

URL: <https://www.ontario.ca/page/ministers-report-toxics-reduction-2015>



Minister's Report on Toxics Reduction 2015

The Minister's Report on Toxics Reduction 2015, highlights Ontario's progress in reducing toxic substances in our air, land and water from 2013 to 2015.

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Minister's message

As the Minister of the Environment and Climate Change, I am pleased to present our third annual report on toxics reduction.

Our government is committed to protecting people's health and the environment by reducing toxics in our air, land and water. And we are making progress.

Through our toxics reduction strategy we are promoting the reduction in the use and creation of toxic substances, reducing smog-causing emissions from vehicles and implementing stricter air and water standards. Ontario's actions to close coal fired electricity plants, curb the use of cosmetic pesticides and protect 1.8 million acres of land have resulted in fewer smog days and cleaner water. We have demonstrated leadership by enacting legislation to end coal fire power generation and protect our Great Lakes from harmful pollutants. We have introduced cap and trade and waste legislation to reduce the emission of harmful greenhouse gas and toxic pollutants.

Together these actions are helping us achieve the goal of the *Toxics Reduction Act*: protecting the environment and the health of people in Ontario

Ontarians want healthy communities. They also want a strong economy. Through our *Toxics Reduction Act*, we have found a way to deliver on both.

To help protect Ontarians and the environment, facilities are required to evaluate, track and develop a plan to reduce their use and creation of toxic substances and make this information publicly available. To help Ontarians make informed choices about the companies in their communities, we provide updated information on industries' use and creation of toxics through our [interactive map \(http://www.ontario.ca/environment-and-energy/map-toxics-reduction\)](http://www.ontario.ca/environment-and-energy/map-toxics-reduction) and [Open Data catalogue \(http://www.ontario.ca/data/toxics-reduction\)](http://www.ontario.ca/data/toxics-reduction).

We implemented these requirements over time to allow business to adapt and have supported business with training and guidance materials through the transformation. And we have seen positive results. Facilities have reported on toxics, developed action plans and made this information available.

Recognizing that reducing toxics makes good business sense; about 40 per cent of regulated facilities intend to implement at least one reduction option. The ministry's annual toxics report includes analysis of facilities that intend to implement toxics reduction plans..

We all need to do our part to protect Ontarians and the environment from the harmful effects of toxic substances. I encourage people to find and support Ontario companies reducing the use and creation of toxic pollutants and encourage others to follow suit. I look forward to continuing to engage with industry and the public on ways for Ontario to achieve this goal.

Glen R. Murray

Minister of the Environment and Climate Change

What's new/achievements

The Minister's third annual report on toxics reduction demonstrates Ontario's progress in implementing the toxics reduction program and the amount of toxic substances Ontario facilities used and created in 2013 and 2014. The report also includes other initiatives, up to 2015, that contribute to reducing toxic substances in our air, land and water like:

- setting strong air and water standards
- protecting and restoring the Great Lakes
- strengthening pollinator health.

Since our last annual report Ontario has taken a range of progressive steps that are helping reduce substances in our air, land and water. These initiatives all work together to protect Ontarians and the environment from the harmful effects of toxic substances.

Informing Ontarians

One of the key goals of the *Toxics Reduction Act* is to inform Ontarians about toxic substances used and created in the province. This goal aligns with Ontario's commitment to an open and transparent government. To meet this goal Ontario continues to post updated data on Ontario's [Open Data Catalogue](http://www.ontario.ca/data/toxics-reduction) (<http://www.ontario.ca/data/toxics-reduction>). Summaries of reports by regulated facilities are also available on the province's [Toxics Environment Map](http://www.ontario.ca/environment-and-energy/map-toxics-reduction) (<http://www.ontario.ca/environment-and-energy/map-toxics-reduction>). Ontarians can search by geographic location, company name, toxic substance or manufacturing sector to identify regulated facilities in their communities.

Types of information

Ontario's online annual report data includes most of the information submitted by regulated facilities, including: company name, address, sector and National Pollutant Release Inventory (NPRI (National Pollutant Release Inventory)) identification number and the toxic substances used, created and released at the facility. Plan

summaries, which are a snapshot of a facility's toxic substance reduction plan, are also posted online. The plan summaries include any option that will be implemented to reduce toxics use or creation and estimated reductions, or reasons that an option may not be implemented at this time.

The data analysis originates from annual reports of toxic substances used, created and contained in product from 2011 to 2014; and plan summaries for the years 2011 to 2013 (all data received as of September 17th, 2015).

Chemicals linked to cancer

Some of the toxic substances regulated under the act are identified as known or probable carcinogens (chemicals linked with cancer) by leading cancer agencies like the International Agency for Research on Cancer. This report provides an analysis on the number of facilities intending to implement an option to reduce chemicals linked with cancer.

Living List

The Living List is the list of toxic substances under the *Toxics Reduction Act* that subject facilities have to report and plan on. It is called the Living List because it can change over time as the province is required to review the list for possible changes every five years.

In October 2015, Ontario launched the Living List (<http://www.ontario.ca/page/living-list>) process, which is the mechanism by which the ministry will consider possible changes to the list of substances. Under this process, the province is accepting nominations (<http://www.forms.ssb.gov.on.ca/mbs/ssb/forms/ssbforms.nsf/FormDetail?OpenForm&ACT=RDR&TAB=PROFILE&SRCH=&ENV=WWE&TIT=2107&NO=012-2107E>) for potential changes to the list of substances regulated under the act. Anyone can make a nomination to make a change to the list. The province may also make its own nominations. Ontario will consider each nomination according to criteria detailed in the nomination guide and decide if a substance will be reviewed.

Developed in collaboration with a multi-stakeholder group, the Living List Framework (http://www.downloads.ene.gov.on.ca/envision/env_reg/er/documents/2014/012-0764.pdf) describes how proposals will be reviewed to make final decisions on nominations. For more details on the process see the Living List (<http://www.ontario.ca/page/living-list>) webpage and Nomination Guide (<http://www.ontario.ca/page/living-list-nomination-guide>).

Licensed toxic substance reduction planners

Under the act, facilities are required to create a toxics reduction plan for each toxic substance used or created in their processes. These toxics reduction plans must be certified by a licensed toxic substance reduction planner.

In 2014, 15 Ontarians completed the training and licensing process, bringing the total number of certified planners in Ontario (<http://www.ontario.ca/data/licensed-toxics-planners>) to 295. The next training session will be held in 2016.

Visit Toxics Substance Reduction Planner Licensing (<http://www.ontario.ca/page/toxic-substance-reduction-planner-licence>) for more information.

Continuing education

Ontario hosted a workshop for licensed toxics reduction planners in March 2014. Over 100 planners attended, receiving five hours of professional development credits for the session. The agenda included updates from the Ministry of the Environment and Climate Change, planner case studies and presentations by the Green Chemistry Chairs outlining achievements and opportunities for collaboration.

Certified planners must complete continuing education requirements to ensure they stay current and learn about new ways to maximize toxics reduction.

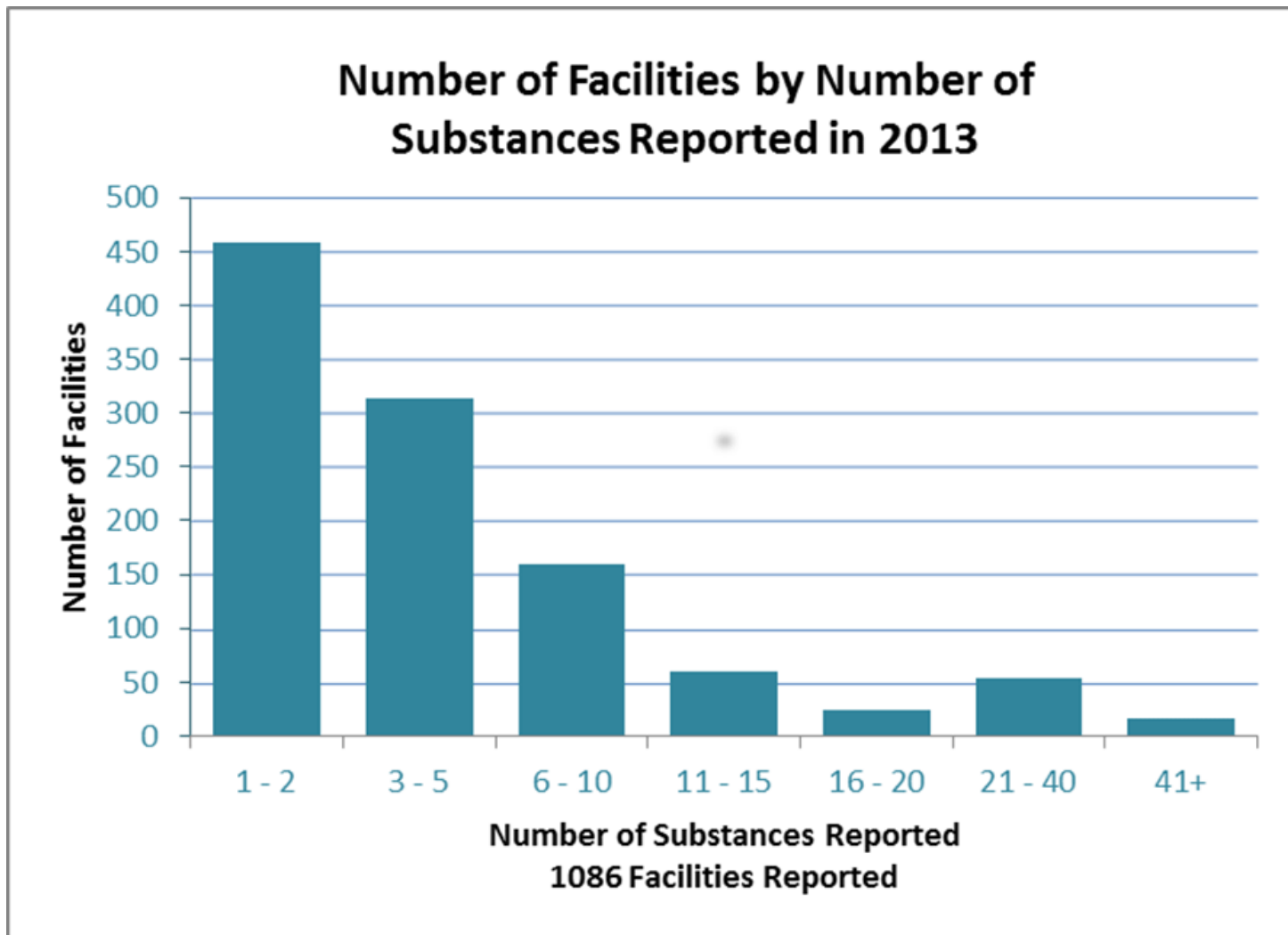
Facility reports

Toxics reduction reports are prepared and submitted annually by regulated facilities for the previous calendar year. The reports track year-over-year toxics use and creation and progress made on implementing toxic substance reduction plans. The reports include information on the annual quantities of toxic substances used, created, contained in product and released to the environment. Facilities are obligated to submit reports on a per substance basis to the province and make them publically available on the Internet.

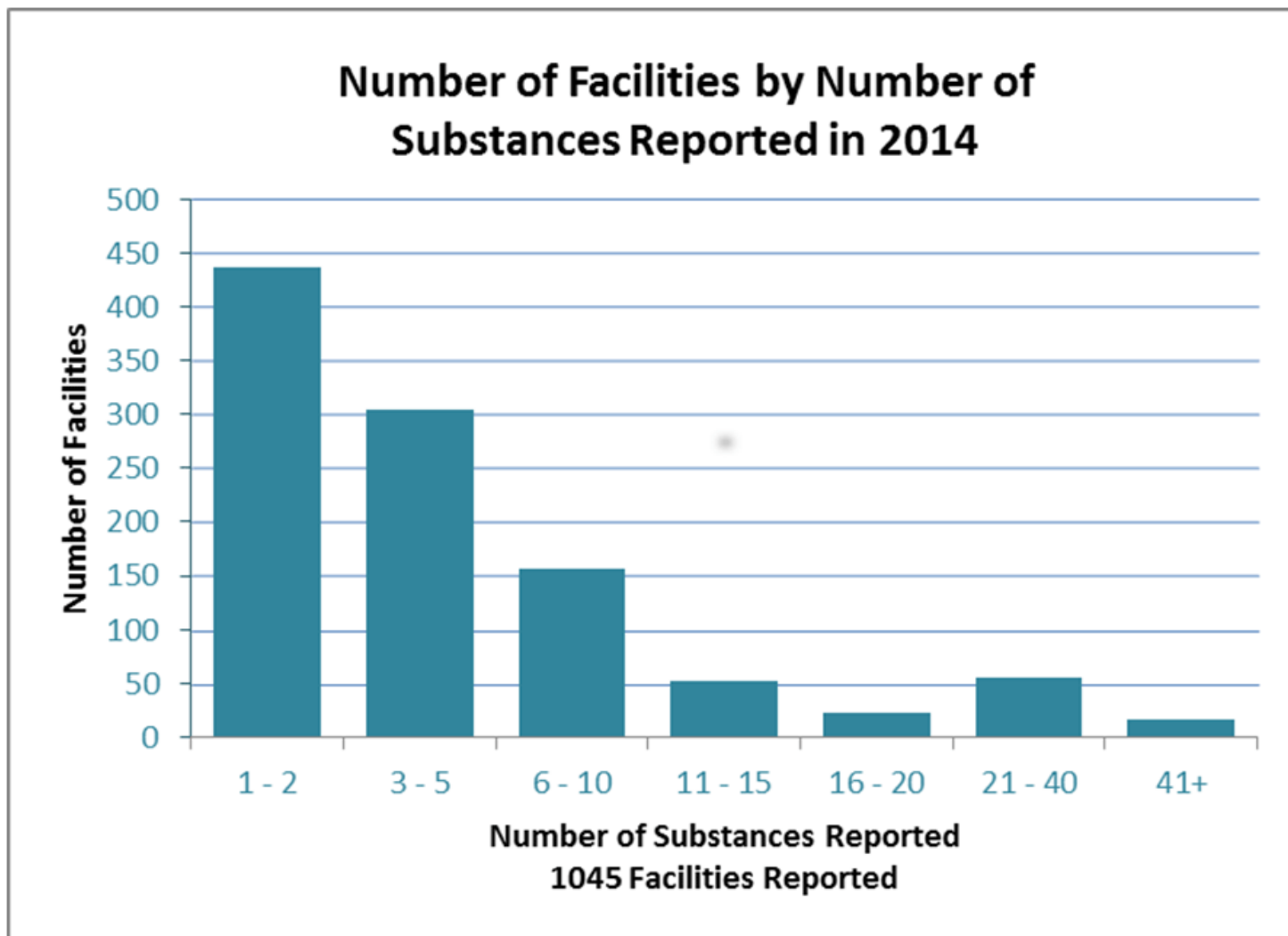
As in previous years, the majority of facilities reporting in 2013 and 2014 were categorized as small or medium sized (500 employees or less).

Over 1000 facilities have submitted reports over the last two years: 1086 facilities reported for 2013 and 1045 facilities have submitted reports for 2014. The graphs below illustrate that the average number of substances reported per facility has also remained steady, at around 6, in 2013 and 2014. Over half of the facilities only report between 1 and 5 substances, and a very small amount report over 40.

Number of facilities by number of substances reported in 2013.

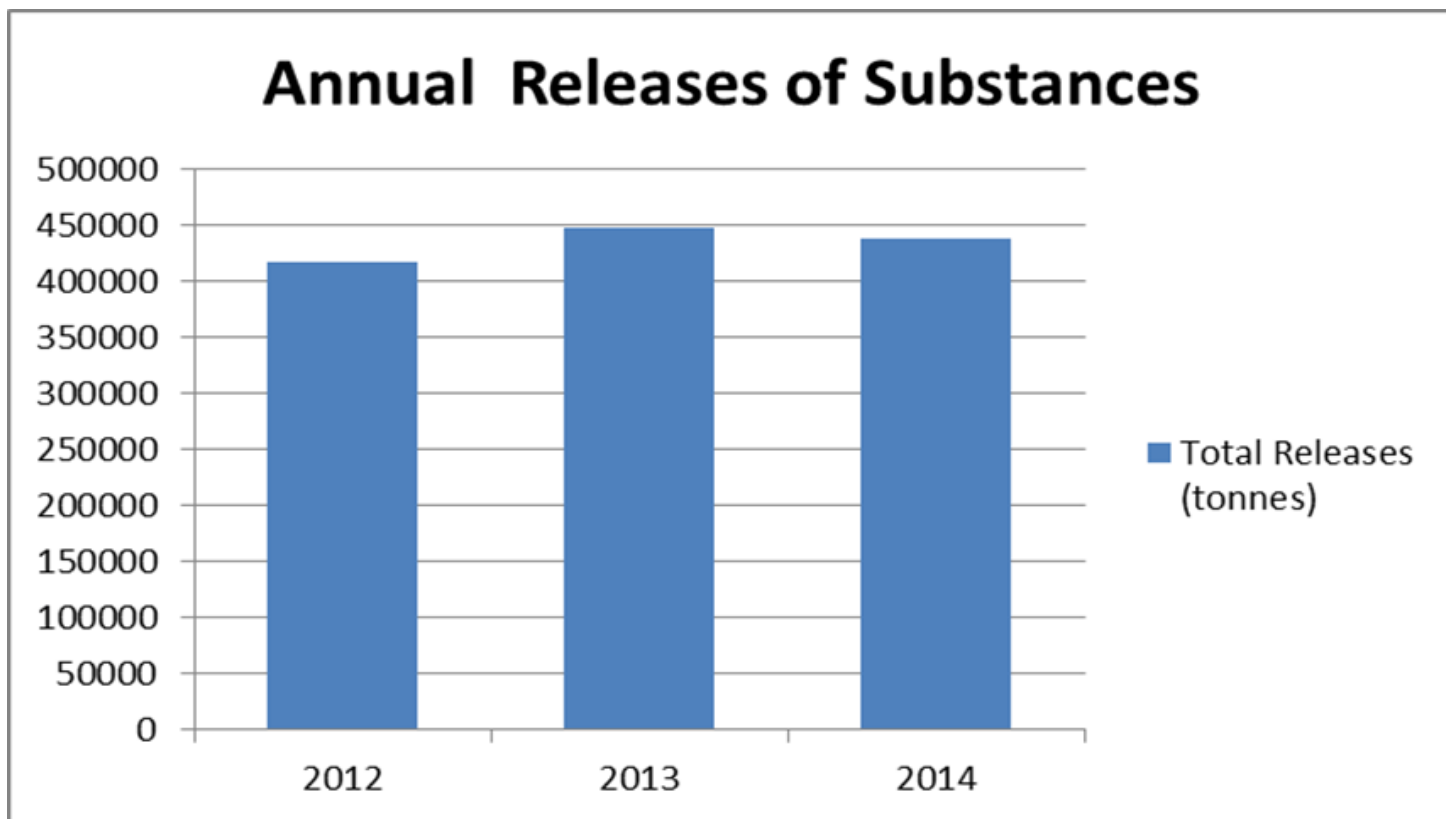


Number of facilities by number of substances reported in 2014.



The graph below on Annual Releases of Substances per year shows the annual releases of toxics substances to air, water and land. Changes in annual releases can be due to a number of variables, including variations in production as a result of changing economic conditions, and factors such as weather conditions or equipment issues that can effect measurements.

Annual releases of substances



The tables below outline the top 10 substances used and created in 2013 and 2014. For both years, the most used substances are volatile organic compounds and two metals, copper and nickel. The top substances created in 2013 and 2014 include carbon monoxide, sulphuric acid, particulate matter, ammonia and volatile organic compounds.

Substance	Tonnes
Speciated VOC (Volatile Organic Compound) - Pentane (all isomers)	944662
Speciated VOC (Volatile Organic Compound) – Propane	805990
Ethylene (VOC (Volatile Organic Compound))	779296
Speciated VOC (Volatile Organic Compound) - Butane (all isomers)	762383
Speciated VOC (Volatile Organic Compound) - Butene (all isomers)	572522
Speciated VOC (Volatile Organic Compound) – Hexane	507940
Benzene (VOC (Volatile Organic Compound))	503921
Nickel (and its compounds)	476610
Copper (and its compounds)	465558
n-Hexane (VOC (Volatile Organic Compound))	390544

Top 10 substances used in Ontario 2013

Substance	Tonnes
Vinyl acetate (VOC (Volatile Organic Compound))	5440254

Speciated VOC (Volatile Organic Compound) - Butane (all isomers)	940863
Speciated VOC (Volatile Organic Compound) - Pentane (all isomers)	918239
Ethylene (VOC (Volatile Organic Compound))	752550
Speciated VOC (Volatile Organic Compound) - Hexane	551096
Speciated VOC (Volatile Organic Compound) - Butene (all isomers)	543544
Benzene (VOC (Volatile Organic Compound))	504227
Copper (and its compounds)	484105
Nickel (and its compounds)	450623
Speciated VOC (Volatile Organic Compound) - Propane	447739

Top 10 substances used in Ontario 2014

Substance	Tonnes
Carbon monoxide	8904847
Sulphuric acid	1070518
Ethylene (VOC (Volatile Organic Compound))	1056378
Sulphur dioxide	751696
Total Particulate Matter	711293
Toluene (VOC (Volatile Organic Compound))	582068
Xylene (all isomers)(VOC (Volatile Organic Compound))	578267
Speciated VOC (Volatile Organic Compound) - Octane (all isomers)	528808
Ethylbenzene (VOC (Volatile Organic Compound))	495181
Ammonia (total)	449011

Top 10 substances created in Ontario 2013

Substance	Tonnes
Carbon monoxide	18161808
Ethylene (VOC (Volatile Organic Compound))	1036283
Sulphuric acid	953519
Total Particulate Matter	706810
Sulphur dioxide	703789
Toluene (VOC (Volatile Organic Compound))	563461
Xylene (all isomers) (VOC (Volatile Organic Compound))	560169
Speciated VOC (Volatile Organic Compound) - Butane (all isomers)	485800
Ammonia (total)	478780

Speciated VOC (Volatile Organic Compound) - Octane (all isomers)

474188

Top 10 substances created in Ontario 2014

Facility plan summaries

Under the *Toxics Reduction Act*, a facility must develop a toxic substance reduction plan that identifies and assesses options to reduce the use and creation of these substances. Implementation of the plan is voluntary to allow each facility an opportunity to move forward at a rate that best reflects its unique economic and operational circumstances. While implementation of the plan is not mandatory, a facility may realize economic, environmental and social benefits through toxic substance reduction.

A plan summary is a subset of a toxics reduction plan that must be submitted to the Ministry of the Environment and Climate Change and made public on the Internet. It is a valuable way to communicate with Ontarians. It tells the public:

- why the prescribed toxic substance is used or created
- about the facility's intent to reduce the use and creation of the toxic substance
- how reductions will be achieved or reasons they may not be implementing a reduction option.

This report covers plan summaries received between 2011 and 2013. Because of a phased approach for the list of substances requiring a plan summary, in 2011 there were only 680 facilities that submitted a plan summary for at least one substance.

As of September 16, 2015 there are over 1000 facilities that have submitted a plan summary. These facilities represent a wide range of sectors from chemical manufacturing to textiles to wood product manufacturing. Of the facilities that submitted a plan summary between 2011 and 2013, close to 40 per cent intend to implement at least one option for reducing at least one substance at their facility. The top three toxics reduction categories that facilities referenced in their plans were:

- equipment or process modification
- good operator practice or training
- spill or leak prevention.

Number and percent of facilities that intend to implement an option by subsector for 2011-2013.

3 Digit NAICS (North American Industry Classification System) Code	Sector Description	Number of Implementers*	Total Number Of Facilities That Submitted a Plan Summary in that Sector	Percent of Facilities in each sector that are Implementers
212	Mining and quarrying (except oil and gas)	6	22	27.3%
311	Food manufacturing	21	108	19.4%
312	Beverage and tobacco product manufacturing	3	9	33.3%
313	Textile mills	5	6	83.3%
314	Textile product mills	0	1	0.0%

321	Wood product manufacturing	16	31	51.6%
322	Paper manufacturing	14	28	50.0%
323	Printing and related support activities	19	32	59.4%
324	Petroleum and coal product manufacturing	7	22	31.8%
325	Chemical manufacturing	78	165	47.3%
326	Plastics and rubber products manufacturing	42	102	41.2%
327	Non-metallic mineral product manufacturing	13	78	16.7%
331	Primary metal manufacturing	40	106	37.7%
332	Fabricated metal product manufacturing	62	135	45.9%
333	Machinery manufacturing	8	25	32.0%
334	Computer and electronic product manufacturing	12	18	66.7%
335	Electrical equipment, appliance and component manufacturing	10	25	40.0%
336	Transportation equipment manufacturing	52	153	34.0%
337	Furniture and related product manufacturing	21	37	56.8%
339	Miscellaneous manufacturing	10	27	37.0%
	Total	439	1130	38.85%

* Number of Implementers: number of facilities that have reported they are implementing an option for at least one substance in a plan summary submitted between 2011 and 2013.

Number of facilities that intend to implement an option for the most often reported substances for 2011, 2012 and 2013.

Substance	Number of Implementers*	Number of facilities that have submitted a plan summary	Percent of Implementers
Toluene	67	159	42.14%

Xylene (all isomers)	65	155	41.94%
Methanol	62	160	38.75%
PM10 (Particulate Matter less than or equal to 10 microns) - Particulate Matter <= 10 Microns	62	419	14.80%
PM2.5 (Particulate Matter less than or equal to 2.5 microns) - Particulate Matter <= 2.5 Microns	61	407	14.99%
Copper (and its compounds)	57	194	29.38%
Zinc (and its compounds)	57	224	25.45%
Manganese (and its compounds)	55	229	24.02%
Lead (and its compounds)	52	175	29.71%
Isopropyl alcohol	47	144	32.64%
Sulphuric acid	45	144	31.25%
Chromium (and its compounds)	40	179	22.35%
Methyl ethyl ketone	37	111	33.33%
Acetone	33	116	28.45%
Nickel (and its compounds)	32	146	21.92%
Hexavalent chromium (and its compounds)	30	82	36.59%
Hydrochloric acid	30	91	32.97%
Speciated VOC (Volatile Organic Compound) - Ethyl alcohol	29	116	25.00%
Speciated VOC (Volatile Organic Compound) - n-Butyl acetate	26	70	37.14%
Nitrogen oxides (expressed as nitrogen dioxide)	25	131	19.08%

* Number of Implementers: number of facilities that have reported they are implementing an option for at least one substance in a plan summary submitted between 2011 and 2013.

A complete list of facilities planning to reduce toxics (as reported in 2011-2013 Plan Summaries) is available on Ontario's [Open Data Catalogue](http://www.ontario.ca/data/toxics-reduction). (<http://www.ontario.ca/data/toxics-reduction>)

Supporting industry

Ontario continues to support industry to reduce toxics and help facilities understand how to report their toxic substance reduction information. The Toxics Reporting Helpdesk responds to phone and email inquiries related to the online reporting interface (Single Window), or from time to time, assists with questions about the reporting requirements. For each of 2014 and 2015 the help desk responded to over 650 emails and phone calls.

The province held four technical training sessions for industrial sectors in April 2014. These sessions focused on the web-based reporting process to increase the understanding of the system and ensure data was reported accurately.

Guidance documents continue to be available to support industry and help them understand their obligations. These include plain language and technical documents that provide clarification and examples on toxic substance accounting, reporting and the development of toxic substance reduction plans. Also available to industry is guidance on safer alternatives, to assist industry in replacing toxic substances with greener and safer options.

Compliance

Ontario annually conducts compliance activities to ensure facilities are complying with the requirements of the act and regulation. Compliance with the act's reporting requirements are assessed following key compliance dates (e.g. June 1 annual report date) and involves a combination of data analysis and a graduated compliance approach.

An important factor in determining compliance involves identifying regulated facilities. This is achieved by reviewing historical facility and discharge data from the federal government's NPRI (National Pollutant Release Inventory) for the manufacturing and mineral processing sectors. This information is then used to identify facilities with potential reporting irregularities with the act's reporting requirements.

When a reporting irregularity is identified, facilities are contacted to confirm that the facility is subject to the act. When it is confirmed that a facility has not met their reporting requirements under the act, follow up is initiated by Environmental Officers using a graduated compliance approach.

The graduated compliance approach begins with a communication (e.g. letter or phone call) to the facility and if required, may escalate to a site visit or inspection where Environmental Officers employ compliance and/or enforcement tools as set out in the *Toxics Reduction Act*, to ensure all requirements of the act and regulation are being met.

Since the last annual report, the introduction of approximately 270 additional Phase II substances and substance groups has resulted in an increase in the number of facilities under the program that are now subject to compliance assessment.

Between January 1, 2014 and September 30, 2015, Ontario used the graduated compliance approach to follow up with companies regarding the 2012 and 2013 reporting, planning and public posting requirements. As a result of these efforts, compliance rates show that 95 per cent of facilities reporting for both Phase I and Phase II substances and substance groups for these years have met the requirements under the act and regulation. Ontario continues to implement the compliance approach with the remaining 5 per cent of facilities to bring them into compliance as well.

Chemicals linked with cancer

Toxic substance reduction planning in Ontario can prevent chemicals linked with cancer from being used and created. Below is the analysis on the number of facilities intending to implement an option to reduce chemicals linked with cancer, based on plan summaries submitted.

Number of facilities that intend to implement an option by chemical linked with cancer _ between 2011 and 2013.

Chemical linked with cancer	Number of Implementers**
Lead (and its compounds)	52
Sulphuric acid	45

Nickel (and its compounds)	32
Hexavalent chromium (and its compounds)	30
Speciated VOC (Volatile Organic Compound) - Ethyl alcohol	29
Cadmium (and its compounds)	17
Formaldehyde	11
Arsenic (and its compounds)	9
2,3,4,7,8-Pentachlorodibenzofuran	6
2,3,7,8-Tetrachlorodibenzo-p-dioxin	6
Benzene	6
Dichloromethane	4
Aluminum (fume or dust only)	3
Benzo(a)pyrene	3
Dibenzo(a,h)anthracene	3
Dibenzo(a,j) acridine	2
Tetrachloroethylene	2
Asbestos (friable form only)	1
Ethylene oxide	1
p,p'-Methylenebis(2-chloroaniline)	1
Trichloroethylene	1
Total	264

*List of chemicals linked with cancer is based on substances that are reportable under the *Toxics Reduction Act* and are classified as known or probable carcinogens by the International Agency for Research on Cancer, 2014.

**Number of Implementers: number of facilities that have reported they are implementing an option for at least one substance in a plan summary submitted between 2011 and 2013.

One of the Toxics Reduction program goals is to inform Ontarians about the toxic substances used, created and released in the province. Ontario is supporting education and outreach through funding agreements with Environmental Defence and Pollution Probe to help bring better information to Ontarians on chemicals linked with cancer. We are working with other organizations with similar goals, such as the Canadian Cancer Society, to find additional ways to inform Ontarians about protecting human health and the environment.

Growing the green economy

The field of Green Chemistry and Engineering provides industry with sustainable products and process alternatives to help meet advancing market demands. This in turn leads to enhancements in sustainability, improvements to human health and drives Ontario's economy forward.

In 2010, Ontario provided funding over five years to support two research Chairs, Dr. Suresh Narine from at Trent University, and Dr. Michael Cunningham from Queens University, to encourage the design of chemical products and processes that are safe, energy efficient and environmentally sustainable.

The Chairs have built significant capacity in the specific areas of their research. To review the Chairs' final reports on their activities, expected in early 2016, visit the [Council of Ontario Universities \(http://cou.on.ca/key-issues/research/ontario-research-chairs/chairs-in-environmental-science/\)](http://cou.on.ca/key-issues/research/ontario-research-chairs/chairs-in-environmental-science/) website.

Minister's award for environmental excellence and recognition recipients

The Minister's Award for Environmental Excellence recognizes and encourages environmental excellence, fosters innovation and raises awareness about the importance of protecting the environment. The 2013 Minister's Award for Environmental Excellence focused on Great Lakes Protection and Environmental Innovation, here are [the award recipients \(http://news.ontario.ca/ene/en/2015/01/recipients-of-the-2013-ministers-award-for-environmental-excellence.html\)](http://news.ontario.ca/ene/en/2015/01/recipients-of-the-2013-ministers-award-for-environmental-excellence.html). The 2015 award cycle is currently underway and the focus is Climate Change.

Support for Ontario's toxic reduction program

Unifor (formerly CAW (Canadian Auto Workers))

"Unifor is the largest private sector union in Canada representing 310,000 members across the country with 159,400 of those members right here in Ontario. Our members in Ontario work in a wide range of sectors including manufacturing, transportation, communications, resources and services.

Many of these workplaces use or manufacture toxic substances or produce them as a by-product. Workers are often on the front line of exposure to hazardous substances as they work directly with some of these chemicals in their workplaces. Unifor sees the Ontario *Toxics Reduction Act* as one more tool to help protect workers from potentially harmful occupational exposures.

Therefore, Unifor supports the principle of toxics use reduction and works for the elimination of potentially hazardous processes and materials that can harm the environment in the workplace as well as in the community. Where elimination is not possible we advocate for the reduction of use and exposure.

We believe that every employer must use the precautionary principle when using any hazardous or potentially hazardous chemical. This principle states: When an activity raises threats of harm to human health or the environment, precautionary measures should be taken even if some cause-and-effect relationships are not fully established scientifically.

Unifor has effectively worked with employers to achieve these results with the guiding principles of legislation such as the *Toxics Reduction Act* and through workplace joint health and safety committees and workplace joint environment committees.

Together we are committed to protect worker health and safety as well as the health of the environment surrounding the workplace."

Canadian Cancer Society

“The Canadian Cancer Society is pleased to see progress on the implementation of the Toxics Reduction Program in Ontario. We applaud the recent implementation of the Living List process and look forward to its impact on further toxics reduction in our province. The Society strongly believes that as community members, workers, and consumers, we all have the right to know about any environmental and occupational risks we are being exposed to, especially as it relates to cancer. Knowing about toxics in our environment enables us to make informed decisions about our health.

In the fight against cancer, it is particularly important that people know about the cancer-causing substances to which they are exposed. The Society believes that, where possible, safer substitutions should be identified and used in place of carcinogenic substances. Where a safer substitute is not possible, targets should be set to reduce the use of carcinogenic substances as much as possible.

The Society looks forward to continued collaboration with the Ministry of the Environment and Climate Change and partners to promote further innovation and the reduction of toxics in Ontario, leading to a healthier province and a positive impact on cancer.”

Related initiatives

The province is committed to protecting Ontarians and the environment from toxics and other harmful substances beyond the Toxics Reduction Program. Recent initiatives implemented in 2014 and 2015 include:

- setting goals to reduce neonicotinoid insecticide use by 80 per cent
- tackling greenhouse gas emissions
- ensuring our Great Lakes are drinkable, swimmable and fishable
- introducing the new Waste-Free Ontario Act.

Pesticides

In 2009, Ontario's cosmetic pesticides ban came into effect. It continues to be one of the most comprehensive in the world. The ban is part of the government's commitment to protect Ontario families, and the environment from the unnecessary risks of pesticides used for cosmetic purposes.

The use of Class 9 (banned) pesticides is prohibited for cosmetic purposes, such as to control weeds and insect pests on lawns, gardens, parks and school yards across Ontario.

Only biopesticides and certain lower risk pesticides (Class 11) are allowed to be used for controlling weeds, insects and plant diseases for cosmetic purposes. Biopesticides are designated by Health Canada's Pest Management Regulatory Agency. Lower risk pesticides have characteristics such as low toxicity to humans, minimal impact to the environment, and act in a non-toxic way in controlling intended pests. Four pesticides (1 herbicide and 3 fungicides) have been added as Class 11 pesticides in 2014 and 2015.

The number of pesticides designated as Class 11 has increased to 69 pesticides that are allowed for cosmetic uses under the ban. Through education and outreach, the province promotes the use of greener alternatives to manage lawns, gardens, school yards and parks. Learn more about [natural ways to manage pests in home gardens](http://www.ontario.ca/page/natural-ways-manage-pests-home-gardens) (<http://www.ontario.ca/page/natural-ways-manage-pests-home-gardens>).

Pollinator health

As a first step to restoring pollinator health, on July 1, 2015, Ontario became the first jurisdiction in North America to introduce new rules to reduce the number of acres planted with neonicotinoid-treated corn and soybean seeds by 80 per cent by 2017. To support this goal, the province put in place new regulatory requirements for the sale and use of neonicotinoid-treated corn and soybean seed that will help ensure treated seed is only used when there is evidence of a pest problem.

Reducing neonicotinoid use in these two crops is a key component of Ontario's approach to improve pollinator health and to decrease pollinator exposure to this neurotoxic insecticide. To support this action the province is undertaking environmental monitoring on neonicotinoids.

Learn more about the new regulation (<http://www.ontario.ca/page/neonicotinoid-regulations-growers>) and other ways Ontario is taking action (<http://www.ontario.ca/page/pollinator-health>) on pollinator health.

Drinking water standards

On December 11, 2015, Ontario posted a decision (<http://www.ebr.gov.on.ca/ERS-WEB-External/displaynoticecontent.do?noticeId=MTI1MDgo&statusId=MTkxMzU2&language=en>) to the EBR (Environmental Registry) to adopt new/updated drinking water quality standards for eight contaminants including some on the toxic substance list (benzene, arsenic and vinyl chloride). Ontario also posted reporting and testing requirements, as well as implementation dates for these standards which will be phased in between January 1, 2016 and January 1, 2020.

Air standards and technology-based standards

Ontario's local air quality regulation (*O. Reg. (Ontario Regulation) 419/05 Air Pollution – Local Air Quality*) works within the province's air management framework by regulating air contaminants released into communities by various sources, including local industrial and commercial facilities.

In 2011, Ontario introduced new and/or updated air standards for nine contaminants. These new and/or updated air standards will be phased in over five years and will take effect on July 1, 2016. The province continues to review the science on the remaining contaminants prioritized under its standards plan for the purpose of developing new and/or updated air standards.

Learn more about the regulation and new standards (<http://www.ontario.ca/page/rules-air-quality-and-pollution>).

Alternative fuels

To tackle greenhouse gas emissions associated with industrial processes, Ontario passed regulation *O. Reg. (Ontario Regulation) 79/15, Reducing Coal Use in Energy Intensive Industries*. It allows the cement, lime, iron and steel sectors to take advantage of opportunities to reduce the use of coal and petroleum coke by switching to alternative low-carbon fuels. Further, there is potential for reductions in some toxic air contaminants (e.g. mercury).

Learn more about the regulation (<http://www.ontario.ca/laws/regulation/150079>).

Great Lakes

Ontario has developed and is implementing additional programs and initiatives to protect, restore and improve the health of Ontario's Great Lakes, by reducing toxics as well as implementing other management methods. Recent monitoring and research indicates that declines have been realized over the long term since the late 1970s for legacy contaminants in Great Lakes fish and in sediment from the bottom of the lakes, including polychlorinated biphenyls (PCBs (polychlorinated biphenyls)), dioxins, mirex and mercury. Similarly, toxic chemical concentrations have declined in the Niagara River, which connects Lake Erie to Lake Ontario, since the mid-1980's due to remediation of contamination sources on the U.S. (United States) and Canadian sides of the river. While some contamination sources remain, caged-mussel biomonitoring by the province continues to track improvements resulting from remediation efforts. Contaminated sediments due to historical sources in Areas of Concern (AOCs (Areas of Concern)) are subject to sediment remediation strategies to reduce the impacts of the chemical contaminants. Some sites have been remediated while plans continue at other sites. Long term monitoring plans track the success of the remedial efforts.

Chemicals currently in use in consumer and commercial products and goods, such as brominated flame retardants, perfluorochemical surface coatings, pharmaceuticals and personal care products, are present in nearshore waters of the Great Lakes, with greater concentrations found near urban areas that are impacted by surface run-off to rivers entering the lakes and by wastewater treatment plant discharges. Concentrations of brominated flame retardants and perfluorochemicals in Great Lakes fish have declined in recent years as a result of global voluntary and regulatory efforts to reduce use and emissions of these compounds. Great Lakes monitoring programs continue to track trends in contaminant concentrations in, and inputs to, the Great Lakes, and efforts are underway to determine if the low concentrations of chemicals present have the potential to impact the health of fish and other organisms in Great Lakes water and sediment. Monitoring programs continue to assess emerging issues related to potential toxic substances, an example of which is the recent monitoring to better understand sources of microplastics to the Great Lakes.

On November 3, 2015, the *Great Lakes Protection Act* (<http://www.ontario.ca/page/protecting-great-lakes#section-2>), 2015, received Royal Assent. The act recognizes the importance of the Great Lakes to Ontario's environment, economy and the health of the citizens. The act is strengthening the province's ability to keep the Great Lakes and St. Lawrence River clean, as well as to protect and restore the waterways that flow into them.

Ontario also continues to make progress to reduce toxics in the Great Lakes by implementing *Ontario's Great Lakes Strategy* (<http://www.ontario.ca/document/ontarios-great-lakes-strategy>), released in 2012. Goal 2, -Protecting Water for Human and Ecological Health, a key priority under the Strategy, outlines actions to protect water quality by reducing toxic chemicals and actions to reduce excessive nutrients. Fulfilling the Strategy's triennial reporting commitment, Ontario will release the *First Progress Report* (<http://www.ontario.ca/page/great-lakes-and-watersheds>) in early 2016.

Ontario's Great Lakes Guardian Community Fund provides grants to community groups to protect the ecological health of the Great Lakes and St. Lawrence River Basin. Since this fund was launched in July 2012, a total of \$4.5 million has been awarded to 221 community-based projects. These community-based projects help protect habitat and species, clean up beaches and shorelines, help reduce the impact of invasive species, and restore wetlands to manage the flow of stormwater runoff. A new round of funding was launched on August 27, 2015. Learn more about the *Great Lakes Guardian Community Fund* (<http://www.ontario.ca/greatlakesfund>).

The Canada-Ontario Agreement on Great Lakes Water Quality and Ecosystem Health (COA (Canada-Ontario Agreement)) outlines the federal and provincial governments' commitments to protect the Great Lakes which includes taking targeted actions in priority near shore areas and increasing investment in nutrients and climate change science. On December 18, 2014, a new COA (Canada-Ontario Agreement) came into effect and is currently

being implemented. Annex 2, Harmful Pollutants, guides actions to reduce or eliminate releases of harmful pollutants into the Great Lakes Basin. Learn more about how COA (Canada-Ontario Agreement) helps protect the Great Lakes (<http://ec.gc.ca/lcpe-cepa/default.asp?lang=En&n=E9A42FF1-1>).

Climate change

Ontario has demonstrated its leadership and commitment to fight climate change through several actions, most notably, ending coal-fired power – one of the largest greenhouse gas reduction initiatives in North America, equivalent to taking seven million vehicles off the road.

In May 2015, Ontario established a new mid-term 2030 greenhouse gas emission reduction target of 37% below 1990 levels and is establishing a cap and trade program to limit greenhouse gas pollution with the intent to link with carbon markets in Quebec and California. A cap and trade program effectively reduces the amount of greenhouse gas pollution going into our atmosphere by setting a limit on emissions, rewarding innovative companies, providing certainty for industries, and generating more opportunities for investment. The program will cover emissions from buildings, transportation and industry, and is planned to come into effect on January 1, 2017.

On February 24, 2016, Ontario introduced new legislation that, if passed, would ensure that proceeds from the province's cap and trade system are transparently reinvested into green projects and actions that will reduce greenhouse gas pollution.

Under the proposed *Climate Change Mitigation and Low-carbon Economy Act*, all proceeds from Ontario's cap and trade program would be deposited into a new Greenhouse Gas Reduction Account. In turn, this account would only fund projects and initiatives aimed at reducing emissions. The proposed *Climate Change Mitigation and Low-carbon Economy Act* builds on Ontario's recent actions to fight climate change, including investing in projects that fight climate change through the \$325-million Green Investment Fund.

Ontario recently made an unprecedented multi-billion-dollar commitment to transform its commuter rail network. (<https://news.ontario.ca/opo/en/2015/04/ontario-increasing-go-transit-service-along-all-corridors.html>) As part of this plan, the current fleet of fossil-fuel powered commuter trains is being replaced with a fully electric Regional Express Rail system that will operate trains in both directions every 15 minutes on over 450 kilometres of track. This transformation is expected to have a positive impact on mode-splits, by tripling ridership over the next 15 years, while also supporting intensification and efficient land use patterns in suburban areas leading to significant GHG (Green House Gas) reductions.

Ontario's new Climate Change Strategy (<http://www.ontario.ca/page/climate-change-strategy>), released in November 2015, sets out the transformative change required to reduce greenhouse gas emissions sufficient to achieve our targets, including an 80 percent reduction relative to 1990 levels by 2050. Ontario's strategy builds on the foundation already established in Ontario to innovate and invest in a high-productivity economy that values our natural capital. It shifts Ontario toward a carbon neutral society and economy that will better protect our air, land and water and support growth and prosperity, while leaving a legacy of a healthy world for future generations.

An action plan to implement the strategy over the next five years will be released in 2016 and will identify policies and programs to ensure near and long term emissions reductions and increased resiliency to climate impacts.

Ontario's approach to climate change will allow us meet our GHG (Green House Gas) reduction targets, reward innovative companies and ensure that households and businesses thrive during the transition to a low-carbon economy.

As an initial step, Ontario announced the Green Investment Fund (<http://www.ontario.ca/page/green-investment-fund>) in the 2015 Fall Economic Statement (<http://www.fin.gov.on.ca/en/budget/fallstatement/2015/>). The fund commits \$325 million to projects that will fight climate change, grow the economy and create jobs. These investments are part of our plan to secure a healthy, clean and prosperous low-carbon future.

Green Investment Fund projects will:

- help homeowners use less energy (<http://news.ontario.ca/mei/en/2016/02/ontario-investing-100-million-to-create-jobs-and-help-homeowners-save-energy.html>)
- support more electric vehicle charging stations (<https://news.ontario.ca/opo/en/2015/12/more-electric-vehicle-charging-stations-on-the-way.html>) across Ontario
- retrofit social housing developments (<https://news.ontario.ca/mah/en/2016/02/ontario-investing-92-million-to-create-jobs-and-retrofit-social-housing.html>)

Waste-Free Ontario Act

In November 2015 the government introduced the *Waste-Free Ontario Act* to divert more waste from landfills, create jobs and help fight climate change. The province also introduced a draft strategy that outlines Ontario's vision for a zero waste future and a proposed plan to implement the legislation. Together, the proposed legislation and strategy would, among other things, seek to decrease hazardous and toxic substances in products and packaging. For example, studies have shown that recycling helps to avoid emissions of seven pollutants, including respiratory irritants, carcinogens and other toxic substances. Learn more about Ontario's proposed legislation and draft strategy. (<https://news.ontario.ca/ene/en/2015/11/ontario-introduces-new-waste-free-ontario-act.html>)

Microbeads

Ontario is working with scientists and other agencies, to conduct research to learn more about the sources of microplastics and their potential impacts on the Great Lakes. Microplastics are the breakdown of plastic material, such as plastic bags and wrappers, into smaller fragments.

Concern surrounding microplastics has focused specifically on microbeads which are added to personal care products such as facial scrubs and toothpaste. Microbeads are a small plastic particle less than 5 millimeters in diameter. Monitoring efforts show that microbeads are making their way into Ontario's aquatic environment. Some studies have demonstrated the potential for microbeads to cause harm to fish and other organisms when ingested.

In 2015, Ontario held consultation sessions with industry representatives and environmental organizations to discuss the findings of the ministry's research on microplastics in the Great Lakes, and the principles which could be used to guide the development of a provincial regulatory approach to addressing microbeads in personal care products, non-prescription drugs and natural health products.

In August 2015, the federal government published a proposal to add microbeads to the List of Toxic Substances under the Canadian *Environmental Protection Act* and is considering developing regulations to ban the manufacture, import, and sale of microbeads.

Since that time Ontario has been actively participating in the federal consultation process to ensure that any action taken on microbeads effectively protects our aquatic environment.

Ontario recognizes that action on plastic microbeads is an important first step in addressing a broader problem of microplastics accumulating in our lakes and rivers, and that there are a range of solutions that will need to be applied to reduce microplastics in the environment over the longer term.

Staying informed

Reducing toxic substances involves efforts from a wide range of players, including industry, environmental, health and labour organizations and by Ontarians.

Since its inception, the Toxics Reduction Program has provided business with the opportunity to realize a number of environmental, economic and social benefits through toxic substance reduction planning. Together with its partners, Ontario continues to take steps toward achieving the goals of the *Toxics Reduction Act*:

- preventing pollution in the province
- informing Ontarians about toxic substances
- protect human health and the environment by reducing the use and creation of toxic substances.

Stay informed on how Ontario is taking action on toxic substances (<http://www.ontario.ca/page/toxics-reduction-program>), including information and updates on the Living List process (<http://www.ontario.ca/page/living-list>)

To learn more about toxics and help make informed choices, please visit the Canadian Partnership for Children's Health & Environment (<http://www.healthyenvironmentforkids.ca/>) and the Canadian Cancer Society's article Harmful Substance and Environmental Risks (<http://www.cancer.ca/en/prevention-and-screening/be-aware/harmful-substances-and-environmental-risks/?region=on>).

Updated: February 29, 2016

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