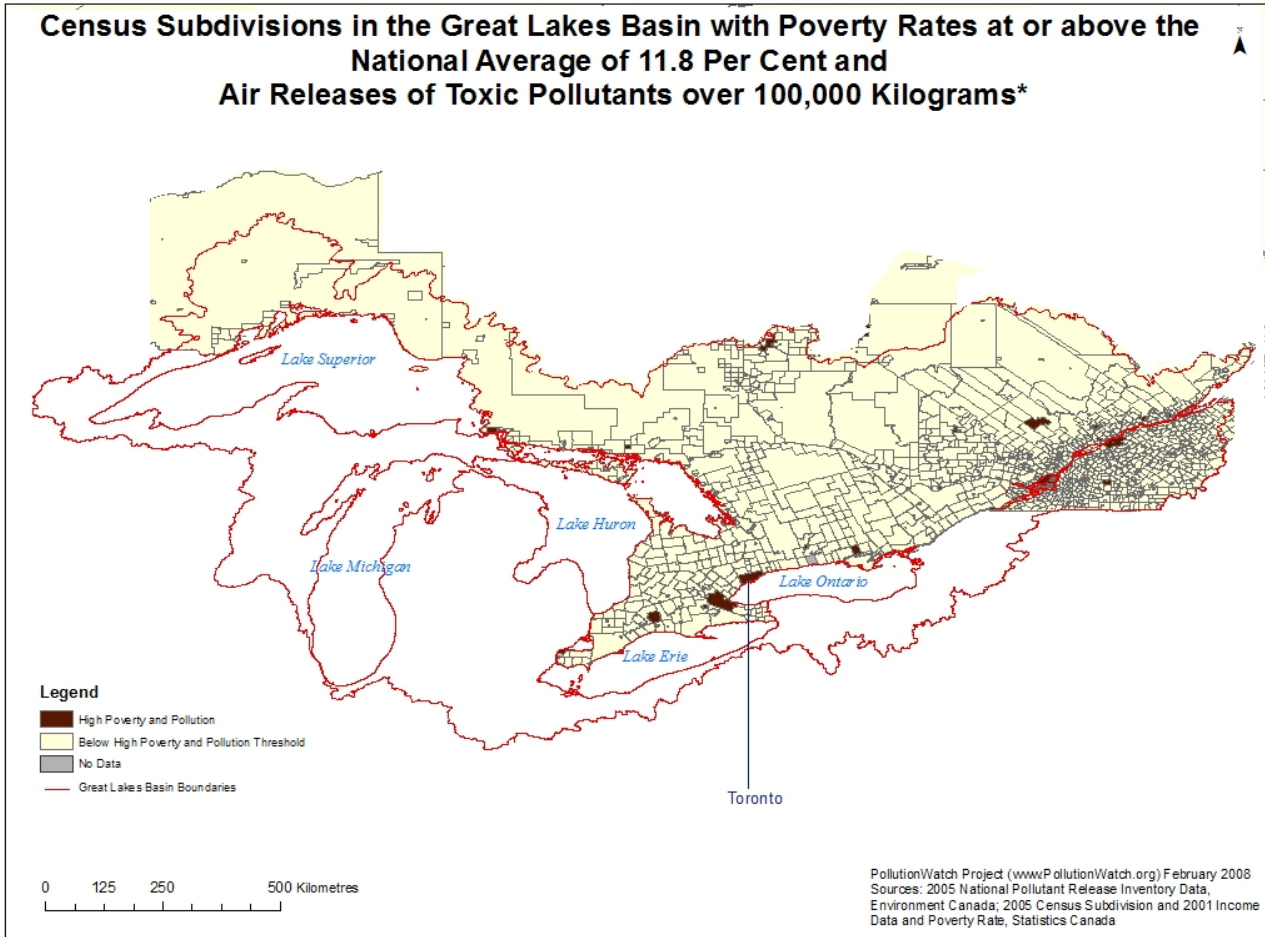


PollutionWatch Fact Sheet

An examination of pollution and poverty in the City of Toronto

POVERTY AND POLLUTION MAP



* From industrial sources reporting toxic air pollutants to the National Pollutant Release Inventory; national poverty rate based on economic families

November 2008

Introduction

PollutionWatch.org, run by the Canadian Environmental Law Association (www.cela.ca) and Environmental Defence (www.environmentaldefence.ca), is an innovative web site that allows individuals to track pollution from industrial facilities in their communities and to compare pollution levels of facilities across Canada. PollutionWatch allows people to see the amount of pollutants released over time and see if these pollutants are considered carcinogens, reproductive toxins, or are associated with other adverse environmental and health effects.

Under PollutionWatch, several reports have been published revealing the continued high pollution levels in the Great Lakes. In response to the pollution burdens experienced in the Great Lakes over the past decades, the governments of Canada and United States, both responsible for protecting and restoring the Great Lakes, initiated a number of programs and actions aimed at reducing the pollution. Exposure to pollution in the Great Lakes continues to affect the environment and the health of people living in the region, despite these efforts. Through PollutionWatch, and other evidence gathered on toxic substances, it is clear that the challenges posed by toxic pollution differ across the basin. Not all communities experience the same pollution burden, nor do all communities have the same resources, income, or ability to advocate for effective action to address these pollution burdens.

In this study, the PollutionWatch partners set out to determine pollution releases and poverty rates in Canada in communities in the Great Lakes basin and in neighbourhoods in the City of Toronto. Using one measure of pollution – air releases as reported to the federal National Pollutant Release Inventory (NPRI)– and one measure of socio-economic status – income, as reported by Statistics Canada,– this study:

- 1) locates the areas in the Great Lakes basin with the largest releases of air pollutants from industrial facilities reporting to the NPRI;
- 2) locates the areas in the Great Lakes basin with the highest levels of poverty;
- 3) explores the relationship between pollution and poverty in the Great Lakes basin; and,
- 4) locates neighbourhoods in the City of Toronto that have large releases of air pollutants, neighbourhoods with high rates of poverty, and neighbourhoods with both challenges.

This factsheet highlights findings for the City of Toronto, which are part of the larger study titled, *An Examination of Pollution and Poverty in the Great Lakes Basin*. This full technical report provides background information on recent Canadian studies and dialogue addressing social determinants of health, the relationship between pollution and income, the project methodology and the complete findings of the report. The full technical report outlines some important limitations of the pollution and poverty data, which apply to this fact sheet. To obtain a copy of the full study, see www.PollutionWatch.org.

City of Toronto

Many researchers looking at relationships between pollution and poverty have found more connections at local geographic levels such as neighbourhoods and city blocks (Lynch *et al.*, 1998; Ke, 2007; Mehdipanah, 2006). This is often due to the highly localized patterns of poverty

which may be lost when larger geographic levels are analyzed. Toronto is well suited to analysis of poverty and pollution at smaller geographic levels – census tract and neighbourhood levels. Toronto has a large number of NPRI facilities, high and localized poverty rates, a large number of census tracts, a wealth of data available from Statistics Canada and the ability to draw upon previous poverty work by the City of Toronto, United Way Toronto, Canadian Council on Social Development and pollution work from the Toronto Environmental Alliance.

Of particular significance is the work of the United Way Toronto and Canadian Council on Social Development through its 2004 report, *Poverty by Postal Code*, which studied the geographic concentration of family poverty in Toronto neighbourhoods and found significant shifts over a period of 20 years. This report documented a rapid increase in the number of higher poverty neighbourhoods in Toronto between 1981 and 2001 (United Way Toronto and Canadian Council on Social Development, 2004). Given the important roles that neighbourhoods play in contributing to the overall fulfillment of social, recreational and service needs in a community, the impact of increased poverty in these neighbourhoods was of particular interest for this PollutionWatch study.

Air quality, particularly from common air pollutants (PM_{2.5} and PM₁₀, NO_x, SO₂, CO and ground level ozone) and its contribution to cardiorespiratory illnesses has been a focus for Toronto Public Health. Approximately, 1,700 premature deaths and 6,000 hospitalizations per year in Toronto can be attributed to poor air quality (Toronto Public Health, 2004).

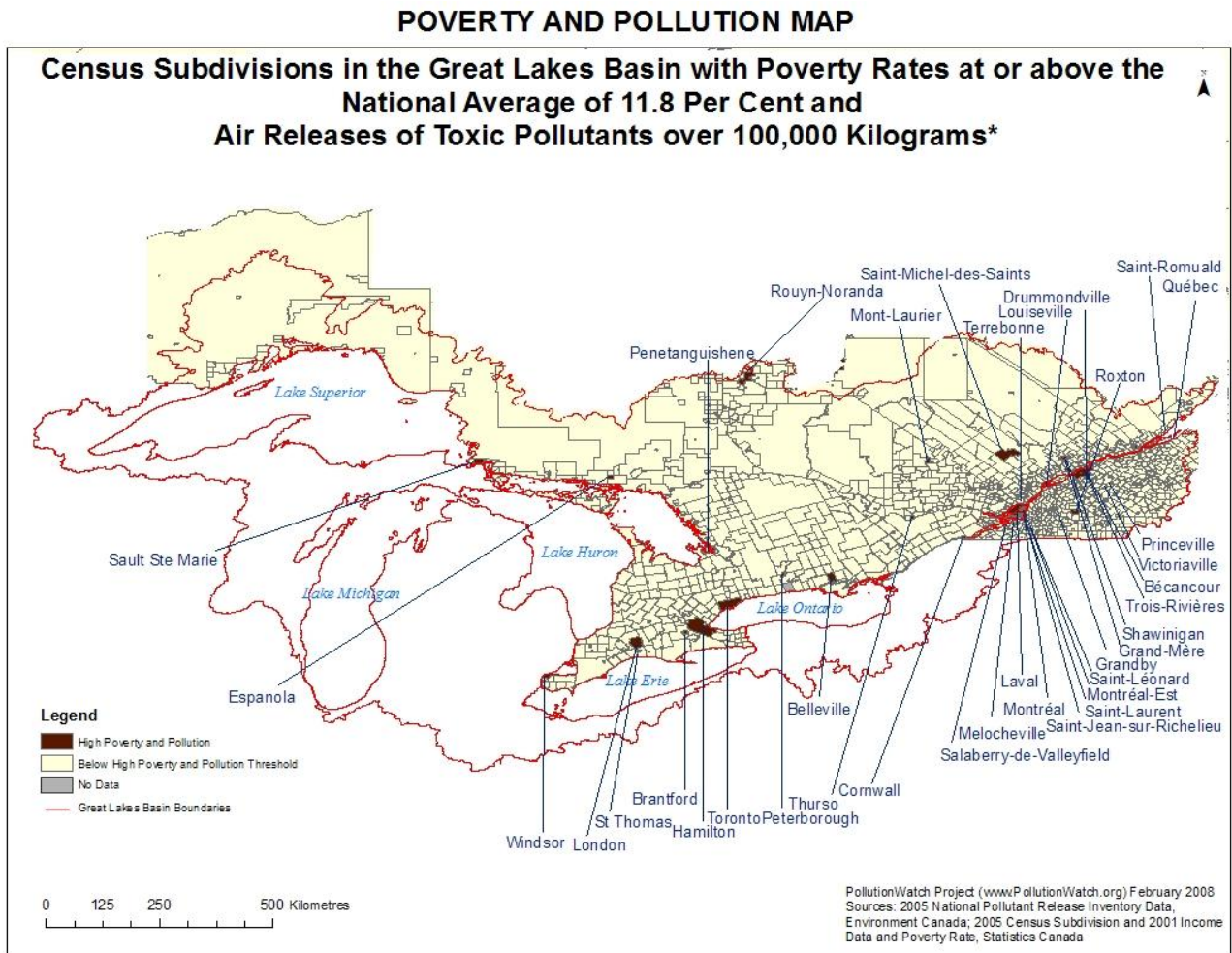
1. Pollution Releases in the City of Toronto

Looking first at Toronto in the Great Lakes basin, the study finds:

- NPRI facilities in Toronto released 2.8 million kilograms of toxic pollutants in 2005, ranking 5th of all census subdivisions in the Canadian Great Lakes basin
- NPRI facilities in Toronto released an additional 13.2 million kilograms of criteria air contaminants in 2005
- Toronto was identified as one of 37 census subdivisions in the Great Lakes basin that had high levels of toxic air releases in 2005 and high poverty rates in 2001 (see Figure 1); and
- Toronto was also one of the 27 census subdivision areas in the Great Lakes basin that had high levels of combined air releases and high poverty rates.

For more details on the findings of pollution and income in census subdivisions in the Great Lakes, visit www.PollutionWatch.org for the Factsheet on the Great Lakes basin or the full technical report, *An Examination of Pollution and Poverty in the Great Lakes Basin*.

Figure 1: Releases of toxic air pollutants from NPRI facilities in 2005 and incidence of poverty in 2001 in the Great Lakes basin



* From industrial sources reporting toxic air pollutants to the National Pollutant Release Inventory; national poverty rate based on economic families

To analyze pollution and poverty within the Toronto census subdivision, poverty rates and air pollution amounts were mapped at the census tract level in Toronto and also by neighbourhoods, which are groups of census tracts. (Census Tracts are small urban or rural neighbourhood-like communities in Canada’s Census Metropolitan Areas and some Census Agglomerations. The population in a Census Tract ranges from 2,500 to 8,000, averaging 4,000 in size, except for census tracts in business districts. Neighbourhood boundaries developed by the City of Toronto using a number of criteria usually have a minimum population of 7,000 to 10,000).

The first important picture that emerges when reviewing Toronto is that pollution releases from NPRI facilities are concentrated in a relatively few census tracts. It is important to note that air releases reported by NPRI facilities can cross over neighbourhood and census tract boundaries. Approximately 55 of the 519 (11%) census tracts in Toronto have NPRI facilities. Most of the census tracts (89%) in Toronto, therefore, do not have facilities that report to the NPRI. This does not mean that there are no pollution sources or no pollution in these census tracts, as not all facilities or sources of pollution are required to report to the NPRI. The City of Toronto’s

proposed Environmental Reporting, Disclosure and Innovation Program would begin to provide additional information on pollution sources by collecting pollution release information from smaller and medium sized facilities not presently captured by the NPRI. This would be a major advancement in our knowledge of releases of pollutants in Toronto, and would provide new opportunities and tools for facilities to learn and adopt new methods of pollution prevention.

The total amount of toxic air pollutants reported from NPRI facilities in Toronto for 2005 was 2,819,466 kg. The total amount of criteria air contaminants reported released was 13,205,592 kg and total combined air pollutants (combined criteria air contaminants and toxic pollutants) was 7,134,465 kg in 2005 (see Table 1). The total for combined air pollutants is lower than criteria air contaminants alone because Toronto has many facilities which release a large amount of volatile organic compounds.¹ The total for combined air pollutants, therefore, is often an underestimation of the pollutant releases to air.

Table 1: Releases of air pollutants from NPRI facilities in Toronto in 2005 (kg)

	Type of air release		
	Toxics	CACs	Combined
Total number of census tracts in Toronto that report to NPRI	55	64	73
Total number of facilities reporting to NPRI	150	156	197
Total amount reported in Toronto in 2005 (kg)	2,819,466	13,205,592	7,134,465

NOTE: the combined air pollutants total does not include the group of volatile organic compounds (VOCs) reported as part of Criteria Air Contaminants. This is to avoid double counting of individual VOCs also reported as toxic pollutants.

¹ See full study for detailed methodology. VOCs reported as a group of substances under criteria air contaminants are not added to the total combined air releases to avoid double counting. Some individual VOCs are reported as toxic pollutants.

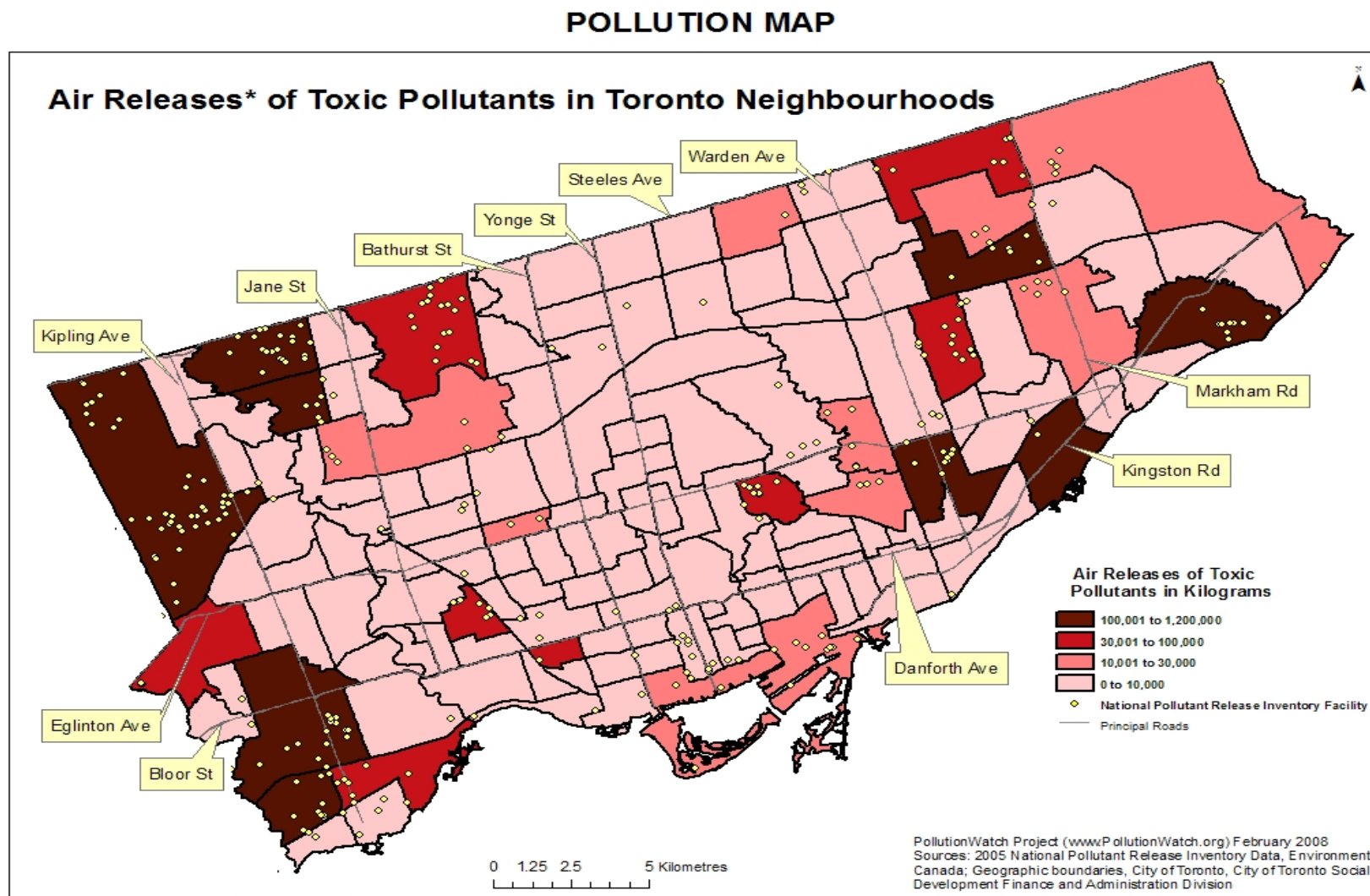
The releases of toxic pollutants from NPRI facilities are concentrated in 15 census tracts in Toronto, which account for 87% of the releases to air. Many of these census tracts form part of the same neighbourhood (see Table 2).

Table 2: Top 15 census tracts in Toronto with the highest amounts of air releases of toxic air pollutants in 2005 (kg)

Name of Neighbourhood containing Census Tract	Census Tract Number	Poverty Rate of Census Tract (%)	Air Releases of Toxic Air Pollutants in 2005 (kg)	Number of NPRI Facilities
Alderwood	0211.00	6.4	279,825	10
Humbermede	0313.00	16.0	275,205	6
Humber summit	0315.03	17.9	272,215	1
Humber summit	0315.01	15.8	259,460	1
West Humber	0247.01	16.4	249,472	2
West Hill	0360.00	12.8	182,571	1
Cliffcrest	0335.00	21.2	158,720	2
Clairlea-Birchmont	0347.00	12.5	124,266	3
Clairlea-Birchmont	0348.00	11.2	107,084	1
Agincourt-Malvern	0377.02	15.4	105,965	1
Islington-City Centre	0214.00	6.7	100,040	1
York University Heights	0311.06	39.5	98,624	3
Milliken	0378.19	17.9	91,197	1
Eringate	0236.02	7.1	78,831	1
Junction Area	0106.00	27.3	67,574	1
Total - top 15			2,451,049	35
Total all census tracts in Toronto			2,819,466	292
Top 15 as % of all Toronto			86.9%	12.0%

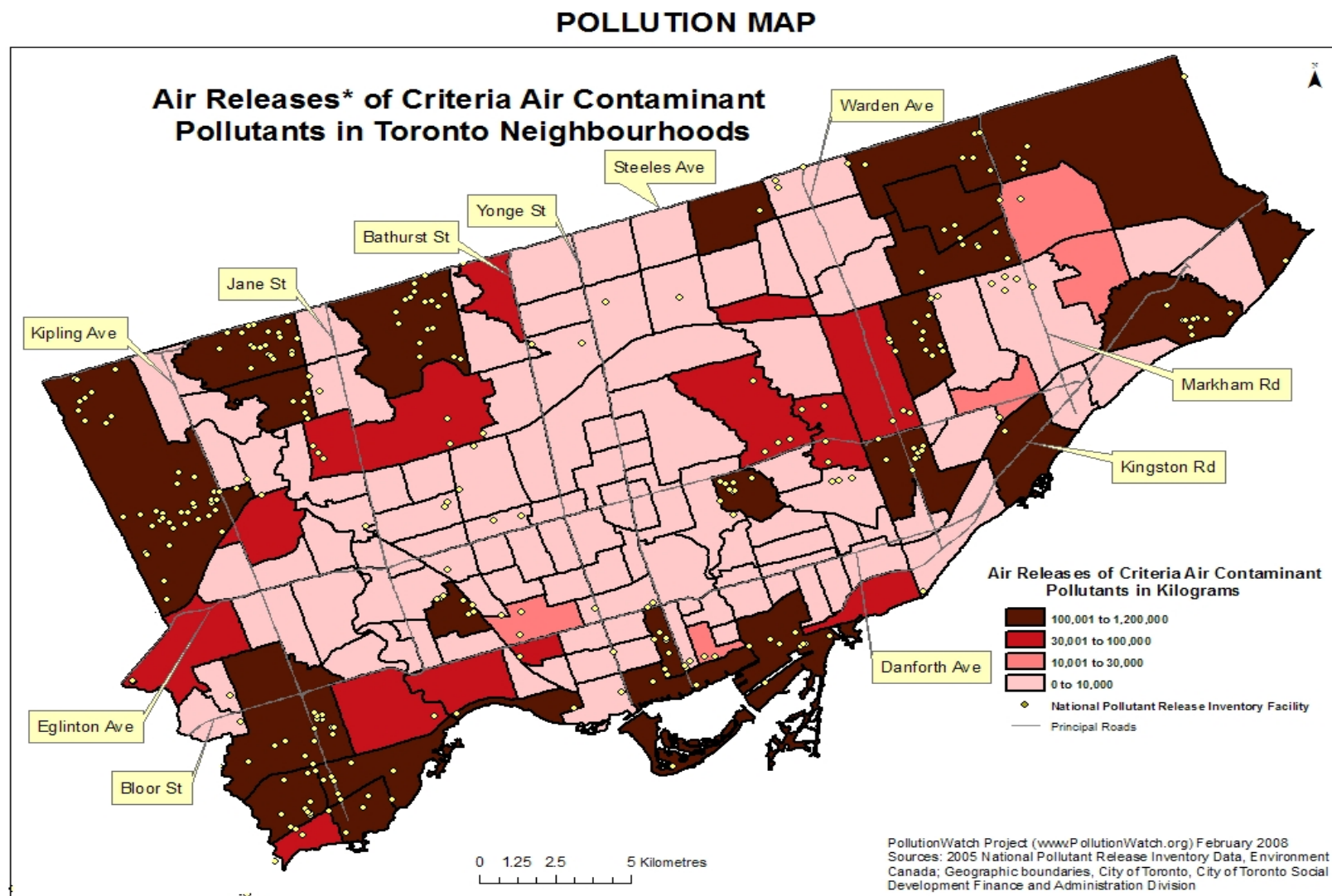
The map shows a “U” shaped pattern with ‘highest’ and ‘high’ releases in neighbourhoods located in the north west, down through the western boundary of Toronto, across the core and then continuing through some neighbourhoods in the north east (see Figure 2). The same “U” shaped pattern is also evident in the map of releases of criteria air contaminants (see Figure 3) and of combined air pollutants (see Figure 4).

Figure 2: Air releases of toxic pollutants (kg) from NPRI facilities in neighbourhoods in Toronto in 2005



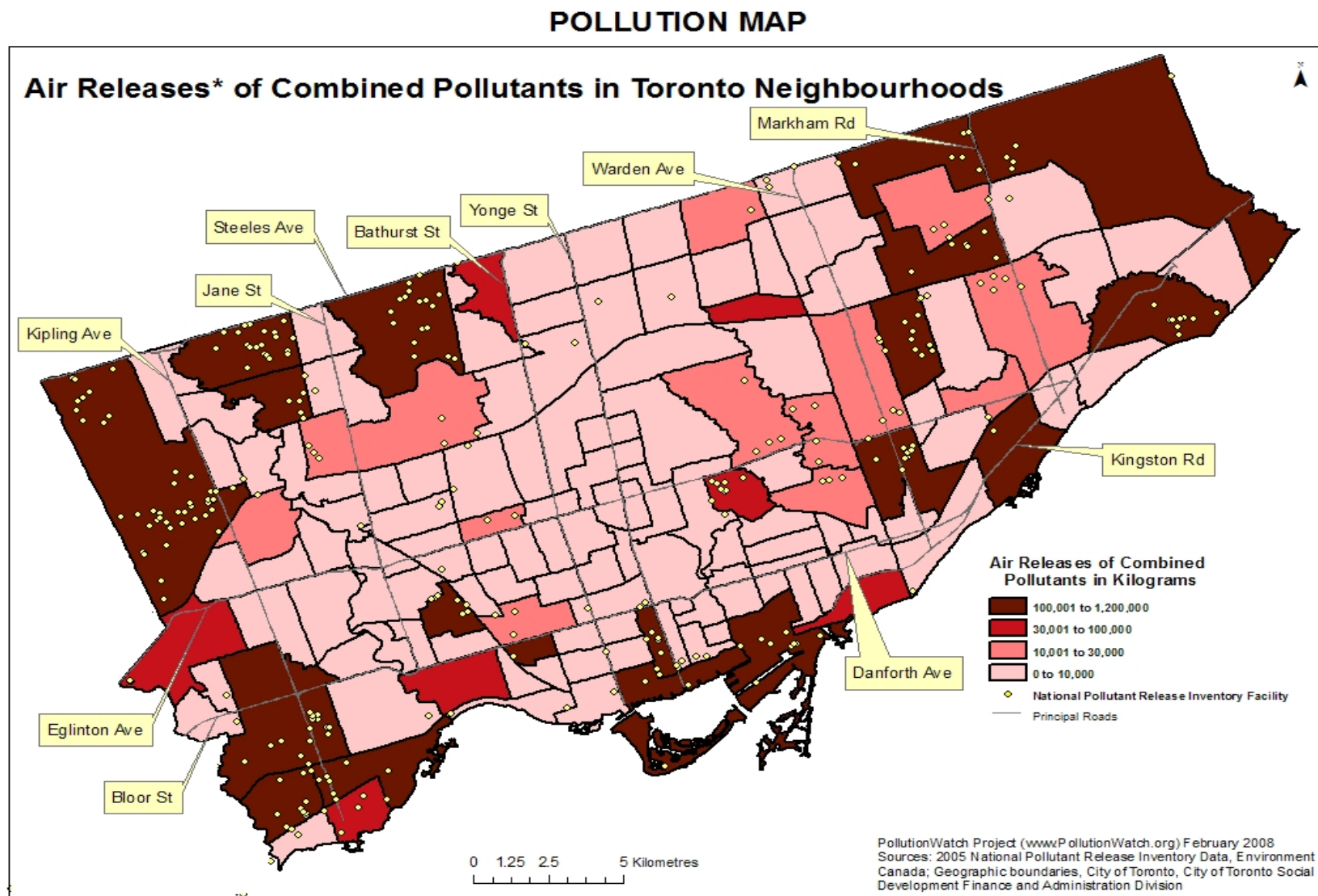
* From industrial sources reporting toxic air pollutants to the National Pollutant Release Inventory

Figure 3: Air releases of criteria air contaminants (kg) from NPRI facilities in neighbourhoods in Toronto in 2005



* From industrial sources reporting criteria air contaminant pollutants to the National Pollutant Release Inventory

Figure 4: Air releases of combined air pollutants (kg) from NPRI facilities in neighbourhoods in Toronto in 2005.



* From industrial sources reporting combined (toxics and criteria air contaminants) air pollutants to the National Pollutant Release Inventory

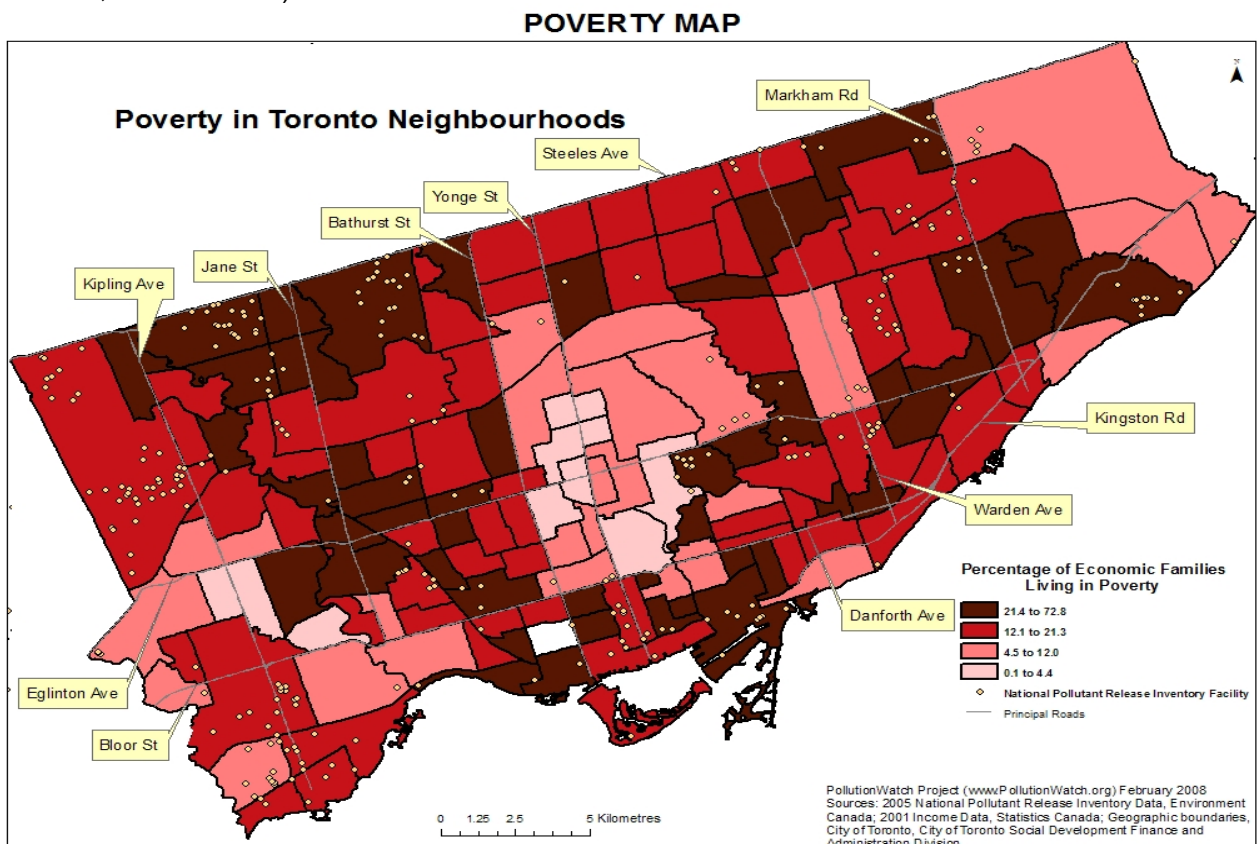
2. Incidences of Low Income in the City of Toronto

This study uses a commonly accepted measure of poverty known as the number of people with income below a “Low Income Cutoff” (“LICO” or “poverty lines”). According to Statistics Canada, a family of two living in Toronto would be considered below the LICO if their total income was below \$22,964 (year 2000 dollars, before tax), and social groups would consider these families “low income.” A family of three is considered low income if their income is below \$28,560. For a family of four, the low income cut off is \$34,572. A family of five would be considered low income with an income of \$38,646. The national average poverty rate was 11.8% (total income for economic families, before tax, 2001 Census). For a discussion on methods to define poverty, please see the full technical report at www.PollutionWatch.org

At the census subdivision level, the City of the Toronto has a poverty rate of 19.4%, which is above the national average of 11.8%.

At the census tract level, the income data showing people living in poverty in Toronto generally follow the same “U” shaped pattern as the “high” pollution data, with the addition of areas in the north. Previous reports on income and health in Toronto have described a core of wealthier urban neighbourhoods surrounded by poorer neighbourhoods (Toronto City Staff, 2008). Based on Figure 5 the highest percentage of economic families living in poverty (from 21.4% to 72.8%) are the darkest regions, while the lowest percentage of economic families living in poverty (from 0.1% to 4.4%) are the lightest shades.

Figure 5: Incidence of low income in neighbourhoods in Toronto (based on economic families before tax, 2001 census)

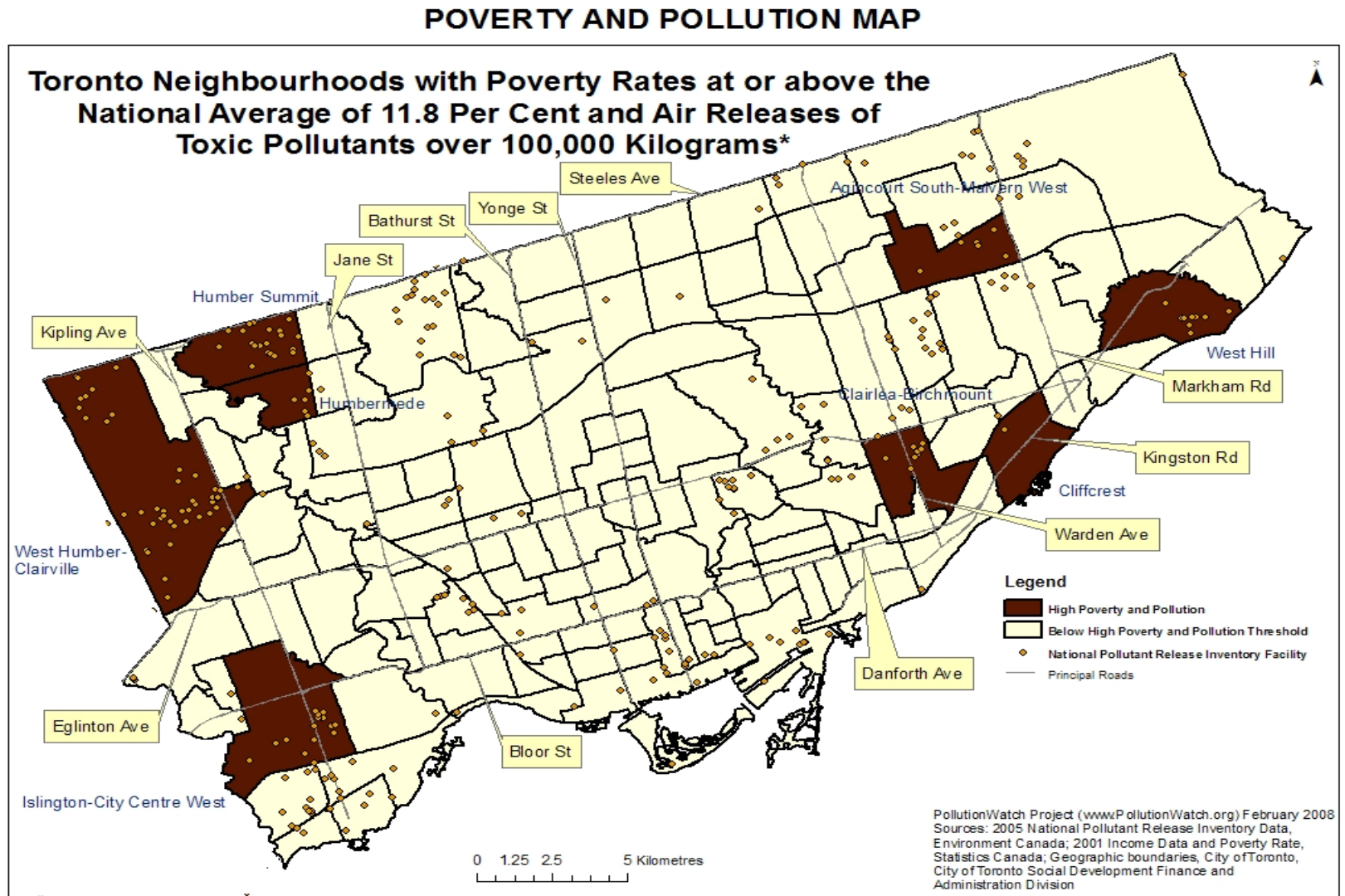


3. Pollution and Poverty for the City of Toronto

The pollution and poverty maps identify seven Toronto neighbourhoods that have high releases of toxic pollutants and poverty rates above the national average (11.8%), and 17 neighbourhoods that have high releases of combined air pollutants and poverty rates above the national average (see Figures 6 and 8). These Toronto neighbourhoods may be facing a double challenge: higher releases of pollutants from NPRI facilities and higher poverty rates.

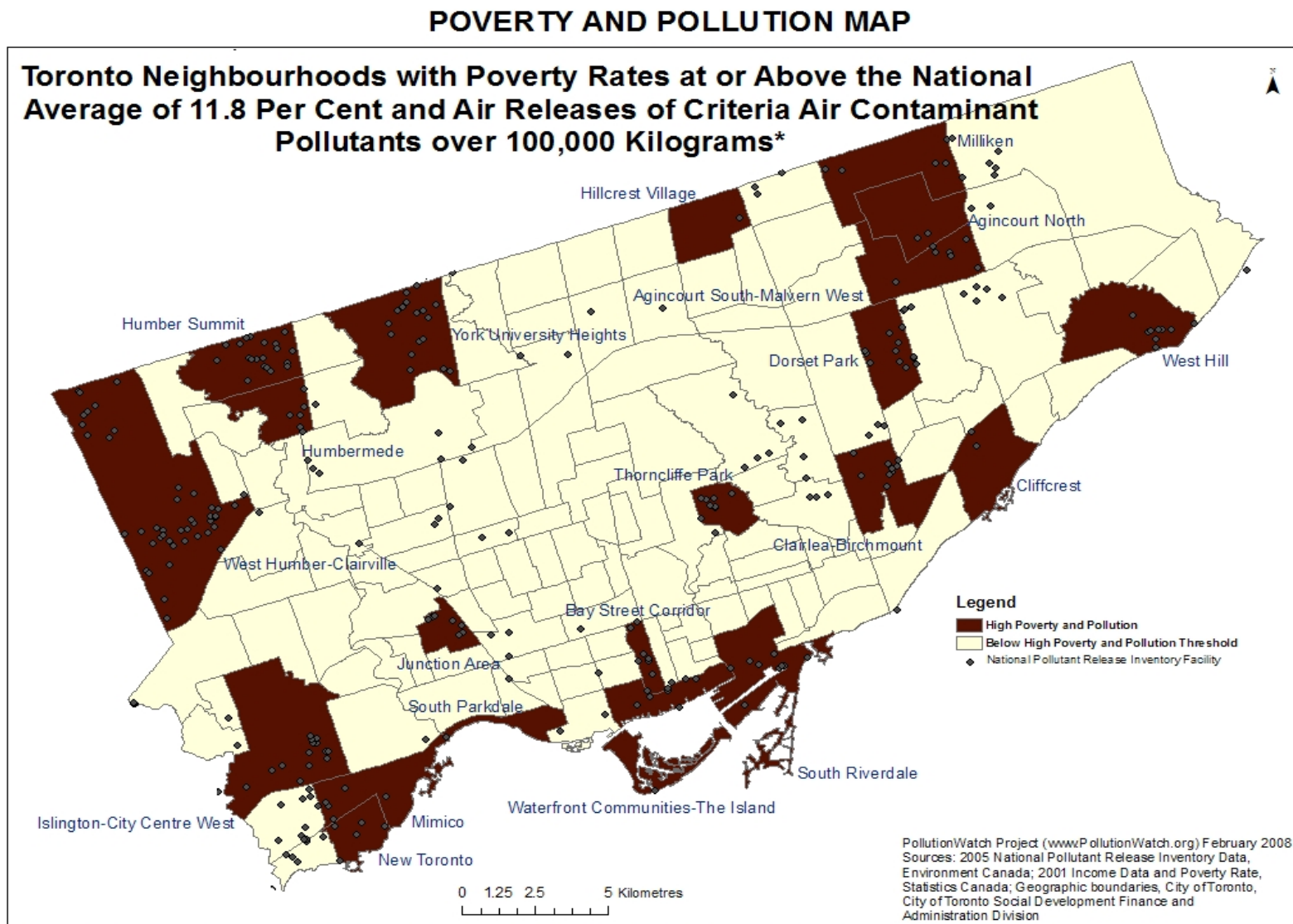
Many of these neighbourhoods have already been identified as priority areas through the Toronto Strong Neighbourhoods Strategy, which identifies areas to be strengthened through targeted investments in services and facilities (Toronto Staff Report, page 7).

Figure 6: Releases of toxic air pollutants from NPRI facilities in 2005 and incidence of poverty in Toronto



* From industrial sources reporting toxic air pollutants to the National Pollutant Release Inventory; national poverty rate based on economic families

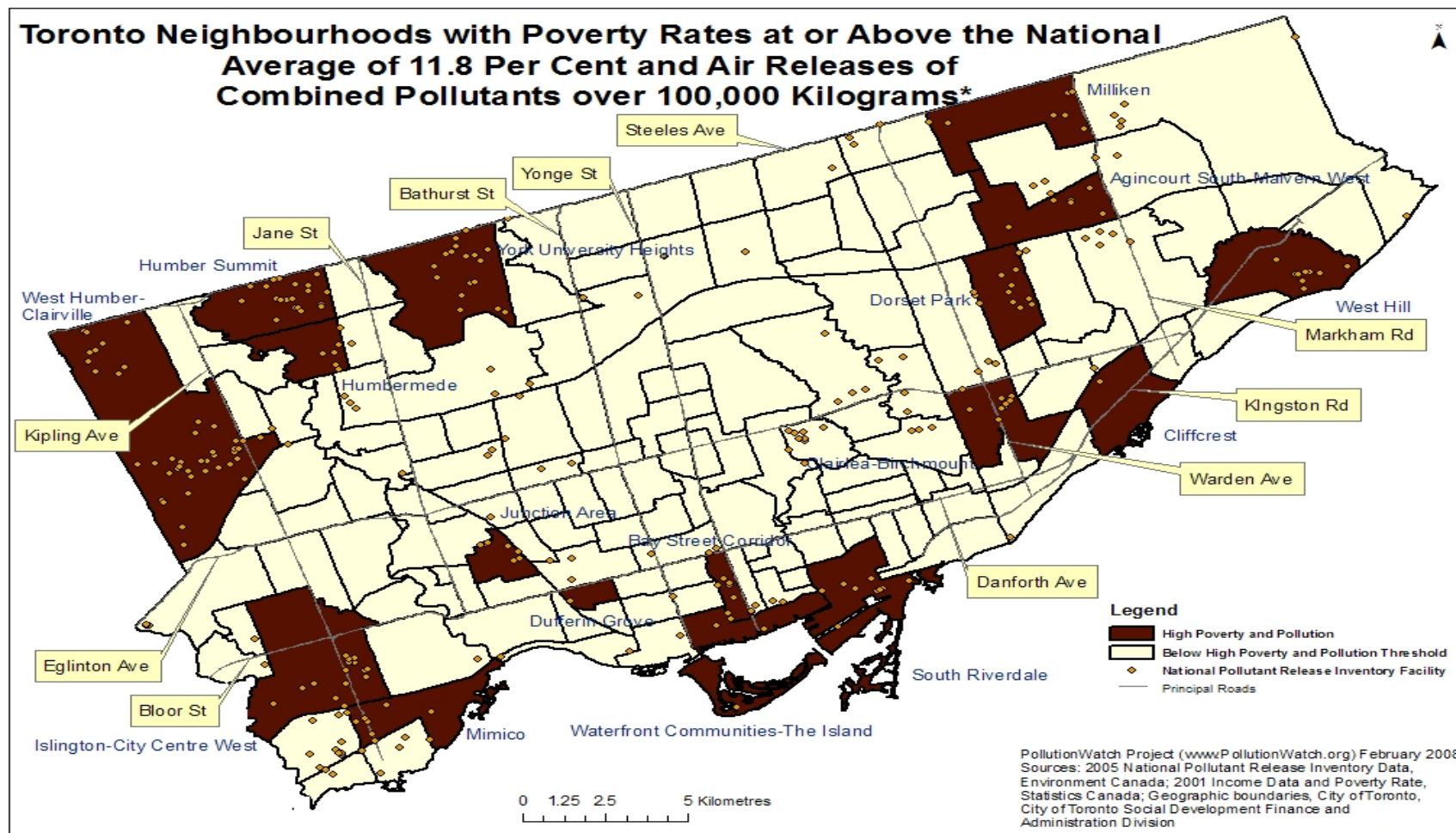
Figure 7: Releases of criteria air contaminants from NPRI facilities in 2005 and incidence of poverty in Toronto



* From industrial sources reporting criteria air contaminant pollutants to the National Pollutant Release Inventory; national poverty rate based on economic families

Figure 8: Releases of combined air pollutants from NPRI facilities in 2005 and incidence of poverty in Toronto

POVERTY AND POLLUTION MAP



* From industrial sources reporting combined (toxics and criteria air contaminants) air pollutants to the National Pollutant Release Inventory; national poverty rate based on economic families

Exploring the relationship between pollution and poverty based on the census tract and neighbourhood levels in Toronto, the study found:

- Similar to the Great Lakes basin as a whole, the releases of air pollutants from industrial facilities and poverty rates vary across Toronto. Some census tracts in the City of Toronto with high poverty have no NPRI facilities, and some census tracts with low poverty have no NPRI facilities. Some areas in Toronto clearly face a double challenge: higher air releases from reporting facilities and higher poverty rates.
- 17 neighbourhoods in Toronto have high emissions of combined air releases, as well as poverty rates above the national average. Many of these neighbourhoods have already been identified as priority areas through the Toronto Strong Neighbourhoods Strategy, released in June 2005.

The following section outlines a number of measures that the PollutionWatch partners view as essential components in reducing poverty and pollution levels in our communities. In addition, the results of the study demonstrate that the impact of pollution should be considered carefully when developing poverty reduction strategies.

Findings

This study finds:

1) High pollution releases in Toronto

Industrial NPRI facilities in Toronto in 2005 released 2,819,266 kg of toxic air pollutants, and an additional 13,205,592 kilograms of criteria air contaminants. Toronto ranked fifth among census subdivisions in the Great Lakes basin for air releases of toxic pollutants.

2) Localized concentrations of NPRI facilities

NPRI facilities were localized in just 11% of the over 500 census tracts in the City of Toronto. Since NPRI reporting captures only larger industrial facilities, many smaller industrial facilities and other facilities are not included in this total. The proposed City of Toronto Environmental Monitoring, Disclosure and Innovation Program would help to identify releases from smaller and medium sized businesses.

3) Poverty rates vary across the City of Toronto

As documented by a number of studies, poverty rates vary from one census tract to another across the City of Toronto. The income data showing people living in poverty in Toronto generally follow the same “U” shaped pattern as the “high” pollution data, with the addition of areas in the north.

4) Specific neighbourhoods in the City of Toronto where high pollution releases and high poverty rates collide

The Toronto census subdivision was identified as one of 27 census subdivisions in the Great Lakes basin that experiences high air toxic pollutant levels and high poverty rates. Within

Toronto, there are 17 neighbourhoods where high release of combined air pollutants and high poverty rates collide. For people living in these communities this may create a double burden.

For a complete list of findings for the Great Lakes basin, visit www.PollutionWatch.org.

Recommendations

As this study demonstrates, there are still large amounts of pollutants being released from industrial facilities, and still areas with high poverty rates in Toronto. For some neighbourhoods, these two challenges collide.

Governments, agencies and public interest non-governmental organizations including health, environment and social justice/anti-poverty organizations, need to take extra care in areas that are twice challenged: once by poverty and once by pollution. Within these areas, we must also pay attention to people living with a third challenge - those who are part of vulnerable groups such as children, seniors, or immune suppressed.

Based on the report, the PollutionWatch partners recommend that the City of Toronto should pass the proposed Environmental Reporting, Disclosure and Innovation Program, allowing for better tracking of pollutants in Toronto's neighbourhoods, improved pollution prevention assistance for businesses and fostering process innovation. Other municipalities in the Great Lakes basin should consider similar environmental reporting and disclosure programs for their communities.

In addition, the PollutionWatch partners recommend that in all communities, but especially in those communities twice challenged by pollution and poverty, municipal governments work with local agencies and the community to:

- take account of the sources and nature of pollution in the community;
- create and communicate a “pollution map” of the community;
- take account of environmental equity considerations in community planning, including siting of industrial facilities;
- engage with and develop strategies to reduce and prevent pollution from all sources: industrial facilities, mobile and other sources;
- require pollution prevention planning for industrial sources within the community;
- continue to monitor the community and report on indicators of mental, physical and emotional health and consider ways to integrate findings with measures of local pollution; and,
- increase support for many anti-poverty measures such as school food programs, literacy support, community centre programs, child care programs and supportive housing in ways that would help to reduce the impacts of the pollution burden.

For the complete list of recommendations to the full technical report, An Examination of Pollution and Poverty, visit www.PollutionWatch.org.

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About PollutionWatch

About PollutionWatch (www.PollutionWatch.org) is a collaborative project of Environmental Defence and the Canadian Environmental Law Association. The web site tracks releases and transfers of pollutants across Canada based on data collected by Environment Canada through the National Pollutant Release Inventory (NPRI) and emissions of greenhouse gases based on the federal government's mandatory Greenhouse Gas Emissions Reporting Program. NPRI and the Greenhouse Gas Emissions Reporting Program do not include data from all pollutants or sources. Visitors to the PollutionWatch web site can identify facilities in their home towns by searching by postal code or by a specific street address, access "quick lists" of the facilities reporting the largest releases and transfers of pollutants and greenhouse gases in the country, or create their own ranked lists of facilities by province, industrial sector, or corporation.

The data used in this PollutionWatch study are based on publicly available databases collected by the federal government. PollutionWatch makes no warranties or representation of any kind with respect to its contents and disclaims all such representations and warranties. Neither PollutionWatch nor any other person acting on its behalf makes any warranty, expressed or implied, or assumes any legal responsibility for the accuracy of any information or accepts liability from the use or damages from the use.

Appendices

Appendix I: Strengths and Limitations - refer to the full report available to download at www.PollutionWatch.org

Appendix II: Methodology – refer to the full report available to download at www.PollutionWatch.org

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