

# t r a n s f o r m

## **2012** Annual Report to the Community



**Strathcona  
Industrial  
Association**

# Message from the President of the Board of Directors



Over the course of this past year, the Strathcona Industrial Association (SIA) and its members have been busy working together, and with government and our community to foster a safe and healthy environment for the capital region. We continue to monitor air quality through our ambient air monitoring network, promote risk-based land use planning and engage with our communities.

It has also been a year of transition where we evolved our Community Awareness Emergency Response (CAER) program to a broader scope of stakeholder relations. We will continue to operate by the principles of CAER, but by expanding the scope, it will result in our association's ability to better engage with those around us - from our residential neighbours to other industry neighbours, municipal governments (City of Edmonton and Strathcona County) as well as our provincial and federal governments and other regional organizations that share similar priorities.

We are actively involved at the community level -both as an association and individual member companies-supporting events that benefit our communities and our environment.

These include participating in events such as Get Prepared, Strathcona and River Day where residents have the chance to learn about SIA, what we do and how they can stay connected with us.

Much of the information outlined in this annual report is a summary of our 2012 Annual Ambient Air Monitoring Report that we are required to submit to Alberta Environment and Sustainable Resource Development (ESRD). This data allows us to assess current and historical air quality as well as to watch for trends that may impact residents in proximity to industrial facilities and activities.

Working with the communities in which our members operate in, is an integral part of our values as an organization. We look forward to the coming year where we can continue to not only transform and grow as an association but also assist our members and the community in their own paths of growth and progress-together.

Sincerely,

**John Prusakowski**  
SIA President

## SIA Board of Directors

**Keyera Alberta  
EnviroFuels**  
John Hunszinger

**AltaSteel**  
David Knights

**Capital Power  
Corporation**  
Michael Taylor

**Celanese EVA  
Performance Polymers**  
David Gets

**Edmonton Waste  
Management Centre**  
Jim Schubert

**Enbridge**  
David Verveda

**EPCOR Gold Bar Wastewater  
Treatment Plant**  
Simon Thomas

**Imperial Oil  
Strathcona Refinery**  
Fabio Garagiola

**Kinder Morgan**  
Dan Carter

**Owens Corning**  
Mark Pisani

**Rio Tinto  
Alcan**  
Frederic Picard


**Suncor Energy  
Edmonton  
Refinery**  
John Prusakowski




# Our Members

Committed to safe, environmentally responsible operations.


SIA is comprised of 12 member companies with heavy industrial operations in east Edmonton and west Strathcona County. Together, our members employ over 2,500 people. They provide products and services that we use every day, such as fuel products, electricity, plastics, recycled steel, home insulation as well as waste management and wastewater treatment services.



**Keyera** Alberta EnviroFuels is the largest iso-octane manufacturing facility in the world. The facility produces enough product to fuel approximately 45,000 vehicles per day.  
[keyera.com](http://keyera.com)




**AltaSteel** AltaSteel is a scrap-based melting and casting mini-mill operation and has a production capability of over 350,000 tonnes of steel billets annually.  
[altasteel.com](http://altasteel.com)




**Capital Power** Capital Power develops, acquires, operates and optimizes power generation from a variety of energy sources, such as natural gas, wind, solar, coal and biomass. Capital Power owns more than 3,600 megawatts of power generation capacity at 15 facilities across North America.  
[capitalpower.com](http://capitalpower.com)




**Celanese** Celanese is a leading North American manufacturer of a full range of EVA copolymers.  
[celanese.com](http://celanese.com)




**City of Edmonton** The Edmonton Waste Management Centre (EWMC) is North America's largest collection of modern, sustainable waste processing and research facilities.  
[edmonton.ca/ewmc](http://edmonton.ca/ewmc)



**Enbridge** As a transporter of energy, Enbridge operates, in Canada and the U.S., the world's longest crude oil and liquids transportation system and is proud to be recognized as one of the Global 100 Most Sustainable Corporations in the World. Enbridge employs more than 10,000 people and is ranked one of Canada's Greenest Employers and one of Canada's Top 100 Employers for 2013.  
[enbridge.com](http://enbridge.com)




**EPCOR** Gold Bar opened in 1956, and through continual upgrades, it remains at the forefront of wastewater treatment technology, and is considered one of the most innovative wastewater treatment operations in North America.  
[epcor.com](http://epcor.com)




**Imperial Oil** Imperial's Strathcona refinery produces a wide range of petroleum products, including gasoline, aviation fuel, diesel, lubricating oils, petroleum waxes, heavy fuel oil and asphalts and is the only producer of lubricating base oil and waxes in Western Canada.  
[imperialoil.ca](http://imperialoil.ca)




**Kinder Morgan** Kinder Morgan is the largest midstream and the third largest energy company in North America. It owns an interest in or operates approximately 73,000 miles of pipelines and 180 terminals transporting an array of materials including natural gas, refined petroleum products, crude oil, carbon dioxide (CO<sub>2</sub>) and more.  
[kindermorgan.com](http://kindermorgan.com)



**Owens Corning** Owens Corning is global leader in residential, commercial and industrial building materials ranging from insulation to roofing. It invented fiberglass and fiberglass insulation over 70 years ago, and is best known for its PINK™ insulation products.  
[owenscorning.ca](http://owenscorning.ca)



**Rio Tinto Alcan** Rio Tinto Alcan is a global supplier of high quality bauxite, alumina and aluminum.  
[riotintoalcan.com](http://riotintoalcan.com)



**Suncor Energy** Suncor Energy's refining and marketing operations provide a vital link between our large Canadian resource base and the growing North American energy market. Suncor Edmonton's 140,000-barrel-per-day refinery runs entirely on oil sands-based feedstocks and produces a high yield of light oils.  
[suncor.com](http://suncor.com)

# Industry Development

- The Enbridge Edmonton Terminal Expansion (ETE) Project, which will provide more than one million barrels of capacity, was completed in November.
- Kinder Morgan announced plans to increase capacity at its Trans Mountain Edmonton terminal, which will involve the construction of 10 additional tanks and related facility infrastructure – bringing the terminal total storage capacity to 6.2 million barrels. Construction began in May with the tanks expected to be in service by the end of 2013.

## Greening Our Region

**AltaSteel** Known as one of the largest recyclers in Alberta recycling over 300,000 tonnes of scrap steel annually and manufacturing products made from 100 per cent recycled scrap steel. The "Switch Out" program, which they co-fund, also recovers mercury switches from end-of-life vehicles and has collected over 400,000 mercury switches since 2008.

**Capital Power** Their Clover Bar Landfill Gas facility uses landfill gas from the City of Edmonton's Waste Management Centre, and is the only one in Alberta generating renewable energy with it. It produces 4.8 MW of renewable energy – enough to power approximately 4,600 homes. The facility is also an important source of registered and retired offsets in Alberta.

**Edmonton Waste Management Centre** This is the largest collection of modern, sustainable waste processing and research facilities in North America and the first of its kind. It includes the Greys Paper and Glass Recycling Facility – completed in 2012 – that involves closed-loop recycling by processing the waste paper collected from City of Edmonton offices and selling the recycled paper products back to the City. The facility will have the capacity to process 40 metric tonnes per day (14,400 m. tonnes/yr).

**Enbridge** As part of the company's Neutral Footprint commitments, Enbridge has pledged to stabilize its environmental footprint to January 2009 levels by planting a tree for every tree it removes to build new facilities, conserving an acre of land for every acre of wilderness it permanently impacts, and generating a kilowatt hour of renewable energy for every kilowatt hour its operations consume. Enbridge has met its "Kilowatt" commitment, in part, through its investments in wind and solar energy projects, making it Canada's largest solar – and second largest wind – energy generator.

**EPCOR** Biosolids, a by-product from the process of treating municipal wastewater, is beautifying local communities. A made-in-Canada technology pioneered at the Gold Bar Wastewater Treatment Plant takes this by-product – which has significant concentrations of nitrogen, phosphorus and other elements essential for plant growth – and turns it into fertilizer for qualifying local farmland through Edmonton's NutriGold program. Biosolids are also used in the production of various compost products at The City of Edmonton's composter.

**Keyera** The Alberta EnviroFuels (AEF) facility

produces iso-octane (has lower vapor pressure, high octane value and hardly any sulphur content) for blending into gasoline to reduce emissions from the combustion process and lower the likelihood of evaporation when handling fuel. It is the largest iso-octane manufacturing facility in the world – producing 13,600 barrels per day.

**Kinder Morgan** Developed a Weed Management Plan for preventing the spread of weeds (non-native species) and control weeds. This is based on an integrated approach, as an alternative to the "blanket spraying" of the past, where herbicides (under the Pest Control Products Act) with low persistence levels and low mobility are used selectively to limit use in conjunction with mechanical techniques and seeding disturbed areas with native seed mix.

**Suncor** Suncor supplies its Edmonton refinery with treated and recycled municipal wastewater for its manufacturing operations, which has significantly reduced the amount of fresh water withdrawn from the North Saskatchewan River. Since 2005, Suncor has been using a 5.5 kilometre water pipeline to carry filtered water from EPCOR's Gold Bar Wastewater Treatment Plant for this purpose.





# Capital Region Initiatives

SIA participates in a number of important regional and provincial initiatives to ensure effective two-way engagement between industry and our stakeholders.

## Alberta Capital Airshed (ACA)

ACA is a not-for-profit, multi-stakeholder organization that monitors air quality, facilitates multi-stakeholder approaches to addressing issues and supports air quality education within the greater Edmonton area including SIA's air quality monitoring network.

## Alberta Environment and Sustainable Resource Development's Capital Region Air Quality Management Framework Implementation Oversight Advisory Committee

As a committee member, SIA provides input and feedback to this important framework.

## Our Region Our Future (OROF)

SIA is a partner of OROF, an initiative that brings together industry, municipalities, environmental non-government organizations and government to collaborate on capital regional solutions for the environmental management of air, water and land.

## Integrated Transportation Master Plan with Strathcona County

SIA participated in the stakeholder consultation process led by Strathcona County on the development of its Integrated Transportation Master Plan. This plan establishes a vision and direction that will guide policy and decision-making related to the County's transportation network over the next 30+ years.

## Strathcona District Mutual Assistance Program (SDMAP)

SDMAP is a partnership of more than 30 industrial companies - several of which are SIA members - and community agencies dedicated to emergency response planning in east Edmonton and Strathcona County.

## Water Management Framework for the Industrial Heartland and Capital Region

SIA is an active member of the multi-stakeholder Water Steering Committee established to guide the implementation of this framework. This framework presents a collaborative, cumulative effects management approach to protect the reach of the North Saskatchewan River, from Devon to Pakan, which is directly impacted by municipal and industrial effluent discharge.



## Shelter-in-Place

Our members take the utmost care to ensure the safety of their employees and everyone in the community. Despite a very low chance of anything serious ever occurring, all industrial processes have some risks. It is important that communities understand the commonly-used procedures for Shelter-in-Place.

In case of a major incident with airborne release of a hazardous substance:

- Go inside.
- Close all doors, windows and openings (ex. doors).
- Shut off ventilation systems that exhaust to the outside or draw outdoor air inside (fans, air conditioning units, clothes dryers, turn down furnace and close fireplace dampers).
  - Listen to radio or TV for further instructions. Keep phone lines free.
  - If odour is strong, seal an inside room with wet towels at the base of the door. Breathe through a damp towel to filter air.

911 should be called only in case of emergencies.

## Our Commitment to the Community

SIA and its members are committed community partners. Highlighted below are some of the ways we have demonstrated that commitment this year—to support our community, foster dialogue with residents and stakeholders and make a difference.

## River Day

SIA participated in the City of Edmonton's 15th annual River Day celebration on June 9. SIA hosted the annual pancake breakfast. Members of SIA met with participants and answered questions about industry in the region.

## Get Prepared, Strathcona!

On April 22, the Get Prepared, Strathcona! event took place in Sherwood Park where community members were informed of how Strathcona County and its partners, such as SIA, are prepared to handle disasters. Attendees were also educated about what they can do to prepare their families in case of an emergency.

## CAER Fair

SIA hosted a CAER fair on April 28 at Capilano Mall in southeast Edmonton. Over 400 people attended, and participated in a variety of activities including visiting information displays to learn about air quality.

## United Way's Day of Caring events

Many of our member companies participate in the United Way's Day of Caring events in which they helped local social welfare agencies in their communities. Some of these agencies included Edmonton Food Bank, Hope Mission, the Mustard Seed Homeless Connect Edmonton and KARA Family Resource Centre.

## Curious about non-routine industry activity?

 **UPDATEline 1.866.653.9959**

SIA members use the UPDATEline to post information messages regarding non-routine activities on their sites that the public may be curious about, such as prolonged flaring, noise, odour, training exercises and incident details.

# Air Quality Monitoring Network

SIA operates one of the first air quality monitoring networks in Alberta. The following is a summary of our Annual Ambient Air Monitoring Report that we are required to submit to the Alberta Environment and Sustainable Resource Development.

### 2012 Highlights

- Annual average concentrations of all parameters by the SIA network in 2012 were well below Alberta Ambient Air Quality Objectives (Alberta objectives).
- There were seven occurrences above the 1-hour Alberta objectives for hydrogen sulphide (H<sub>2</sub>S) as well as one exceedance event for 24-hour H<sub>2</sub>S. These exceedances were recorded at the Beverly and Gold Bar stations.
- There was one exceedance for 24-hour PM<sub>2.5</sub> at each of the three sampling stations on July 14, 2012, which were primarily due to wildlife smoke originating in northern Alberta. Alberta Environment and Sustainable Resource Development (ESRD) reference numbers were obtained in all cases.

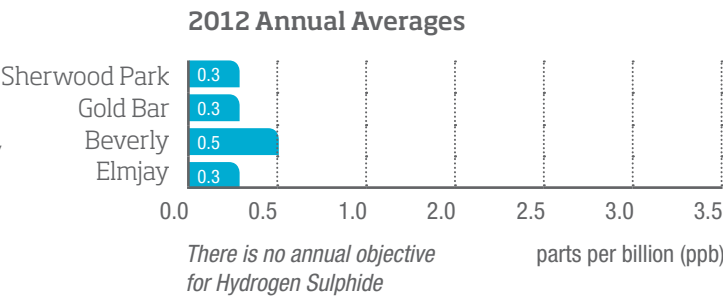
### Five-Year History Total Occurrences Above Ambient Air Quality Objectives

Number of exceedance events for the years from 2008 to 2012

Parameter	Number of Stations	Average Type	AAAQO	Number of Exceedance Events				
				2012	2011	2010	2009	2008
SO <sub>2</sub>	4	1-hour	172 ppb	0	0	0	0	0
		24-hour	48 ppb	0	0	0	0	0
		Annual	8 ppb	0	0	0	0	0
NO <sub>2</sub>	2	1-hour	159 ppb	0	0	0	0	0
		Annual	24 ppb	0	0	0	0	0
H <sub>2</sub> S	4	1-hour	10 ppb	7	14	1	2	6
		24-hour	3 ppb	1	1	0	0	1
PM <sub>2.5</sub>	3	24-hour	30 µg/m <sup>3</sup>	3	0	2	3	0
Passive SO <sub>2</sub>	6	30-day	11 ppb	0	0	0	0	0

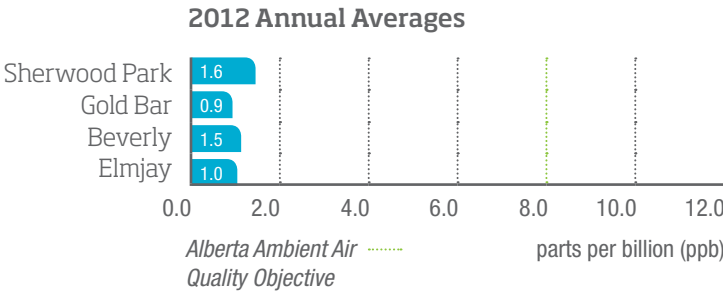
### Hydrogen Sulphide (H<sub>2</sub>S)

Hydrogen Sulphide is a colourless, flammable gas that is extremely hazardous and toxic. It has a distinct rotten egg odour, and can be identified at relatively low concentrations by people. The gas commonly exists in places such as sewers, sewage treatment plants and manure stockpiles. Industrial sources include petroleum and natural gas extraction and refining, pulp and paper manufacturing, chemical manufacturing and waste disposal. The Sherwood Park, Elmjay, Beverly and Gold Bar stations measure H<sub>2</sub>S.



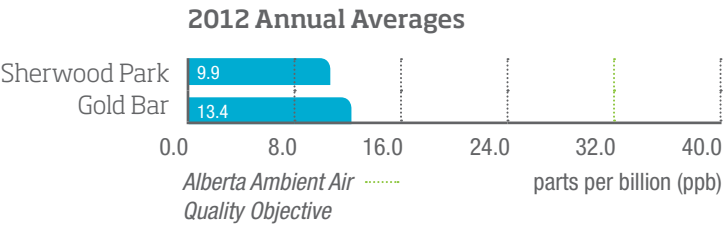
### Sulphur Dioxide (SO<sub>2</sub>)

Sulphur Dioxide is a colourless, non-flammable gas with a pungent odour. Industrial sources include sulphur extraction plants, natural gas processing plants, oil sands operations, power plants, oil refineries, pulp and paper mills and fertilizer plants. The Sherwood Park, Elmjay, Beverly and Gold Bar stations measure SO<sub>2</sub>.



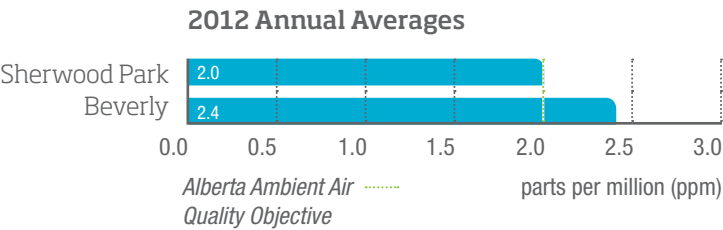
### Nitrogen Dioxide (NO<sub>2</sub>)

Nitrogen Dioxide is a reddish orange-brown gas with a strong, irritating odour. It is corrosive, highly oxidizing and non-combustible. Man-made sources include motor vehicles, oil and gas industries and power generation plants as well as combustion from forest fires and home heating. The Sherwood Park and Gold Bar stations measure NO<sub>2</sub>.



### Total Hydrocarbons (THC)

Total Hydrocarbons refer to a broad range of chemicals containing carbon and hydrogen atoms, including methane, propane, benzenes and many other compounds. Sources include motor vehicles, petroleum refineries, petrochemical plants, combustion as well as smaller sources like dry cleaning facilities, solvent handling and gas tanks. The Sherwood Park and Beverly stations measure THC.

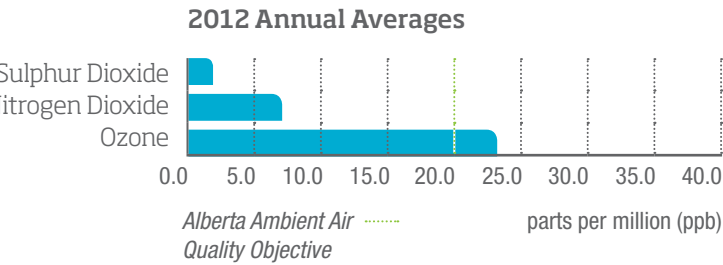


### Ozone (O<sub>3</sub>)

Ozone occurs naturally in the upper atmosphere (stratosphere) and protects us from harmful ultraviolet radiation. However, ozone in the lower atmosphere (troposphere) acts as a strong oxidant, and is a key component of smog. According to the results from 30-day passive monitoring of passive ozone samples, measurements ranged between 13 and 39 ppb, with ozone concentration tending to be higher during the spring months.

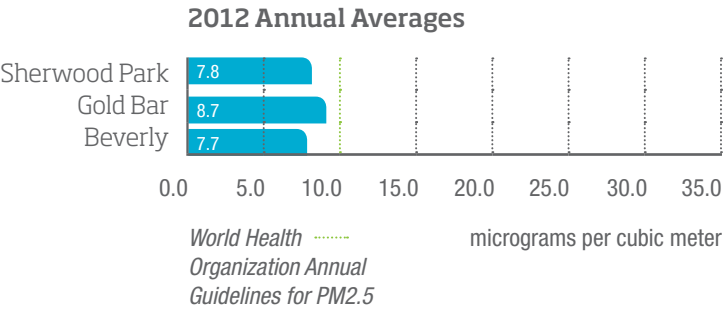
**Passive Monitoring: Sulphur Dioxide, Nitrogen Dioxide and Ozone**

Passive sampling is conducted at six locations around the SIA region for three parameters: SO<sub>2</sub>, NO<sub>2</sub> and O<sub>3</sub>. This sampling technique uses a device placed in the ambient air for a one-month period, with the samples used to determine potential trends in areas where continuous sampling is unavailable.



### Particulate Matter (PM<sub>2.5</sub>)

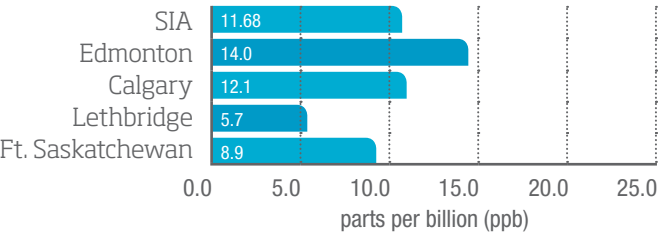
PM<sub>2.5</sub> includes particles with diameters less than or equal to 2.5 microns, which at this size can penetrate lungs and are referred to as respirable. Sources include soil, road and agricultural dust, smoke, forest fires, traffic emissions and industrial activity. The Sherwood Park, Gold Bar and Beverly stations measure PM<sub>2.5</sub>.



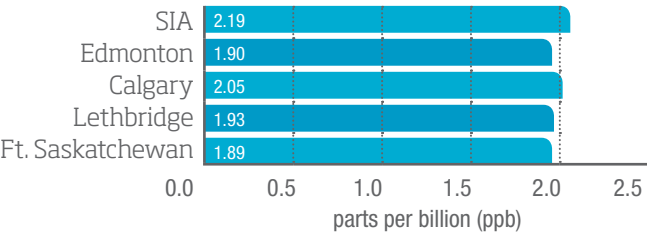


Provincial Comparisons 2012 Source Clean Air Strategic Alliance (CASA)

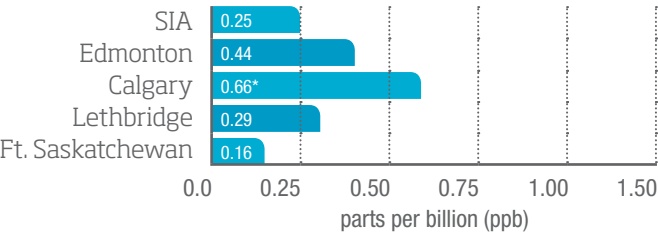
Nitrogen Dioxide (NO<sub>2</sub>) 2012 Annual Averages



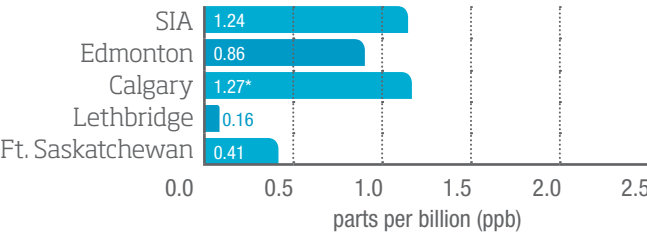
Total Hydrocarbons (THC) 2012 Annual Averages



Hydrogen Sulphide (H<sub>2</sub>S) 2012 Annual Averages

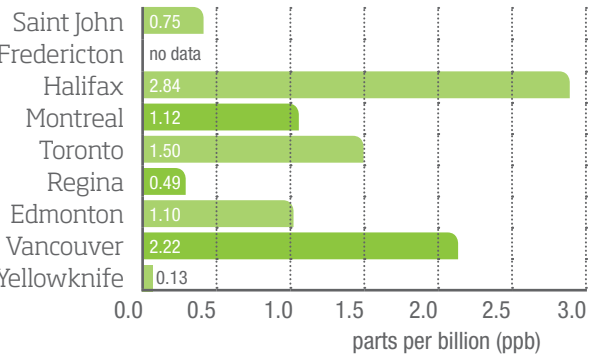


Sulphur Dioxide (SO<sub>2</sub>) 2012 Annual Averages

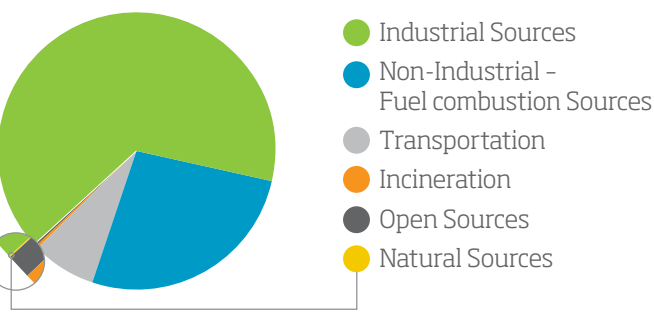


National Comparisons 2012 Source: NAPS Database (Environment Canada)

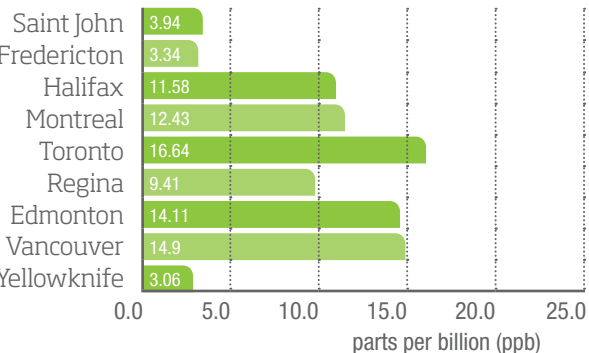
Sulphur Dioxide (SO<sub>2</sub>) 2012 Annual Averages



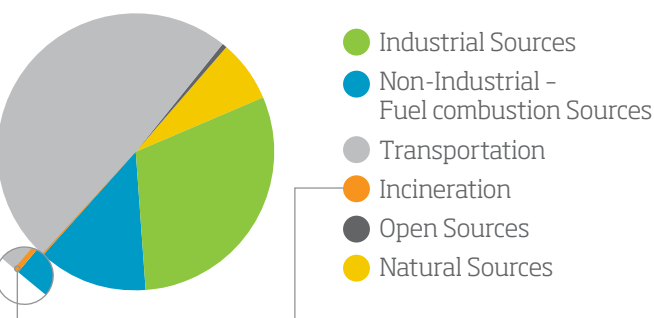
2012 Emission Summary



Nitrogen Dioxide (NO<sub>2</sub>) 2012 Annual Averages



2012 Emission Summary



\*Calgary does not have 2012 H<sub>2</sub>S and SO<sub>2</sub> data in CASA. Values cited are 2011 annual averages.

Air Quality Monitoring Network



# Learn more about air quality and monitoring in our region:

Alberta Environment and  
Sustainable Resource  
Development (ESRD)  
**[environment.alberta.ca](http://environment.alberta.ca)**

Alberta Capital Airshed  
**[capitalairshed.ca](http://capitalairshed.ca)**

Clean Air  
Strategic Alliance (CASA)  
**[www.casahome.org](http://www.casahome.org)**

Environment Canada  
**[ec.gc.ca/rnspe-naps](http://ec.gc.ca/rnspe-naps)**



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