

ArcelorMittal Hamilton East Inc. - www.arcelormittal.com is a major North American steel wire producer servicing the automotive, OEM, and construction markets.

ArcelorMittal Dofasco - www.dofasco.arcelormittal.com is a leading North American steel solutions provider. The corporation's steel

products include hot rolled, cold rolled, galvanized and tinplate steels as well as tubular products and laser welded blanks. ArcelorMittal Dofasco's wide range of steel products are sold to customers in the automotive, construction, energy, packaging, manufacturing, pipe and tube and steel distribution markets.

Birla Carbon Canada Ltd. - www.birlacarbon.com is the world's leading sustainable manufacturer and supplier of carbon black additives. Our global presence ensures that our carbon black is of the highest quality worldwide, delivering a consistent product wherever our customers are. Whether an established formulation or a custom solution, Birla Carbon is the right partner with the right product for superior performance in any application for tires, specialty blacks and mechanical rubber goods. Birla Carbon has 16 manufacturing sites worldwide and employs 110 people at the Hamilton site.

Bunge Canada - www.bungecanada.com is the country's largest processor of oilseeds. At its Hamilton facility, which employs more than 120 people, Bunge processes oilseeds into protein meal and edible oils.

2021 HIEA Members ...

BWC Terminals - www.bwcterminals.com is a premier provider of bulk liquid storage and related services throughout Canada and the United States. BWC Terminals is committed to maintaining zero injuries, illnesses, and incidents within their organization. We believe in providing the highest standard of performance and business excellence by continuously improving processes, practice, and products through management and employee commitment and accountability.

Canadian Asphalt Industries Inc. - www.canadianasphalt.com employs 30 employees at the Hamilton plant where they produce and blend many different grades of paving and roofing asphalt, respectful of the environment in the process.

Lafarge - *A member of LafargeHolcim* - www.lafarge.com employs approximately 40 employees who process blast furnace slag for grinding into cementitious cement, lightweight aggregate use as well as road base and Rockwool Insulation markets.

Posner Metals - www.posner.ca were recyclers long before the idea of recycling began. In some ways, we consider ourselves to be 'pioneers' of environmentalism. When we entered this business over 40 years ago the environment was not a major social concern and the idea of 'recycling' was virtually unheard of. We got into the business because it seemed practical and profitable to collect and use scrap metal. Today, environmental concerns are among the major forces that drive our business. Landfills cannot accommodate the massive quantities of metal being consumed by society. In addition, the savings in energy costs and environmental impact by reducing mining are a substantial benefit of recycling metal. As it was 40 years ago, our solution is to gather metals and deliver it to organizations that can reuse it. Naturally, our approach to metal recycling operations has evolved to meet the highest environmental standards in all aspects of our operations. For four generations, from Hans Posner to the current management to the next generation, we have continued as a family-run business.

Rain Carbon Canada Inc. - www.raincarbon.com employs 72 people involved in the distillation of coal tar.

Sanimax/ABP - www.sanimax.com employs over 1,000 people across North America and is a values-driven organization which transforms by-products from the food and meat industries into useful materials for other services.

Stelco - www.stelcocanada.com operations consist of Lake Erie Works, a fully integrated steelmaking facility that has the capability of producing approximately 2.6 million tons of steel annually and Hamilton Works, home to coke making and steel finishing facilities including the Z-Line, one of North America's premier zinc-coating lines. Together these facilities employ approximately 2,000 people. Stelco produces high quality steel that is used primarily in the North American automotive, construction, infrastructure, appliance, manufacturing and pipe and tube industries.

Triple M Metal LP - www.triplemmetal.com has a home-grown innovative approach to the sourcing and sale of scrap metal products and grades, evolving from modest beginnings to become one of North America's largest, privately-held, fully integrated recyclers of ferrous and non-ferrous scrap metal.

Our growing enterprise operates 27 facilities across North America, including Canada, the United States and Mexico, with additional interests in Europe.

Locally, Triple M Metal LP employs more than 200 people at four facilities.

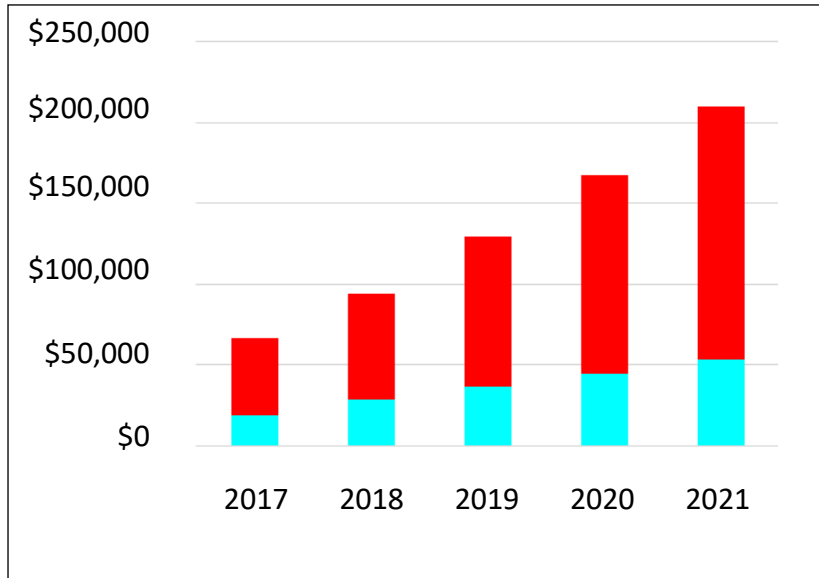
From local or community-based peddlers to the largest international companies, we strive to build confidence and value by providing customized solutions that deliver on all metal recycling and process needs.

The foundation of our business has been built on a strategic vision, to be North America's most sought after, people-first strategic partner who creates value and success for all stakeholders while maintaining our five core values – Respect, Integrity, Excellence, Team and Pride.

HIEA in the Hamilton Community

HIEA's Sponsorship Program

5 Year Cumulative Support



Since 1999, HIEA has provided financial support to initiatives that enhance and protect our local environment. Organizations interested in receiving funding are encouraged to **submit applications before September 30th** each year to ensure consideration. Application forms and criteria for funding can be found on our website hiea.org. Our contribution level varies according to the need, our opportunity to make a difference, and our budget. The budget is established annually and approved by the Board of Directors.

Although 2020 and 2021 were different from other years, HIEA continued to support programs through their adaptations.

The programs HIEA chose to support were:

- The Bay Area Restoration Council (BARC) for their Yellow Fish Road program
- Royal Botanical Gardens Green Angels Program
- Hamilton Conservation Foundation/Hamilton Conservation Authority Outdoor Environmental Education Program
- The City of Hamilton McQuesten Urban Farm

The ***Bay Area Restoration Council (BARC)*** and their [Yellow Fish Road](#) program has been a long-time recipient of HIEA funding, going back to 2007! This premier water education program helps Hamilton's youth to protect its watershed, and merges hands on learning with civic action. Painting yellow fish symbols on the road next to storm drains, this program reminds Canadians of the negative impacts of runoff pollution through storm drains.

In 2021 some of the funding went toward the planning and promotion of Yellow Fish Road events that were cancelled due to bad weather and were unable to be rescheduled due to COVID restrictions involving the necessary volunteers. The remaining funds went towards programs where participants learned about the impact of pollution and what steps they can do to protect their local watersheds. This was offered virtually in a program called 'Stream of Dreams' to 37 classes and in another program called 'Home to Harbour' which was delivered to 15 classes.

For more information about BARC and the work it does check them out at www.HamiltonHarbour.ca.

HIEA in the Hamilton Community

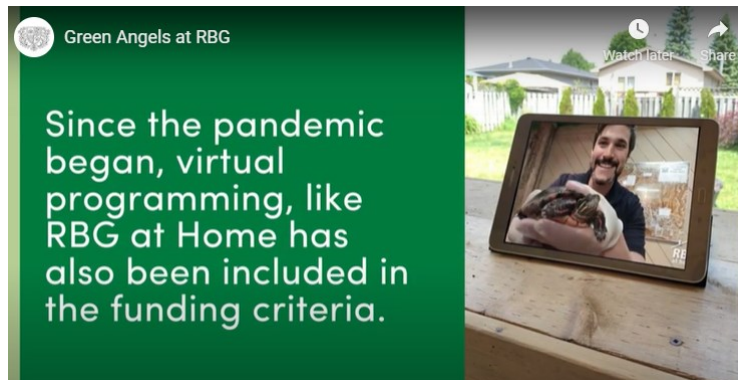
The **Royal Botanical Gardens** Green Angels Program provide the helping hands that guide disadvantaged, special needs and new Canadian children to a special place where they can let their imagination grow in a safe environment – and fall in love with nature.

HIEA's donations from 2014-2021 have made it possible for 2,463 Hamilton-area children and youth as well as their teachers and caregivers to attend outdoor school, camp and other environmental education programs, free of charge.

The 2021 HIEA grant allowed RBG to deliver virtual interactive education programs to Hamilton schools, by removing the financial barrier to participate in RBG environmental education for educators and families.

As a result of HIEA's 2021 grant, 940 students from the Hamilton Wentworth District School Board and the Hamilton Wentworth Catholic District School Board were able to participate in 36 virtual field trips.

To learn more about the Green Angels program check their website: www.rbg.ca/subsidy.



HIEA in the Hamilton Community

The [McQuesten Urban Farm](#), located on an unused parcel of City-owned land, is a partnership between the City, the Social Planning and Research Council of Hamilton (our charitable partner) and the McQuesten Community Planning Team. This project is part of the Neighbourhood Action Plan as a key action to promote greater food security for residents and to improve the overall parks and green space within the neighbourhood.

With HIEA's support from 2017 to 2021, McQuesten Urban Farm continued planting activities and established an additional 250+ metres of the native plant walk. They also undertook significant maintenance and replanting of some areas of the plant walk that required greater weed control and restoration. They have also installed a filter bed/wetland onsite that will treat the grey water from the vegetable washing station that is planted with additional native plantings. In total, over 600 native shrubs and 4,500 native perennials have been planted to date. There are approximately 100 metres of the walk remaining to be established on the farm site. To date HIEA has provided \$40,000 towards native plantings on site which has gone a long way towards improving the overall ecological function of the site as well as providing significant aesthetic improvements for the community.

This undertaking has increased the biodiversity of the site which previously had no other vegetation besides turf grass. It also improves the overall aesthetics and makes it a more welcoming place for the community. Some of the native plants and trees also provide food, medicinal and agricultural products that are useful for the urban farm. We encourage you to check out their website - www.mcquestenurbanfarm.ca to learn more about this project.



HIEA in the Hamilton Community

The **Hamilton Conservation Foundation** has traditionally directed funds to support the Hamilton Conservation Authority (HCA) enabling it to run their Outdoor Environmental Education Program and allow additional needs-based funding for transportation subsidies. The donations raised through the Foundation for outdoor educational programs in the Dundas Valley Conservation Area (DVCA) are vital to keeping the program alive and help to augment fees paid by school boards and ensure the program is accessible to all students.

With the support of HIEA, the HCA used the 2021 funding for projects at the DVCA. The first was to refurbish two interpretive plaques which were updated in-house and new overlays for the plaques were created using new artwork. The second project was artwork for the new interpretive panel for the Bird Blind.

Please visit their website to learn more about the different aspects of this program :
<https://conservationhamilton.ca/environmental-education-home/>



Since 2008, HIEA has supported the **City of Hamilton - Water and Wastewater Division, Public Works**, and the Children's Water Festival. This three day event offers 30 activities geared to water conservation, water science and technology, water awareness and water protection. It brings 2,400 Grade 4 students, 200 secondary students and 100 volunteers together to enjoy hands-on educational activities that support the Ontario Curriculum including the 2007 Ontario Science and Technology curriculum. Completing activities through hands-on activities ensures that students learn to respect water and the environment while having fun.

This festival went digital in 2021 and saw 130 classes and over 2,900 students and teachers sign up to receive a digital activity package based on regular Water Festival activities. HIEA created a package based on biodiversity of wetlands. For more information about this project visit: www.hamilton.ca/



HIEA in the Hamilton Community Continued

Public Bi-Annual Meetings ...Community Engagement is at the core of what HIEA is all about, and each spring and fall HIEA hosts a public meeting where all are invited to exchange information and further expand our dialogue between industry and the community. In 2021, HIEA hosted each event virtually.

The Spring meeting brought special Keynote Catherine Cobden, President of the Canadian Steel Producer's Association (CSPA). Cobden discussed the March 2021 CSPA Climate Call to Action, a consensus document amongst all CSPA members, 100% of Canada's steel production. It establishes their Net Zero by 2050 Aspirational Goal and recognized this significant step for the industry and leadership. Cobden went on to explain how steel is an essential material in our evolving world and is in demand for the technologies and applications of modern society. She explained how Canada can play a vital role in finding solutions for the global steel industry while still ensuring the ongoing competitiveness of our domestic sector. The CSPA is ready to work on this challenge and is calling upon our governments and partners support.

The fall meeting showcased a Feature Presentation "Energy Harvesting Project, Opportunities for Hamilton Manufacturers and the Wider Community" with Guest Speakers Ankur Mehrotra, Research Consultant and Richard Allen, Project Consultant, both of Hamilton Community Enterprises. This presentation introduced a smart city initiative designed to reduce local carbon emissions and help ensure energy security. The presenters highlighted an exciting new project to modernize and expand Hamilton's district energy system — including a vision to incorporate industrial waste heat as a fuel source.

The Fall meeting concluded with a short presentation from Gillian Goward, Professor and Chair of the Department of Chemistry and Chemical Biology, and Michael Brook, Professor of the Faculty of Science, both part of McMaster University's brand-new and first of its kind Sustainable Chemistry program. They emphasized the importance of thinking about the entire life cycle of the products industry makes and concluded thanking HIEA for providing a scholarship that will award \$2,500 to a student every year.

In conjunction with the Trees for Hamilton and the Hamilton Conservation Authority, native trees and shrubs were planted for each registrant at Valens Conservation Area to reduce the carbon footprint of the meeting.

These meetings are open to everyone. For information, please check our website at hiea.org or contact us at prcommunications@hiea.org to register to attend.



HIEA in the Hamilton Community Continued

HIEA Partners with Niagara College's Environmental Management & Assessment Post-Graduate Program

From January to April 2021, HIEA engaged with another intern from Niagara College's Environmental Management and Assessment, Post-Graduate program to continue examining air quality in steel producing cities around the world for comparison to Hamilton. The purpose of this study is to raise awareness for the Hamilton community with respect to local air quality relative to other steel manufacturing cities outside of Canada.

The cities selected come from all areas of the world, allowing a unique and diverse comparison to be completed.

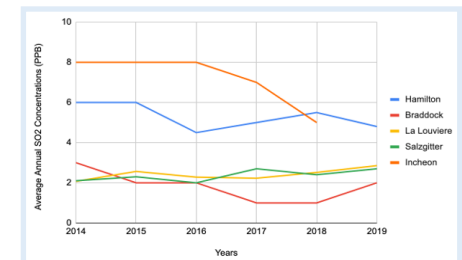
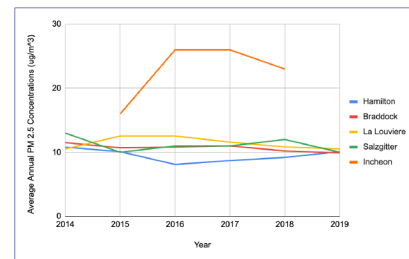
- **Braddock, Pennsylvania,**
- **Salzgitter, Germany,**
- **La Louviere, Belgium, and**
- **Incheon, South Korea**

As can be seen from the accompanying graphs, overall Hamilton performs well in comparison to the other cities for most of the identified parameters. It should be noted the levels of each of the pollutants is a function of not only steel production but also reflects the make up of surrounding industries. In the case of Hamilton there is proximity to major roadways, fuel terminals and other secondary and tertiary manufacturing. HIEA is looking to further examine and refine

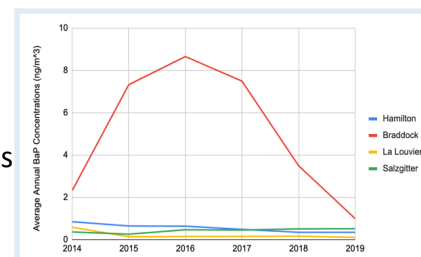
the results of this study in the future.

Hamilton industries continue to improve their emissions through innovations and investments while maintaining compliance with provincial and federal regulations.

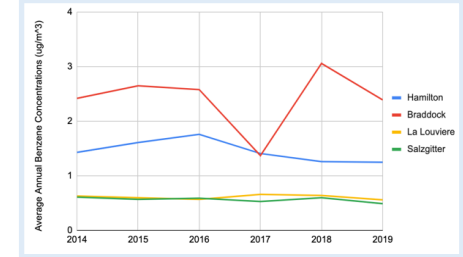
Average Annual Concentrations



PM2.5



SO2



HIEA Member Spotlight: Decarbonization Project

ArcelorMittal and the Government of Canada announce investment of CAD\$1.765 billion in decarbonisation technologies in Canada

In 2021, HIEA member ArcelorMittal announced its intention for a CAD\$1.765 billion investment in decarbonization technologies at ArcelorMittal Dofasco's plant in Hamilton. The intended investments will reduce annual CO₂ emissions at ArcelorMittal's Hamilton, Ontario operations by approximately 3 million tonnes, which represents approximately 60% of facility emissions, within the next seven years. This means the Hamilton plant will transition away from the blast furnace-basic oxygen furnace steelmaking production route to the Direct Reduced Iron (DRI) – Electric Arc Furnace (EAF) production route, which carries a significantly lower carbon footprint. These new manufacturing processes will not only reduce CO₂ emissions but also deliver other significant positive environmental impacts including the elimination of emissions and flaring from coke making and basic oxygen steelmaking.

At the heart of the plan is a 2 million tonne capacity DRI facility and an EAF facility capable of producing 2.4 million tonnes of high-quality steel through its existing secondary metallurgy and secondary casting facilities. Modification of the existing EAF facility and continuous casters will also be undertaken to align productivity, quality, and energy capabilities between all assets in the new footprint.

The new DRI and EAF will be in production before the end of 2028.



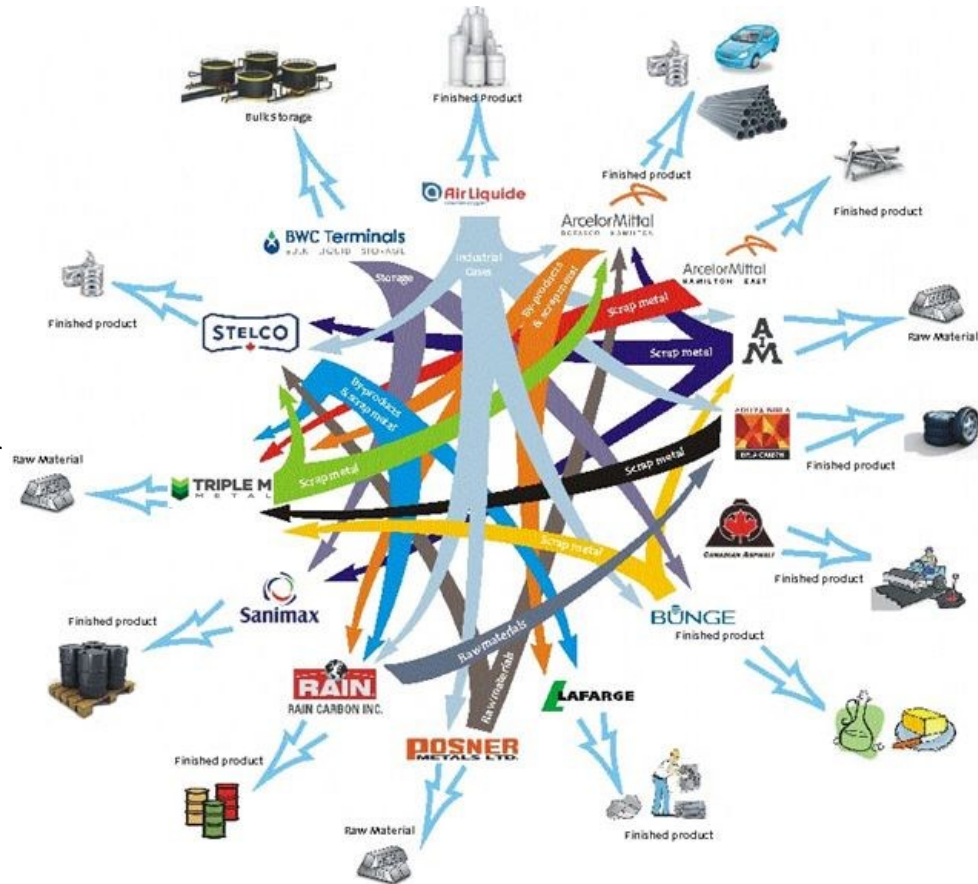
This project contributes to the sustainability of well-paying skilled positions in advanced manufacturing and is also expected to support as many as 2,500 jobs during the engineering and construction phases. It will also support ArcelorMittal Dofasco's customers decarbonization ambitions while further enhancing ArcelorMittal Dofasco's capability to support the most demanding product segments including automotive exposed, advanced high strength steels, and consumer packing.

... HIEA's Circular Economy

In a **linear economy**, we take natural resources from the earth, process it, use it, and then give it back to the earth as a waste. This model is known as “take-make-waste”, which is unsustainable in the long run as the earth can't process these wastes fast enough. We need to shift the model to be circular and sustainable which is in contrast to what we're doing now. In a **circular economy** we can give a second life to our wastes to make other things we need while leaving natural resources where they belong, in nature.

In Canada, only 6% of products and raw materials are circular in comparison to the Netherlands whose reuse rate is 30%. Canada is vast with 9.9 million square kilometers of land which makes it difficult for the supply chain to align over different jurisdictions as well as different levels of government. Canadians are also large consumers and we have relatively inexpensive resources allowing companies to be more profitable using virgin materials.

In order to achieve a true circular economy, it requires great effort by individuals, businesses, and governments. And the benefits are invaluable according to the Ellen MacArthur Foundation. Cities would thrive as economic productivity increases through reduced congestion, eliminated waste, and reduced costs. New growth and business opportunities would support skills development and jobs. Cities would become more liveable with improved air quality, reduced pollution, and enhanced social interactions. And finally, cities would become more resilient, with a reduced reliance on raw materials by keeping products in use and balancing local production with global supply chains.



HIEA is a key illustration of a system-wide circular economy that minimizes the extraction of raw material resources and waste generation. Member companies exchange commodities and by-products, giving materials a second life instead of being sent to the landfill. Collaborations such as these reduce transportation related greenhouse gas emissions and dust emissions, reduces traffic congestion and lower costs to the city for road maintenance.

HIEA's Position on Climate Change

- HIEA recognizes the importance of Climate Change and acknowledge our role as a partner to develop solutions to reduce our emissions.
- HIEA supports Canada's 2050 net-zero emissions commitment and where possible go further and faster.
- HIEA member companies:
 - Are committed to reducing waste
 - Continue to embrace science, technology, and innovation to reduce GHG emissions
 - Will continue to provide operational expertise and analysis to help governments develop practical and operationally viable climate policy solutions, and
 - Are an active partner in discussions and actions through local community initiatives impacting the environment and climate change.
- For more information about climate change statements other commitments of individual companies, please see the links to the right.



HIEA Member	Links
American Iron & Metal	AIM Global-About Us
Air Liquide (Group)	Air Liquide Group-Sustainable Future Air Liquide-CO2 Abatement
ArcelorMittal	ArcelorMittal-Climate Action Report 1-2019 ArcelorMittal Corporate-Climate Change
ArcelorMittal Dofasco	ArcelorMittal Dofasco-Policy ArcelorMittal Dofasco-Climate Change
ArcelorMittal Hamilton East (Long Products)	ArcelorMittal Long Products Canada-Environment
Birla Carbon (links to corporate site)	Birla Carbon-Sustainability Report 2020
Bunge Limited (Bunge-North America site links to Bunge Limited)	Bunge Limited-Action on Climate Bunge Limited-Env Goals
BWC Terminals	BWC Terminals-HSEQ
Canadian Asphalt	canadianasphalt.com
LafargeHolcim	LafargeHolcim-2020 Sustainability Report
Lafarge Canada	Lafarge Canada-Sustainability
Posner Metals	Posner-About
Rain Carbon Inc.	Rain Carbon-Environmental Commitment
Sanimax	Sanimax-Environment
Stelco	Stelco-Environment Stelco-Env Policy 2017
Triple M Metal	Triple M Metal-Our Promise

HIEA Partners with McMaster's CityLAB Course

In the fall of 2021 HIEA was invited to [McMaster's CityLAB Semester in Residence](#) to discuss industry in Hamilton; past, present and future, and HIEA's role in the community. CityLAB is an innovation hub that brings together student, academic, and civic leaders to co-create a better Hamilton for all by taking on local challenges and innovating solutions. This term revolves around the question "who are cities built for?" and unlike a normal three-unit course this is a part of a 15-unit course. This means it is the only course students take for an entire semester which allows students the chance to fully explore the topic. A holistic understanding of how all of the pieces work together, including industry's perspective, is important in helping students answer the fundamental question at hand.

HIEA virtually presented to the class which was followed with a in-person discussion at Windemere basin taking safety precautions. HIEA was unable to accommodate a tour of the actual HIEA geographic area safely, and so Windemere Basin proved to be an ideal location as it overlooks a number of HIEA members allowing for some key discussion points about historical pollution and subsequent clean up efforts. At this location students were also able to explore the ecosystem restoration efforts that have transformed this parcel of parkland into a wildlife habitat oasis. There were approximately 20 students in attendance.



HIEA Commitment to Ongoing Improvement

HIEA members are committed to producing the products that are essential to modern life and economic development, in a way that helps protect people, the environment and the communities we operate in. We work together to conserve water, energy and ecosystems; to reduce greenhouse gas emissions, and to minimize waste. We encourage working with the community to inspire public consciousness in support of environmental sustainability.

Since 1997, HIEA has been collecting emissions data from its members for the purpose of evaluating environmental trends. The data represents a collective of total emissions from HIEA companies who participate in the survey. The following charts are based on the compiled data from member companies using 1997 as a base year.

Working Together to Improve Hamilton's Air Quality

The Hamilton Air Monitoring Network (HAMN) is an independent organization representing 18 industries (many of which are HIEA members) who are committed to the ongoing measurement of local air quality as part of the Ministry of the Environment, Conservation and Parks (MECP) industrial Source Emissions Monitoring (SEM) program. The companies are required to submit an annual summary report of their air quality monitoring results obtained during the previous calendar year. This data is then reported in the HAMN Annual Air Quality Reports available on their website hamnair.ca. The HAMN website also provides [current Hamilton air quality reporting through real-time data reporting](#).

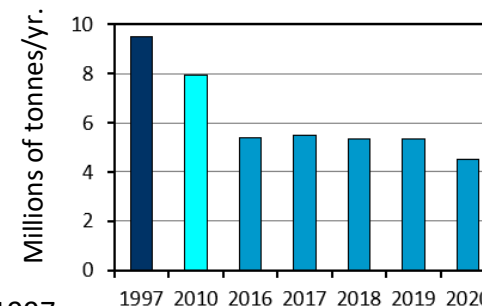
HAMN, established in 2003, plays a key role in helping to determine where progress is being made and identifying air quality issues that require additional focus and attention.

The Hamilton Air Shed Study was commissioned by the City of Hamilton with the support of HIEA and conducted by Golder Associates to analyse the sources of air pollution in Hamilton. The study concluded in 2018. The results revealed that less than 20% of air contaminants

originate from industrial activity for most pollutants in the study. The largest source of air pollution affecting Hamilton is blown in from the USA, followed by transportation. HIEA is dedicated to working with government and stakeholders to improve the air quality in Hamilton as well as helping our city reach its net zero greenhouse gas emissions target by 2050.

Greenhouse Gases (GHG) - 52% reduction since 1997

(GHG) emissions include carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulphur hexafluoride. Carbon dioxide is the most significant greenhouse gas reported by HIEA member companies. Total Greenhouse Gas emissions in 2020 are 52% below the 1997 levels and the five-year trend is trending down.



GHG emission reductions are the result of energy conservation, increased waste energy recovery, increased process yields, and efficiencies and operational changes.

HIEA Commitment to Ongoing Improvement

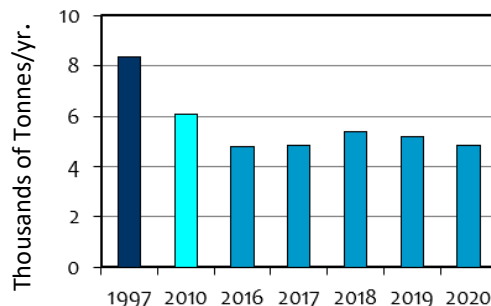
Nitrogen Oxides (NOx) - 42% lower than 1997 emissions

Nitrogen oxides (NOx) are precursors to ground level ozone. The main source of NOx is the combustion of fuels.

HIEA member companies have reduced their NO_x emissions by over 42% since 1997 and the five-year trend is stable.

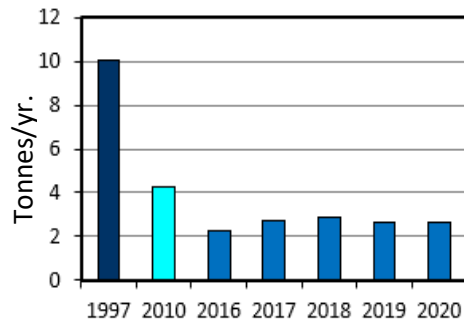
Improvements have primarily been achieved by the installation of advanced combustion technology (low NO_x burners) and the discontinuation of obsolete equipment.

Sulphur Dioxides



Total Particulate Matter (TPM) - 73% below 1997 levels

Total Particulate Matter (TPM) emissions are over 73% below reported levels in 1997, and are 19% higher than those in 2016. Although there are improved testing methods and better information for PM₁₀ and PM_{2.5}, resulting in higher reported numbers of those parameters in 2010 versus 1997, TPM emissions continue to show a reducing trend.



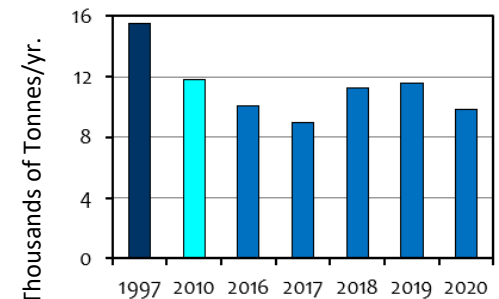
TPM includes particles smaller than 44 microns - the size limit of particles that can be suspended in air.

(SO₂) - 25% reduction since 1997

Sulphur dioxides (SO₂) are a precursor to acid rain. Although SO₂ emissions have fluctuated over the past five years they are relatively similar to those reported in 2016 while the total emissions remain 36% lower than 1997 levels. The five-year trend shows a slight increase.

The fluctuation is often a result of increases or decreases in production that may require different fuel sources may result in SO₂.

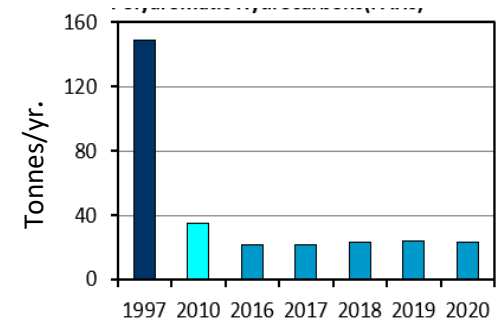
Switching to lower sulphur fuels or feedstock and upgrading equipment can be options used to reduce emissions.



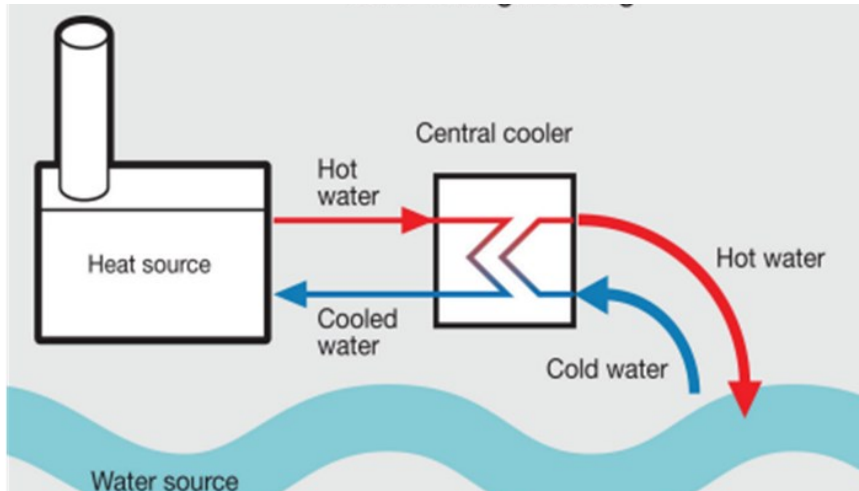
Polycyclic Aromatic Hydrocarbon (PAH) - 84% reduction in emissions since 1997

PAHs are a group of over 100 chemicals, including benzo-[a]-pyrene, that are formed during incomplete burning of coal, oil and gas and are usually found as a mixture containing two or more of these compounds.

PAH emissions have been reduced by 84% since 1997 and although there have been fluctuations in the past 5 years, the trend is now quite flat. These reductions have been achieved primarily by improving coke oven operations.



HIEA Commitment to Ongoing Improvement *continued*



Like many industries, a number of HIEA members have government issued permits to take water. Water is required for nearly every step of production whether it's the products we consume or the food we eat.

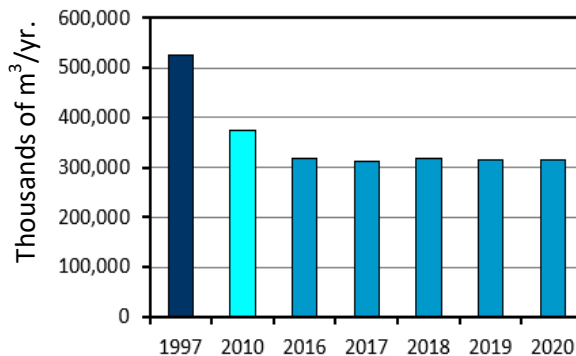
- A large portion of this water is used for **non-contact cooling** and circulates within equipment without contacting any processes and therefore does not pick up contaminants.
- This water is returned right back to the Harbour.
- This raw water is chlorinated coming in (bacteria/algae/zebra mussel control) and dechlorinated (removing chlorine-based by-products) going out to ensure that it is truly safe.

The infrastructure is maintained and updated as required to ensure compliance with provincial regulations and company permits.

Hamilton Harbour Water Use - 40% lower than in 1997

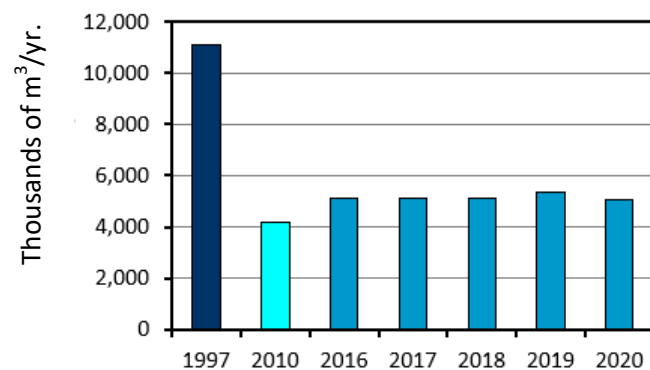
Hamilton Harbour water taking has decreased by over 40% compared to 1997 and shows a flattened trend over the past five years.

The majority of this water is used for non-contact cooling and returned to the Harbour. Some water from Hamilton Harbour is also used for dust control.



City Water Use - 55% below 1997 consumption levels

HIEA companies have reduced their city water use by more than half compared to 1997. City water use has shown a slight declining trend since 2015 and continues to remain at these lower levels.

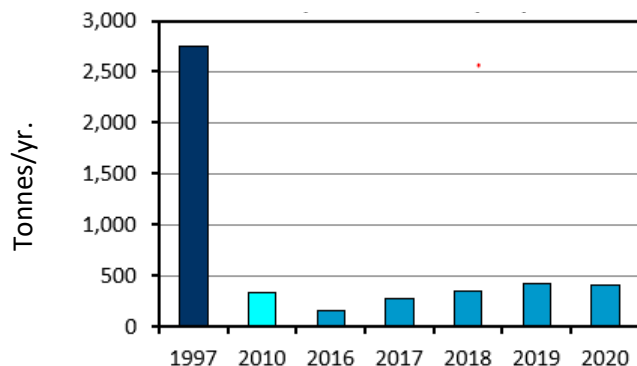


HIEA Commitment to Ongoing Improvement *continued*

Total Suspended Solids (TSS) - 85% lower than in 1997

Overall Total Suspended Solids discharges have been reduced by over 85% since 1997, with 25% of these reduced discharges going to a city wastewater treatment plant for further treatment.

Over the past five years TSS discharges continue to remain stable through the implementation of improved water recycle systems and shutdown of obsolete facilities.

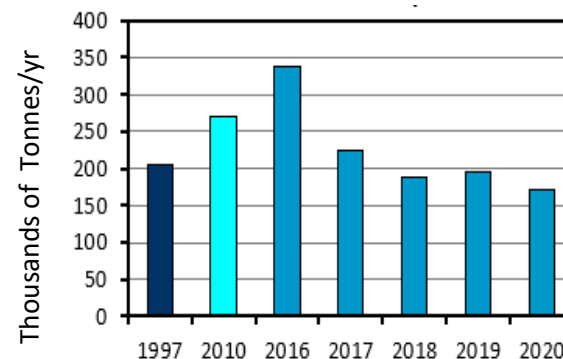


Waste Management and Total Offsite Disposal

Hamilton is an established recycling centre and HIEA companies are major participants. HIEA defines waste as materials going to landfill (paid for removal) while other wastes are sent to a third party for off-site recycling, for reuse, or resale. The definition was reviewed in 2018 and it was determined that materials sent to landfills for a beneficial purpose, such as daily cover, should no longer be reported as waste.

Total off-site disposal levels fluctuate as a result of changes in year to year production, changes in

membership, waste management practices and changes in reporting. The waste disposal trend has however been declining since 2016.



How is Water Used in Ontario?

Water is used for many purposes in Ontario, such as:

- Drinking Water
- Farming
- Wetland Conservation
- Firefighting
- Construction
- Manufacturing
- Mining



What Do Industries Use Water For?

- Cooling
- Transporting a product
- Within the product (i.e. beverages)
- Fabricating
- Processing
- Washing
- Sanitization

How are Water Resources Protected?

To make sure water is safeguarded and shared fairly among all water users, Ontario manages water taken from lakes, rivers, streams, ponds and groundwater through the Ontario Water Resources Act and the Water Taking and Transfer Regulation.

HIEA's 2021 Scholarship Awards

Mohawk College

In 2006 HIEA established their bursary fund at Mohawk College with matching funds from the Ontario Trust for Student Support (OTSS) program. In 2009 HIEA provided additional money and doubled the fund. These funds provide financial support for up to 3 students enrolled in various environmental programs at Mohawk College.

For more information and/or to apply:

For information and/or to apply for the bursaries at Mohawk College please check their website at: www.mohawkcollege.ca or contact: Mohawk Student Awards at The Square - Student Services Room C102 or by calling 905-575-2066.

Please check our website hiea.org to learn about some of our past award winners.

McMaster University

In 2014 HIEA supported the establishment of [The Brian McCarry Graduate Chemistry Scholarship](#) with friends, family, colleagues, and industry partners in memory of Dr. McCarry, the founder and initial chairperson of Clean Air Hamilton.

This scholarship is to be awarded by the School of Graduate Studies to a graduate student currently enrolled in the Chemistry graduate program. Preference will be given to students pursuing industry-related research.

For more information and/or to apply:

For information about the McMaster University award please check the Student Financial Aid and Scholarships Office through the website registrar.mcmaster.ca

Congratulations to the 2021/22 student Recipients



Zakariya Al-Doori

Third year of Energy Systems Engineering Technology

Moussa Kosso

Second Year of Environmental Technician

Seth Breen

Second Year of Chemical Engineering



Dipankar Saha, Ph. D.

from the School of Graduate Studies in the Chemistry program

SEPTEMBER 2022: A student will be awarded the new HIEA Scholarship for the Sustainable Chemistry Program

We are HIEA...

... a non-profit association of local industries working with the community to fulfill HIEA's mandate:

“Care for our environment and improve the quality of life in our communities through sustainable operations, open dialogue with our neighbours, and local partnerships that support environmental education for Hamilton students”.

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Sandra Walsh

Director Quality, Environment & Safety
Triple M Metal LP

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Geoffrey Knapper (April—Dec)

Ed Cocchiarella (Jan—April)

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