



What the Windsor-Essex County Community Had to Say About **REDUCING CHEMICAL EXPOSURES**



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2008-2009

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*Project conducted by: **Toxic Free Canada – Ontario (TFCO)***

*Sponsored by the: **Occupational Health Clinics for Ontario Workers (OHCOW)***

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Summary

In 2008-2009 the Ontario Trillium Foundation (www.trilliumfoundation.org) funded a project, sponsored by the Occupational Health Clinics for Ontario Workers (www.ohcow.on.ca), entitled "Reducing Chemical Exposures." One very significant outcome of this project was the launch of a new environmental health organization in Southwestern Ontario, called Toxic Free Canada-Ontario (www.toxicfreecanadaontario.ca), a provincial offshoot of the national Toxic Free Canada based in British Columbia (www.toxicfreecanada.ca).

The first undertaking of the Ontario chapter was a community information-gathering and idea-sharing project in Windsor and Essex County. Why was this public awareness raising and consultation process important? While some information about the risks related to pollution and hazardous industrial chemicals does reach us through the media and other sources, it is nevertheless often fragmented and difficult to decipher. Moreover, there is currently very little focused community dialogue about these environmental health concerns.

It was the intention of this project to increase community members' understanding of health risks related to chemical exposures and ultimately to influence change in personal and institutional practices. It was also meant to open the door for grassroots dialogue regarding green technology initiatives, which may have broader benefits for the economically challenged Windsor-Essex region.

After exploring relevant scientific evidence and then holding a series of community knowledge sharing events the resulting information and ideas were gathered and summarized into this report. It is divided into three sections:

1. *Background*
2. *What the community had to say*
3. *A few resources*

Conclusions

There were several themes that were voiced over and over again in the various consultations from community members of all ages and backgrounds. It is clear that the participating residents of Windsor-Essex want a cleaner environment, better environmental laws and stricter enforcement, a more fair and just economy, better mass transit, more bike paths, improved natural surroundings, access to local healthy foods, greater use of wind and solar power, and *greener, healthier jobs*.

This report should serve as a resource, not only to forward-thinking community members, but also to officials and elected leaders whose mandate it is to address their constituents' priority concerns.



BACKGROUND

Because environmental chemical exposures are both common and often avoidable, reducing them should be a public health priority. Increasing knowledge of the impact of our carbon-based economy on the climate has resulted in a new openness among the general public to consider a wider range of environmental health problems. Global warming, ecosystem degradation, and environmentally related human and wildlife health impacts have one common characteristic: they have all been brought about in recent decades by the rapid growth of industrialization and consumerism and by the assimilation of a growing number of potentially harmful products and practices into our everyday lives -- at work, at home, and at play. Not all chemicals are harmful. Unfortunately, very few of the tens of thousands of chemicals in common use have been adequately tested for their health or environmental effects. We do know, from the scientific studies that have been done, that many can cause cancer and other serious health problems. There is also growing concern about a wide range of synthetic substances that mimic hormones, such as pesticides, solvent-based cleaning agents, vehicle exhaust, components of plastics, etc. which may be harmful to humans, wildlife, and the ecosystem.

This report includes information about a very few of the thousands of toxins to which we are potentially exposed. It focuses particularly on those that can cause cancer or disrupt the hormonal system, two areas of concern for the local community. It is important to note that many of the chemicals of concern regarding consumer products or our general environment can be present in much greater amounts and concentrations in some occupational settings.

A number of studies have been done to measure levels of toxins in individuals' bodies, particularly in Canada and the U.S.. The average person was found to have measurable levels of pesticides, plastics, fire retardants, and other toxins. Scientists do not know what the health risks might be of these typical, low level,

body burdens, but the studies certainly have established that there is widespread exposure to a long list of chemicals and that many remain for extended periods of time our body tissues.

Toxins can affect any part of the human body. They can cause respiratory harm, reproductive problems, neurological diseases, and of course, cancer.

Issues of particular concern for Windsor-Essex County

High smog levels are common in southwestern Ontario. According to the air quality index (AQI) data for 2005 and 2006, provided by the Ontario Ministry of the Environment, there were more days in which air quality was considered to be in the poor category in Windsor-Essex and neighbouring Chatham-Kent than in any of the other areas of the province.¹ *Note: The AQI reflects several criteria contaminants: ozone (O3), fine particulate matter (PM2.5), nitrogen dioxide (NO2), sulphur dioxide (SO2), and carbon monoxide (CO).*

The *National Pollutant Release Inventory* data for 2006 revealed that there were 26 industries emitting reportable pollutants within 20 kilometers of downtown Windsor. In total they introduced over one million kilograms of toxic chemicals into the air in that year alone.

The most recently available *Toxic Release Inventory* data for neighbouring Wayne County in the U.S., revealed that it was among the dirtiest 10% of all counties for industry-emitted smog components, including particulate and volatile organic compounds.

There is some evidence that these pollutants are affecting the health of the Windsor area residents. The Health Canada hospitalization data for the Windsor area collected from 1986 to 1992 showed an increase in a number of diseases that are associated with the endocrine system and the development and functioning of

1. Environment Ontario. (2007). *Air Quality in Ontario 2006 – A Concise Report on the State of Air Quality in the Province of Ontario.*



the immune and neurologic systems. These diseases are of importance because they may act as indicators that xenoestrogenic (i.e. estrogen mimicking) substances could be adversely affecting the health of the Windsor population and consequently influencing other diseases such as breast cancer incidence.²

Another health study examined causes of death from 1954 through 1999 and cancer incidence from 1971 through 2001 in the Windsor area.³ These are the some of the findings:

- *There was a significant excess rate of mortality (deaths) for circulatory diseases and non-malignant respiratory diseases in both genders.*
- *In the adult age group of 20 to 85, there was a statistically significant excess shown for all cancers, as well as lip, pharynx, tongue, digestive, colorectal, pancreas, larynx, lung, ovary, urinary, Hodgkin's, lymphatic leukemia, and chronic lymphoid leukemia.*
- *There was also an excess of mesothelioma, which is a cancer of the lining of the lung or abdomen, as well as an excess in asbestosis, a debilitating and often fatal lung scarring; both diseases are caused exclusively by exposure to asbestos.*

There is particular concern about air quality in the west end of Windsor which is located downwind of Detroit industry as well as being near the Ambassador Bridge and its traffic, especially the large volume of diesel trucks. Several studies have been undertaken showing poor air quality in the immediate area. In fact, a study published in 2008 found elevated levels of elemental carbon, an indicator of diesel particulate pollution, inside Windsor homes located downwind of the bridge.⁴

2. Gilbertson M and Brophy JT (2001). *Community health profile of Windsor, Ontario, Canada: anatomy of a Great Lakes area of concern (2001)*. *Environmental Health Perspectives*; 109 (Supplement 6):827-43.

3. Band P, et al. (2007). *Canada-US Border Air Quality Strategy (BAQSN): Population-Based Health Studies of The Eastern Canada Regional Air Shed. Part 1. Mortality, 1954-1999 and Cancer Incidence, 1971-2001*.

4. Baxter LK, et al. (2008). *Contributions of diesel truck emissions to indoor elemental carbon concentrations in homes in proximity to Ambassador Bridge' Atmospheric Environment*, 42(49)40:9080-9086.

A recent U.S. National Academy of Sciences study investigated the health impacts related to the burning of fossil fuels, whether to power vehicles or to generate power from coal plants. It found that nearly 20,000 Americans die prematurely each year from the soot and smog coming out of the smokestacks and tail pipes.⁵ While Windsor has stopped generating electricity from coal, it is directly downwind of U.S. coal plants. And the high levels of soot coming from diesel trucks crossing the border has been well established.

CANCER-CAUSING AGENTS

Cancer is believed to be the result of both genetic and environmental factors. Exposures that take place from outside the human body can interact with genetic vulnerabilities to produce abnormal and uncontrolled cell growth that characterizes cancer. Different carcinogens can target different areas of the body. For example, benzene can cause blood-related cancers (among others).

The majority of the approximately 85,000 chemicals in use today have never been tested for their cancer-causing tendencies. However, the *International Agency for Research on Cancer (IARC)* has identified 108 substances as confirmed human carcinogens (based largely on human and animal study evidence), 66 as probable human carcinogens (based on some human evidence but largely on animal studies), and 248 as possible human carcinogens (based on less conclusive evidence).⁶

Some populations are at an increased risk for developing cancer either because of their exposures (e.g. industrial workers, the poor, residents of highly polluted areas, etc.) or because of their biological vulnerabilities (e.g. fetuses, children, genetic history, etc.).

In order to effectively avoid exposure to carcinogens, we need to know what they are

5. *Committee on Health, Environmental, and Other External Costs and Benefits of Energy Production and Consumption; National Research Council. (2009). Hidden costs of energy: Unpriced consequences of energy production and use. National Academy of Sciences.*

6. *International Agency for Research on Cancer. (2009). Complete List of Agents evaluated and their classification.*



and where we are likely to encounter them. In general, we need to avoid the obvious cancer-causing agents, such as cigarette smoke and other products of combustion, unnecessary radiation exposure, such as routine x-rays, certain pesticides, and such workplace agents as solvents and asbestos.⁷

ENDOCRINE-DISRUPTING CHEMICALS

Endocrine disrupters are chemicals that alter the hormone function in living organisms. They can affect both wildlife and humans. Understanding or evaluating the risks posed by exposure to endocrine disrupters is complicated by the fact that they appear to have more profound effects at sensitive stages in development (e.g. younger ages); that their effects may not be apparent until years after exposure (i.e. a lag or latency period); that very small amounts and very large amounts may present a greater risk than moderate amounts; and that they may be present in a variety of mixtures.

According to the European Commission on Endocrine Disrupter Research:⁸

- *Potential human health effects for women include breast and reproductive organ tissue cancers, fibrocystic disease of the breast, polycystic ovarian syndrome, endometriosis, uterine fibroids and pelvic inflammatory diseases, and declining sex ratio (i.e. more female babies born than male).*
- *Potential human health effects for men include poor semen quality (low sperm counts, low ejaculate volume, high number of abnormal sperm, low number of motile sperm), testicular cancer, malformed reproductive tissue (undescended testes, small penis size), prostate disease and other recognized abnormalities of male reproductive tissues.*

7. Clapp R, Howe G, Jacobs M. (2006). *Environmental and Occupational Causes of Cancer Revisited*. *Journal of Public Health Policy* 27:61-76.

8. European Commission on Endocrine Disrupter Research. *Health effects of endocrine disrupters*. (http://ec.europa.eu/research/endocrine/background_health_en.html)

- *Other potential effects include impaired behavioural, mental, immune and thyroid function in developing children, and the early onset of puberty.*

Even such common problems as obesity and osteoporosis may be, in part, explained by endocrine disrupter exposure. Some effects of endocrine disruption may even be passed along to future generations through a process called epigenetics.⁹ There are hundreds of chemicals that are suspected of causing endocrine disruption in some form and to some degree. Some are naturally occurring. Most are synthetic, i.e. made by humans.¹⁰ At least 50 suspected endocrine disrupting chemicals are permitted for use in food packaging.¹¹ While the study of endocrine disrupters is a relatively new area, and much of the evidence is still inconclusive, there is growing scientific information available for several commonly encountered chemicals of concern, such as the following examples.

Bisphenol A

In a recent study, 92.6% of Americans were found to have measurable amounts of bisphenol A (BPA) in their urine. Evidence indicates that it mimics estrogen. This has implications for men, women, and children. In 2008, under pressure from concerned citizens' groups, the Canadian government banned the import and sale of polycarbonate baby bottles containing BPA. This is a step in the right direction. Unfortunately, BPA still exists in many plastic toys, kitchen utensils, household gadgets, electronic parts, as well as in the epoxy linings of food and drink cans (including infant formula), hard water bottles, sport drink containers, food containers, and even glass jar lids. Reading your morning newspaper may expose you to BPA from the ink. It is even found in the carbonless copy paper receipts the cashier hands you in the grocery store. In fact, the recycled paper you use to help protect the environment is likely to expose you to BPA

9. The Endocrine Society. (2009). *Endocrine Disrupting Chemicals: An Endocrine Society Scientific Statement*.

10. Institute for Environment and Health. (2005). *Chemicals purported to be endocrine disrupters*.

11. Muncke J. (2009). *Exposure to endocrine disrupting compounds via the food chain: Is packaging a relevant source?* *Science of the Total Environment* 407:16.

because much of it is made from previously used paper that contained BPA-laden inks.¹²



Polycyclic aromatic hydrocarbons

Polycyclic aromatic hydrocarbons (PAH) are byproducts of combustion. They are both carcinogens and likely endocrine disruptors. They are found in vehicle emissions, cigarette smoke, air pollution, industrial settings, and charred foods. PAHs have been found to increase the risk for lung cancer and other respiratory disease and for breast cancer, especially for younger women.

Flame retardants

Brominated flame retardants are common in many consumer products including electronic equipment, lighting, wiring, building materials, textiles, furniture, and industrial paints. The brominated fire retardants known as PBDEs (polybrominated diphenyl ethers) are the most widely used in North America and PBDE pollution has been found essentially everywhere scientists have looked. PBDEs are similar in structure to the highly persistent and bioaccumulative PCBs, which were banned in the 1970s. Numerous studies have revealed that exposure to minute doses of PBDEs at critical points in development can cause deficits in motor skills, learning, memory and hearing, changes in behavior, and decreased sperm count.¹³ They have also been found to cause thyroid dysfunction in laboratory animals.¹⁴

12. Smith R and Lourie B. (2009). *Slow Death by Rubber Duck*. Alfred A. Knopf, Canada.

13. *Toxic Fire Retardants In American Homes (2004)* by Renee Sonya, Environmental Working Group

14. Diamanti-Kandarakis E, et al. (2009). *Endocrine-Disrupting Chemicals: An Endocrine Society Scientific Statement*,

Increasing concern about the health impacts of this family of chemicals, especially on children, has prompted some European countries to ban them.

Non-stick coating

According to the Environmental Protection Agency, perfluorooctanoic acid (PFOA) is one of the key compounds used in the manufacture of non-stick cookware and in stain-resistant, grease-resistant, and water-proof materials, such as food packaging and upholstery treatments.¹⁵ PFOAs are very persistent in the environment and can be found in the blood of the general U.S. population. Studies indicate that PFOA causes developmental and other adverse effects in laboratory animals.¹⁶

Phthalates

Phthalates are plasticizers. Although they have been phased out in many babies' and children's toys, teething rings, and utensils, they continue to be used widely in household and other consumer products, including many cosmetics. They have been shown to mimic estrogen. Phthalates exposure may endanger a growing fetus. For example, scientists have found that prenatal exposures can decrease the anogenital distance among male infants.¹⁷



Pesticides

There is growing concern about the effects of pesticide exposure on human health. Humans can be exposed through their work, through lawn and garden maintenance, or by consuming foods with residual insecticides, herbicides, or

15. Brody JG, et al. (2007). *Identifying gaps in breast cancer research: Addressing disparities and the roles of the physical and social environment*.

16. *Collaborative on Health and the Environment. (2007). What We Know*.

17. Swan, SH, et al. (2005) *Decrease in anogenital distance among male infants with prenatal phthalate exposure. Environmental Health Perspectives, 113, 1056–1061*.

fungicides. Of particular concern are the more highly exposed rural residents who are regularly exposed to agricultural chemicals.



Concerns about the environmental effects of pesticides were first raised in the 1960s when Rachel Carson, author of *Silent Spring*, noted the declining bird population resulting from DDT insecticide exposure. But it took until 1990 for Canada to ban this dangerous endocrine-disrupting and cancer-causing chemical. Despite the ban, residues can still be found in human blood samples worldwide. Other pesticides, such as pyrethrins and organochlorine and organophosphate pesticides are also found in measurable amounts in people of all ages in Canada and around the globe.¹⁸

Recognizing the potential human health risks of exposure, in 2009 the province of Ontario banned the cosmetic use of over 250 pesticide products. Some pesticides are either carcinogens or endocrine disrupters or both.¹⁹ *Atrazine*, for example, has been found to be an endocrine disrupter as well as a suspected breast carcinogen. It has been shown to set the stage for breast cancer by increasing the number of vulnerable mammary end buds in young children. *Atrazine* has been banned in Europe but continues to be used in Canada and the US, especially on corn crops.²⁰

18. Environmental Defence. (2006). *Polluted Children, Toxic Nation*.

19. Brody J and Rudel R. (2008). *Environmental pollutants and breast cancer: the evidence from animal and human studies. Breast Diseases: A Yearbook Quarterly* 19(1).

20. Sass J. (2006). *European union bans atrazine while the United States negotiates continued use. International Journal of Occupational and Environmental Health*, 12:260-267.

OCCUPATIONAL EXPOSURES

The carcinogens, endocrine disrupters, and other toxic chemicals found in consumer goods and in the general environment can often be found in much higher concentrations in workplaces. And they are not confined only to industrial settings. Hospitals, farms, schools, construction sites, hair salons, dental offices along with many other workplace settings can be sources of occupational exposure to industrial solvents, radiation, pesticides, heavy metals, and other hazardous agents.

There are many so called “diseases of everyday life,” that upon further scientific examination are found in fact to be associated with workplace exposures. Breast cancer for example, thought until recently to be largely unpreventable, has been linked to pesticides, radiation, and various industrial chemicals.

Two such studies were carried out in Windsor-Essex. The first was a case-control study involving 299 breast cancer cases. The controls were 237 women being treated for cancers other than breast or ovary in the same time period. When the work histories of the cases were compared to the controls it was found that there were more women who had ever farmed among the cases.²¹

Based on these findings, a second study was undertaken in which more detailed work histories were gathered by interview from 564 breast cancer patients and 599 randomly selected community controls without breast cancer. The results indicated that women with breast cancer were nearly three times more likely to have worked in agriculture when compared to the controls. The risk for those who worked in agriculture and subsequently worked in auto-related manufacturing was further elevated. It was noted that children who grew up on farms typically took on farming chores at very young ages.²²

21. Brophy J, Keith MM, et al. (2002). *Occupational histories of cancer patients in a Canadian cancer treatment centre and the generated hypothesis regarding breast cancer and farming. International Journal of Occupational and Environmental*, 8:346-353.

22. Brophy JT, Keith MM, et al. (2006). *Occupation and breast cancer: a Canadian case-control study. Annals of the New York Academy of Sciences*, 1076:765-777.

WHAT THE COMMUNITY HAD TO SAY

A broad based community consultation in Windsor and Essex County resulted in a wide range of comments, concerns, and constructive (and sometimes creatively utopian) ideas for beginning to tackle the areas' somewhat unique problems related to industrial pollution, chemical exposures, and economic issues. The process included several events involving groups ranging from about 15 persons to more than 300 and representing all ages and backgrounds.

COMMUNITY CONSULTATION # 1: Earth Day Essex-Windsor

Toxic Free Canada – Ontario took part in the Earth Day activities held in Windsor, Ontario on April 26, 2009. A display was set up and brochures, articles, and *Toxic Trivia* cards, were provided.



The display included a hands-on survey with large puzzle pieces. Each puzzle piece represented an idea for making the community “greener”. The survey title read, “*Want a Greener Community? Pick Your Top 3 Priorities!*” Participants were given the opportunity to rate the priority issues using self-sticking dots. Each was allowed three “votes”. In addition, participants could make suggestions for other green ideas.

Over the five-hour duration of the Earth Day event, approximately 300 people came to the display. The “Toxic Trivia Cards” and survey elicited interesting discussions and comments. Many people commented on how pleased they were with the introduction of an organization with the mandate of *Toxic Free Canada – Ontario*.



THEIR IDEAS!!

The results of the survey are shown in the table that follows. It is interesting to note that the Top three priorities are: “Alternative Energy Services” followed with 10.4% of the votes, “Green Jobs” with 9.7%, and “Toxics Reduction Programs” with 9.2%. The Windsor area is currently experiencing among the highest unemployment rates in the country due primarily to the decline of the auto industry. Given this fact, it is even more significant that “Green Jobs” were given such a high priority rating.

While specific demographic information about the survey participants was not gathered, it was apparent that there was a wide diversity of ages, ethnicity, and level of environmental awareness.



EARTH DAY SURVEY RESULTS

<i>Issue</i>	<i>Number of Dots</i>	<i>% of Total dots</i>
<i>Alternative energy services</i>	92	10.4
<i>Green jobs</i>	85	9.7
<i>Toxics reduction programs</i>	81	9.2
<i>More green spaces</i>	79	8.9
<i>Increase/develop urban forests</i>	73	8.3
<i>More bike paths and bike sharing</i>	66	7.5
<i>Greener waste management</i>	64	7.3
<i>Better public transit</i>	60	6.8
<i>Programs for greening workplaces</i>	52	5.9
<i>Community gardens</i>	43	4.8
<i>Youth on-the-job training for green work</i>	42	4.8
<i>Municipal green box program</i>	39	4.4
<i>Carpooling programs</i>	30	3.4
<i>Increase public access to water/beaches</i>	28	3.2
<i>BPA bottle and can lining free zone</i>	25	2.8
<i>Other Ideas (written in by participants)</i>	19	2.2
<ul style="list-style-type: none"> • <i>More economic democracy</i> • <i>More vegan restaurants</i> • <i>Light pollution reduction</i> • <i>Timers on household items</i> • <i>Cisterns for rainwater in new housing</i> • <i>Clean emissions from all industry (includes water, air, land)</i> • <i>Recycling in restaurants, schools etc.</i> 		
TOTAL	878	100%



COMMUNITY CONSULTATION #2

Retooling our Economy, Environment, and Stuff Workshop

An evening workshop was held in Windsor to tackle the dilemma: *How do we reconcile the need for full, rewarding employment with the need for a healthy, life-sustaining environment?*

The event was intended to provide local residents with an opportunity to talk about how they would reshape our community in ways that would reduce chemical exposures while enhancing quality of life. The event was sponsored by *Toxic Free Canada-Ontario* and the local chapter of the *Council of Canadians*.

Approximately twenty-five local community members representing a broad spectrum of ages, backgrounds, and organizational affiliations, including unions, environmental and occupational health organizations, attended the meeting. The evening began with the showing of the 20-minute film, *"The Story of Stuff"* which describes the global economic, environmental, and social justice problems related to the escalating extraction of resources to produce more and more "stuff" and the related issues of increasing inequality, and environmental degradation.

The group debated the prioritizing of three critical needs: *"Way of Life," "Work,"* and *"Health."* As anticipated, it was not possible to reach a consensus regarding which should be considered the top priority. The participants then divided up into three smaller sub-groups. Each sub-group was asked to design a new hypothetical community with the characteristics that would enable it to meet their top priority need. The communities were to be called, *"Lifeburg," "Healthville,"* and *"Worktown."* Participants were also encouraged to draw community plans.

The main ideas resulting from the small groups' "city planning" sessions are as follows (generally in the presenters' own words).



THEIR IDEAS!!

Lifeburg (in which one's way-of-life or quality of life is viewed as the highest priority). *The planners for this hypothetical community reported that it would have the following characteristics:*

- Freedom for people to feel it is okay to call for help when they are in despair, i.e. more help centers.
- Public access media.
- Self-sustaining homes, i.e. solar energy, geothermal, wind turbines.
- A safe community.
- Local shops - no big box stores so it would be like in Europe where you have little shops and go every day.
- Public transit, bike paths, hiking trails.
- Equality for everybody.
- Family farms; community gardens for food and eat locally.
- Community daycare; children treated as important to the community.
- Elderly benefits covered; dental, and house calls from doctors and drug benefits all covered.
- One income to be enough to support a family (unless both want to work outside the home). That would take care of unemployment problem; guaranteed annual income for anybody that doesn't have a job.
- Free higher education.
- A barter system or trade system in place.
- Something for faith, i.e. peace, shalom.

Work Town (in which decent employment is viewed as the highest priority). *The planners for this hypothetical community reported that it would have the following characteristics:*

- Recognize the social value of work - that it contributes to the wellbeing of all, not just ourselves and our families. Non-paid work is valuable for the community, i.e. volunteering, homemakers.
- Having as small a footprint as possible for the workplace; green space; farmland.



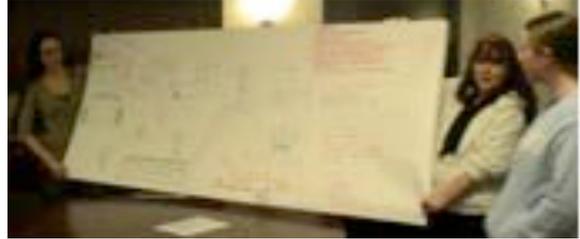
- Trying to reduce the footprint of workplaces; even having offices at home, etc.
- Sustainable means of producing the goods that we need through green industries, green energy, wind turbines, green goods, zero waste.
- More collaborative versus competitive work.
- Reduce the wealth gap.
- Question what does growth accomplish? Is it economic growth? Population growth? Do we want to promote growth?
- Local, democratic ownership and control of workplaces.
- Try to produce enough wealth to support health, education and pensions. Some of those ownership models could be either employee owned or government/town owned for some of the services or some of those industries as well.
- Locally focused produce as much as possible; a little bit of trading with other communities.
- Produce a wide diversity of goods; a variety of services and industries.
- Getting away from the consumer based society and pushing for more service based (doesn't produce as much waste).
- Provide good alternatives to buying goods; e.g. you might not have to buy a car if there was a good transportation system in place, bike share programs, buses, etc.



Healthville (in which human health is viewed as the highest priority). *The planners for this hypothetical community reported that it would have the following characteristics:*

- A community center where everything is voted on and the majority rules (no big government).
- Fertile land; all organic; no genetically modified organisms (GMOs).

- Clean water sources.
- Renewable, sustainable energy.
- Respect for all forms of life; everything in the community to be respected and that is the number one law; laws and legislations to ensure that all standards are met.
- Community center is also a school.



- Committees to work on an international level for a green mindset and to eradicate pollutants from the U.S. and our own.
- Encourage trade locally.
- Alternative transportation, like bikes, horses, boats, etc.
- All homes would have their own gardens and a community garden for those who live in apartment buildings.
- Figure out a method for collecting the energy from human activities' e.g. children's play equipment.
- Expect some conflicts - this community plan wouldn't just happen without a few little problems, e.g. business might feel endangered. Recognize that some people would have a hard time facing this kind of a basic lifestyle because we do not have a lot of amenities and so we know that these are struggles that we would have, but we hope that we would resolve them by our little gatherings.
- Try to keep everything as natural as possible, have midwives and healers, herbalists, etc.;
- Small family farms and if you want to eat meat you eat local meat only; orchards, community gardens.
- At the entrance we would have a vision statement; it kind of mirrors what Windsor's is, "*Let air and land and water sustain us.*"

COMMUNITY CONSULTATION # 3: Workshop with Parents at Ontario Early Years Centre

A short workshop was held with a group of fifteen parents attending the Ontario Early Years Centre program with their young children in Windsor.



The dialogue focused on the health and environmental impacts of our throw-away society. Using material presented in the film, the *Story of Stuff*, along with environmental health information, facilitators prompted the participants to brainstorm ways in which we might change our personal as well as our societal practices to protect the environment and in turn the health and wellbeing of its human population.



THEIR IDEAS!!

The participants offered the following ideas:

- Reuse, recycle, and share used but still useful items through organized community programs (e.g. clothing, baby furniture, etc.).
- Reduce dependency on automobiles, and thereby reduce the use of petroleum-based fuels and their resulting air quality impacts.

- Improve bike paths.
- Provide better mass transit.
- Change building codes to require more energy efficient, greener buildings.
- Implement a municipal biological waste program for materials that can be composted.
- Provide the land for community gardens and encourage their productive use as an inexpensive food source.
- Support the local development of solar and wind power generation.
- Encourage the purchase and consumption of local food.
- Eliminate unnecessary packaging.
- Avoid the use of chemical-based cleaning agents (to protect health and save money).
- Avoid using pesticides.

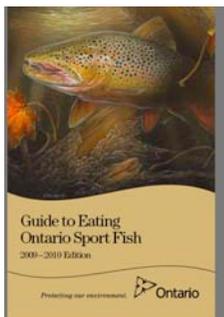
The participants expressed concerns about the future of the planet, particularly for the sake of their children. They talked about their commitment to making what changes they could on an individual basis. They also wanted to have their concerns and ideas communicated to those in a position to influence broader regulatory changes.



COMMUNITY CONSULTATION # 4: High School Social Justice Forum

Representatives from *Toxic Free Canada – Ontario* gave presentations to approximately 200 secondary school students at an event sponsored by the Teachers' Social Justice Group. In addition, as part of the community consultation process on reducing chemical exposures, the representatives facilitated two workshops with a total of approximately 40 students. The theme of the event was water. The workshops focused primarily on the environmental and human health impacts of pollution in the Great Lakes.

The workshops were aimed at raising the students' awareness of the history and the scope of the chemical pollution of the Great Lakes, which are the largest source of accessible fresh water on the planet. A twenty-minute presentation described how mercury, PCBs, dioxins and other chemical contaminants were deposited into the lakes (through direct industrial and municipal dumping, through agricultural runoff, and air pollutant deposition). It also included a brief summary of the scientific evidence showing the wildlife and human health impacts associated with the pollution.



In order to illustrate the magnitude of the problem and its impacts on human health, the presentation was followed by an exercise requiring implementation of the Province of Ontario's Guide to Eating Sport Fish. (Note: This important guide was established in 1976 as a

result of evidence of potential human harm from the consumption of bioaccumulated toxins residing in the fatty tissues of sport fish particularly the larger species and those in the more contaminated areas.)

Students were asked, as part of a small group activity, to plan a month's meal plan for various family members that included select sport fish from a nearby fishing area in Lake Erie. They then reported the results back to the broader group. As expected by the facilitators, students

commented that the *Guide* was confusing to them, that they had no idea such a guide existed, and that they were dismayed that it was even necessary.

The remainder of the workshop involved a discussion of how we might prevent the further contamination of this important fresh water resource and its associated flora and fauna.



THEIR IDEAS!!

The participating students offered the following ideas for reducing chemical exposures:

- Don't eat fish or, for that matter, "anything with a face or a mother", i.e. promote vegetarianism.
- Minimize the production and use of plastics.
- Grow, purchase, and eat only organic foods.
- Use public transportation and bicycles.
- Do not purchase or use bottled water.
- Drink filtered tap water and use only refillable, non-plastic water bottles.
- Use safe cosmetics and safe household cleaning agents.
- Don't use plastic shopping or garbage bags.
- Establish much more stringent environmental protection, i.e. pollution regulations.



COMMUNITY CONSULTATION # 5: Windsor Community Roundtable

A group of twenty-six community activists came together to discuss the seemingly impossible choices facing the Windsor area community of *jobs versus the environment*.

The event was held by a coalition of Toxic Free Canada - Ontario, the local chapter of the Council of Canadians, the Polaris Institute, and the CAW Windsor Regional Environment Council.



This discussion focused on reducing chemical exposures by reducing the environmental and social costs of the Tar Sands oil extraction. There was particular focus on the impacts on Windsor of the coming expansion of the oil refinery in neighbouring Detroit. Also of concern were the implications of the continuing dependency on oil for Canada's economy and, more specifically, its impacts on manufacturing job losses in southwestern Ontario.

Following a discussion of the Windsor area's environmental and human health problems, three small groups were formed to brainstorm possible solutions.



THEIR IDEAS!!

Each of the small groups provided ideas. The following are some of the highlights.

- Have neighbourhood meetings to discuss environmental issues.
- Get the facts about the Alberta Tar Sands out to public; inform residents of west Windsor of health issues regarding Tar Sands effects.
- Invite a representative from the Marathon Refinery to Windsor for a public *Question and Answer* forum.
- Candidates (electoral) should focus on tar sands concerns.
- Foster debate.
- Eat more local food.
- Produce renewable energy devices in Windsor and throughout Canada.
- Improve public transportation.
- Promote the green technologies and achievements already in Windsor; have tours of green developments
- Recognize the sustainable infrastructure and history of labour and public transit (modes that were destroyed).
- Present alternatives to the current carbon-based economy.
- Get the city off the grid.
- Show the benefits of greening; it saves you money, beautifies our city, and sustains health.

The broader group agreed to a number of suggestions:

- *Form a local coalition to deal with ongoing issue, particularly global climate change, pollution and the environment.*
- *Increase local education and awareness around environmental health issues.*
- *Promote and support green jobs in all sectors, including transportation.*

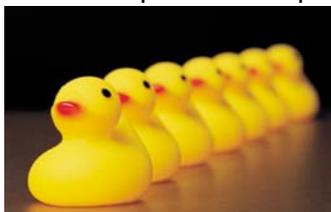
Follow-up meetings of the newly formed coalition have been taking place.

COMMUNITY CONSULTATION # 6: Neighbourhood Playgroup

A presentation was made to a neighbourhood playgroup that included approximately seventeen parents and sixteen children.

The main focus of the presentation was reducing chemical exposures in consumer products, particularly those of most concern for parents and their children.

Despite information campaigns that warn consumers about chemical risks from household and personal care products, people often fail to make the connection between those products and their personal exposure to chemicals that could harm their health. For example, the Silent Spring Institute's Household Exposure Study found that *"People more readily equate*



*pollution with large-scale contamination and environmental disasters, yet the products and activities that form the backdrop to our everyday lives—electronics, cleaners, beauty products, food packaging—are a significant source of daily personal chemical exposure that accumulates over time."*²³



It is important to realize that the body burden of the chemicals is greater for babies in utero and young children. Unfortunately, few of the chemicals to which we are regularly exposed have undergone sufficient testing to fully

understand whether or not they might be harmful to a fetus or child.



THEIR IDEAS!!

The main ideas to come out of the informal discussion that took place after the presentation were as follows:

- Need more support for breastfeeding; important to breastfeed children for as long as possible.
- Need reliable information related to breastfeeding.
- Need reliable information about safety of products, e.g. plastic water containers.
- Need readily available safe cosmetics, baby products, and other consumer products.
- Need to avoid chemicals that have not been fully tested.
- Should try to eat organic food whenever possible and especially when pregnant or breastfeeding; and feed children organic foods when possible.
- Limit or stop use of pesticides on neighbouring golf courses.



23. Rebecca Gasior Altman, et al. (2008). "Pollution Comes Home and Gets Personal: Women's Experience of Household Chemical Exposure," *Journal of Health and Social Behavior* (December).

A FEW RESOURCES

We have listed a few key information sources to help you to explore ways to reduce chemical exposures. Many of the following websites also provide their own links to other important resources. *Note: We apologize to the many excellent information providers we have not included in this brief list.*

The Endocrine Disrupter Exchange (TEDX) provides a searchable database that focuses on low dose or ambient exposures to endocrine disrupters and their effects on fetal development. It was created by Dr. Theo Colburn, author of *Our Stolen Future*.
See: www.endocrinedisruption.com

The Pesticide Action Network (PAN) provides a searchable database containing regulatory and toxicity information for thousands of chemical pesticides.
See: www.pesticideinfo.org



The Environmental Working Group (EWG) created the searchable *Skin Deep* cosmetic safety database that includes thousands of consumer cosmetic products. You can research the ingredients of your favourite shampoo or lip gloss or look for the least toxic products.
See: www.cosmeticsdatabase.com
See also: www.safecosmetics.org

The EWG also provides a list of foods and their pesticide content. EWG recommends that, whenever possible buy organic, at least for the

foods that are the most pesticide laden i.e. the *Dirty Dozen*.
www.foodnews.org

Toxic Free Canada provides information on a wide range of occupational and environmental concerns. You can download a copy of *Environmental Exposure: the CancerSmart Guide to Breast Cancer Prevention* or order *CancerSmart 3.0: the Consumer Guide*.
See: www.toxicfreecanada.ca
and www.toxicfreecanadaontario.ca

Our Stolen Future provides information as well as numerous links to articles and scientific evidence about the health risks posed by chemical exposures, particularly those that cause endocrine disruption.
See: www.ourstolenfuture.org

Prevent Cancer Now is a not-for-profit organization that has compiled a useful collection of information about the causes of cancer, prevention strategies, and campaigns. You can also purchase, through the website, the practical guide to prevention entitled, *Cancer: 101 Solutions to a Preventable Epidemic*.
See: www.preventcancer.ca

Environmental Defence provides a wealth of information about toxins and ideas for avoiding exposures. Rick Smith, director of Environmental Defence, co-authored with Bruce Lourie the entertaining and informative book, *Slow Death by Rubber Duck*. They advise us to reduce exposure to the most toxic plastics by recommending we avoid those marked with the recycling symbols containing the numbers 3, 6 and 7. A handy guide is included in the book. The authors' mantra is "4, 5, 1 and 2. All the rest are bad for you." *Note:* Containers, such as disposable plastic water bottles, that are classified as #1 should be used only once. You can purchase the book from your local bookstore or from the website.
See: www.environmentaldefence.ca

Environmental Defence has undertaken a chemical body burden project called **Toxic Nation** in which levels of chemicals were measured in people across Canada. The results are available on their website.
See: www.toxicnation.ca



International chemical body burden studies are reported by an organization called **Coming Clean**. Their website provides background information and ideas for community organizing. See: www.chemicalbodyburden.org

Plastic Free Bottles, a supplier of stainless steel and BPA-free bottles, provides a handy plastics guide for you to print and hang on your refrigerator. See: www.plasticfreebottles.com

Toxic Trespass is the name of a video produced by Canadian filmmakers about children's health and the environment. It is a "must see." The website provides useful information, such as a glossary of environmental terms, as well as links to other relevant websites. See: www.toxictrespass.com

Toxins abound in much of our fresh water fish. The **Ontario Ministry of the Environment** provides the downloadable *Guide to Eating Ontario Sport Fish*. Unfortunately, it can be quite complicated to use. Generally, the recommendation is that pregnant women and young children should limit or avoid fish caught in many of the province's sport fishing areas. All of us need to limit the amount of fish we eat and to choose the fish we do eat judiciously (in particular, avoid large fish and those caught in the most highly polluted areas). See: www.ene.gov.on.ca/en/water/fishguide

Environment Canada provides a list of fish contaminated with mercury. Follow the links from the website. See: www.ec.gc.ca/mercury/

The **Environmental Protection Agency (EPA)** also provides a guide to fish contamination in the U.S. lakes and adjacent oceans. See: www.epa.gov/waterscience/fish

There are several websites that provide information about the safety of ocean fish. **Sea Choice** provides access to the downloadable, *Canada's Seafood Guide*. See: www.seachoice.org

The **Environmental Health Association of Nova Scotia** provides an online *Guide to Less Toxic Products* to provide information about potential health risks of commonly used products and enables you to find which products are the safest. See: www.lesstoxicguide.ca

Moms Rising is an organization dedicated to safer children's toys. Along with **Healthytoys.org**, they provide access to an online database with the test results for over 1,500 toys, which were tested for lead, cadmium, chlorine, arsenic, bromine, mercury, tin, antimony, and chromium. See: www.momsrising.org/notoxic toys
And: www.healthytoys.org

Pollution Watch provides searchable access to the National Pollutant Release Inventory (NPRI), a government maintained database that contains reports of industrial air, water, and land emissions and transfers of such pollutants as toxins and greenhouse gases. You can enter your address to see which industries in your area are the worst polluters and how much of each pollutant they are emitting. See: www.pollutionwatch.org

The **CAW Windsor Regional Environment Council** provides environmental support and information for its members and the general public. See: www.cawwrec.org

The **Polaris Institute** provides information about a wide range of environmental and economic issues, including the health and environmental impacts of the Alberta Tar Sands. See: www.polarisinstitute.org

Founded in 1985, the **Council of Canadians** is Canada's largest citizens' organization, with members and chapters across the country. It provides information and conducts campaigns on issues of fair trade, clean water, energy security, public health care, and others. See: www.canadians.org

Windsor Occupational Health Information Service provides access to information about workplace hazards and prevention. See: www.wohis.org