

HEALTHY COMMUNITIES REPORT: THE HEALTH OF THE REGION OF WATERLOO

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**Region of Waterloo Public Health
Health Determinants, Planning and Evaluation Division**



Region of Waterloo

PUBLIC HEALTH

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EXECUTIVE SUMMARY

In this report, 28 indicators from a Healthy Community framework are applied to the Region of Waterloo. There are some areas where it appears that Waterloo Region is measuring above other communities, provincial averages and national averages in terms of community health, and there are other areas where improvements could be made. The following points highlight aspects of the health of Waterloo Region:

- The quality of housing may be improving, but estimates of homelessness remain concerning
- Automobile travel remains dominant, especially in commutes to work
- A very high percentage of urban residents have access to public transit, but few use it to commute to work
- Places of worship are in close proximity to almost half of urban residents
- Food stores, especially small food retail chains and specialty shops, are within walking distance of approximately one-quarter of Waterloo Region residents.
- Violent crime is decreasing, while property crime is increasing
- The majority of people are not exposed to second-hand smoke, and the majority of workplaces restrict smoking on site
- Waterloo Region enjoys a diverse economy, but not many of the businesses are locally controlled
- Unemployment rates remain below the national average
- The majority of workers believe that they do not have a lot of freedom and say about their job
- Economic disparity (between high and low income levels) is greater than provincial and national averages
- A significant number of people have experienced some level of food insecurity
- The proportion of tenants spending more than 30% of their income on shelter is rising, and waiting lists for subsidized housing are long
- Approximately 1/3 of the management occupations in Waterloo Region are held by females; this is higher than 1996, but is below the provincial average
- Senior kindergarten students (in the Catholic Board) are rating better than the national cohort in early child development
- Approximately 50% of adults are at the lowest 2 levels of literacy; this percentage is higher than the national average
- High illiteracy rate among seniors is particularly concerning
- Almost 15% of people have self-perceived unmet health care needs
- Charitable donations are higher than other communities and the national average
- There is a high rate of recycling (of waste) in this community
- Further research is required in terms of local food products which remain in Waterloo Region
- Both infant mortality rates and low birth weight rates are lower than provincial averages

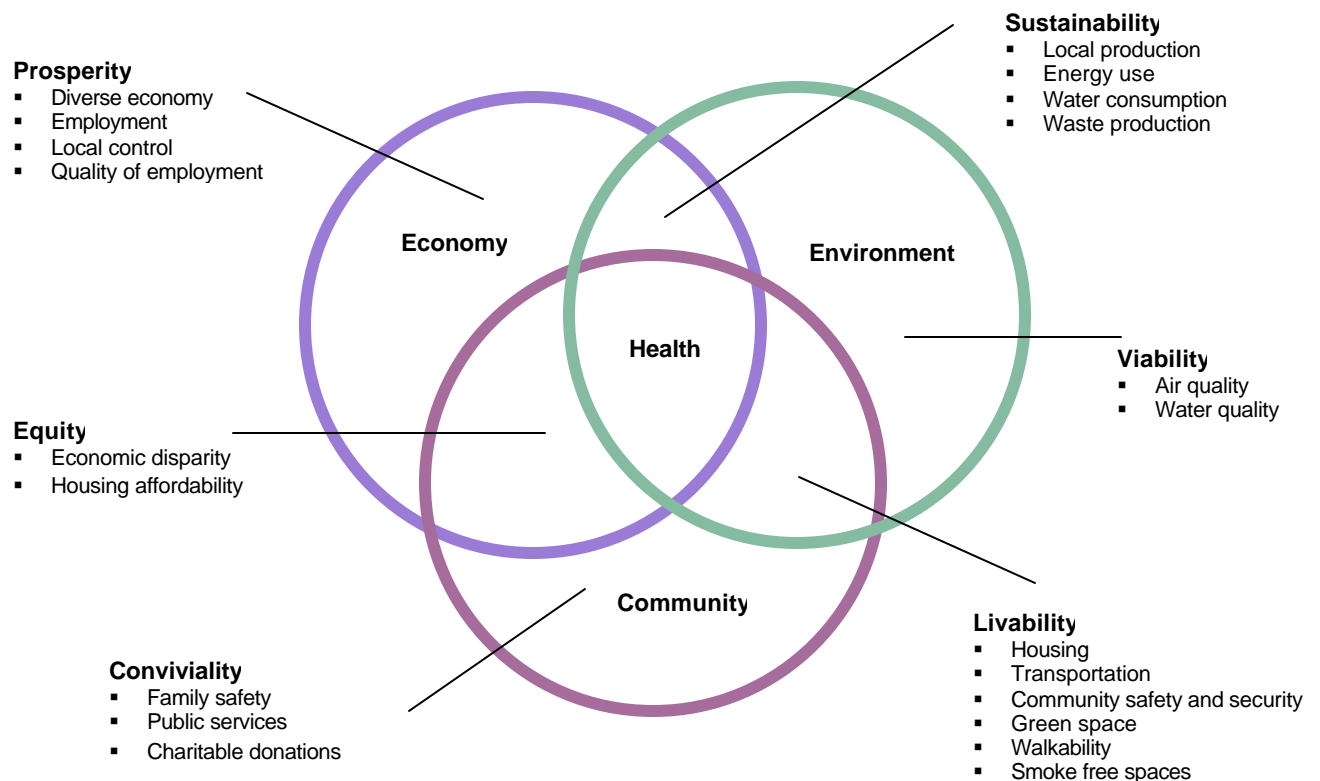
This report can be considered a baseline to which similar data can be compared in the future to further explore and define the health of Waterloo Region.

INTRODUCTION

The purpose of this document is to provide a snapshot of the quality of life in Waterloo Region. In particular, some of the indicators and measures examined are ones that the Regional Municipality of Waterloo directly provides or influences.

The structure of this report is based on Hancock, Labonte and Edwards' "Indicators That Count: Measuring Population Health at the Community Level" ¹, and includes 28 indicators of community health. This structure was chosen because it is comprehensive, the indicators are defined and suggestions for measures are provided. The view is that health encompasses a wide range of measures, including mental and social wellbeing and quality of life. In addition, these indicators measure determinants of the health of a *population* (as opposed to *individuals*), including economic and social development, social relationships and the environment. The *distribution* of health across a community is also an important factor in measuring the health of a community.

The diagram below demonstrates the interaction between the indicators and how they work together to contribute to overall health.



The community described in this report is the Region of Waterloo, which includes:

- The City of Cambridge
- The City of Kitchener
- The City of Waterloo
- Township of North Dumfries
- Township of Wellesley
- Township of Wilmot
- Township of Woolwich

Overall, this report is descriptive. Where possible, however, the Region of Waterloo is compared to either the provincial or national averages of the same indicators. Some comparisons are made over time rather than between districts. Comments about indicators and how some of them may interact within the Region of Waterloo are discussed in the conclusion section of this report.

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Indicators for Community Health in Waterloo Region

LIVABILITY

The livability indicators refer to the quality and nature of the built environment. This includes housing, roads and other transportation systems, urban design, land use and other urban infrastructure. This also encompasses the extent to which the built environment is safe - both in terms of protection from accidental injury and from crime and violence.¹

Housing

Having adequate access to adequate shelter is a determinant of health, and in Waterloo Region's climate, a prerequisite for life. To ensure good health, shelter must also meet certain standards and not be in need of major repair.¹



It is estimated that 1500-2000 people find themselves homeless in any given year in Waterloo Region. This was assessed in 1999 by communicating with shelters and community organizations that deal with the issue of homelessness, as well as attempting to calculate the number of people on the street (i.e. not accessing shelters).^{2&3}

Quality of housing in Waterloo Region seems to be improving. In 1996, 6.8% of private dwellings in Waterloo Region were considered substandard (in need of major repair).⁴ However, in the Waterloo Region Housing Needs Survey in 2002, only 5% of respondents reported a need for major repairs in their place of dwelling (10% of tenants reported this, as compared to 4% of owners).⁵

Transportation and Automobile Dominance

In most healthy community visioning workshops, people recognize that the automobile culture is unhealthy and they would exclude cars from their communities if they could. Indeed, "automobiles impose a number of significant direct and indirect health costs on communities, including motor vehicle accidents, air pollution, noise, and stress...in addition to contributing to the depletion of fossil fuels and other resources."¹



Automobile travel remains dominant in Waterloo Region. Data (1995) indicate that the car ownership is 0.56 per capita and

20.23 kms are traveled in private cars for every 1km traveled in public transit.⁶

The table below examines the mode of transportation to work as an indicator of livability.

Table 1: Modes of transportation to work in Region of Waterloo, Brampton^a and Ontario.

Method of Commute to Work	ROW: % of all commutes	Brampton: % of all commutes	Ontario: % of all commutes
Car, truck, van as driver	81%	80%	72%
Passenger in car, truck, van	8%	8%	7%
Active commute (walking, cycling)	6%	3%	7%
Public Transit	4%	9%	13%

Source: Statistics Canada (2001).⁷

Compared to other Communities in Ontario, the Region of Waterloo has a higher rate of commutes to work in a single vehicle, and a much lower rate of taking the bus to work.

Walkability

Health benefits of walkable communities include physical exercise, reduced air pollution, increased social contact and an increased sense of security.¹

The Regional Municipality of Waterloo measures how many people live within a 450 metre walk of transit service, and counts this as the 'service population' for Grand River Transit, our public transportation system. In 2001, out of a total municipal population of 406,100 (for the 3 cities),^b Grand River Transit had a service population of 362,134, or 89.2%.⁶ This means that almost 90% of the population of Cambridge, Kitchener, and Waterloo can walk to a bus route in about 5-10 minutes from their home.



Table 2 shows the number of Waterloo Region residents who live within walking distance to other amenities. This table shows both urban representation (in the cities of Kitchener, Waterloo and Cambridge) as well as total area of Waterloo Region (includes townships). Places of worship are in close proximity to almost half of urban residents. Food stores, especially small food retail chains and specialty shops, are within walking

In Waterloo Region, 89.2% of urban residents have access to public transit.

^a Brampton and Waterloo Region are both considered "medium-sized" cities with respect to transit systems.

^b The townships were not included in the population since GRT does not serve them. Year end 2002 will be completed shortly as part of the Municipal Performance Measures indicators for the province.

distance of approximately one-quarter of Waterloo Region residents.

Table 2: Number and proportion of Waterloo Region residents living within 450 metres of selected amenities in (2002).

Selected Amenities	Urban		Region of Waterloo	
	Count	%	Count	%
Place of Worship	175,822	43.8%	N/A	N/A
Community Centre	42,046	10.5%	44,779	9.9%
All Food Stores ^c	119,343	29.7%	126,706	28.0%
Grocery Stores	47,459	11.8%	48,225	10.6%
Small Food Retail Chains & Specialty Shops	97,117	24.2%	103,548	22.8%
Total Population	401,700	100%	453,160	100%

Source: Region of Waterloo Planning Department and Statistics Canada.

Green Space

Green space, especially trees, imparts environmental and health benefits, and enhances the physical, mental and social wellbeing of the community.¹

In Waterloo Region, there are 265 parks and 5 conservation areas, which represent 3065 acres of parkland.¹⁴ This means that, on average, there are approximately 300 square feet of parkland per person in Waterloo Region.^d

In addition, there are 308.9 kms of off road trails, and another 28.9 kms of pedestrian only trails within Waterloo Region.⁶



Community Safety and Security

The indicator of community safety and security is considered to have two dimensions: 1) safety from violence and crime and, 2) physical protection from accidental injury. "Maintaining effective accident prevention programs (including anti-drunk driving and similar activities) is an important way of improving population health."¹

Table 3 lists various crime rates that are indicators of community safety and security for 2000 and 2001⁸.



c Excludes convenience stores

d 1 acre = 43,560 square feet

Table 3: Crime rates in Waterloo Region in 2000 and 2001.

Crime	2000 Rates	2001 Rates
Violent Crime rate per 100 000 people^e	716	640
Level 3 assaults^f	24	19
Murder	3	4
Property crime rate per 100 000 people	3931	4010

Source: Waterloo Regional Police Service 2001 Annual Report.

Violent crime in Waterloo Region appears to be decreasing and most youth feel safe in their neighbourhoods.

In 2000, there were 20,287 (5.4%) Waterloo Region residents who stated they had been a passenger with a driver who had had too much to drink.⁹ However, the Waterloo Regional Police Service reports that in 2000, there were only 898 drivers charged with impaired driving offences. This number decreased to 719 in 2001.³⁰

In addition to crime statistics, perceptions of safety in the community can be examined. The Report on the Region of Waterloo's Youth Survey (1997) states that 83% of students (aged 7-20; N=2744) agreed that they felt safe in their neighbourhoods, 11.2% were not sure and 5.5% reported not feeling safe.¹⁰

Smoke Free Spaces

There has been a growing awareness of the health benefits of smoke-free schools, hospitals, work places and public spaces.¹

In Waterloo Region, 13.5% of people stated that they are exposed to second-hand smoke most days; 59.3% reported they were not exposed.¹¹

In the workplace, 5.6% of employees stated that there were no restrictions on smoking on site, 22.6% indicated that there were some restricted areas (and/or some designated smoking areas), and 44.6% indicated that smoking was completely restricted at their place of work.¹²



^e Includes homicide, attempted murder, assaults (level 1 to 3), sexual assault, other sexual offences, robbery, and any other crime of violence (unlawfully causing bodily harm, discharging firearms with intent, abductions, assaults against police officers, assaults against other peace or public officers and other assaults)

^f "Aggravated assault level 3" is the third level of assault. It applies to anyone who wounds, maims, disfigures or endangers the life of complainant. (Source: <http://www.statcan.ca/english/Pgdb/legal02.htm>)

PROSPERITY

The next set of indicators deals with prosperity. From a health perspective, the economic system of a community has two basic roles to play: creating wealth in such a way that it does not reduce human, social or economic capital; and creating healthy jobs, so that work becomes a source of health.¹

Diversity of the Economy

A healthy economy is a diverse economy; "the economic weakness of single-industry towns is well known."¹³

One way to measure the diversity of the economy is to look at the distribution of the labour force among the major industry categories. Table 4 presents 2001 data for the Region of Waterloo⁷.



Table 4: Workforce by Major Industry Categories in Waterloo Region and Ontario.

Industry Category	# (ROW)	% of ROW Workforce	# (Ontario)	% of ON workforce
Agriculture and other resource-based industries	4,730	1.9%	191,020	3.2%
Manufacturing and construction industries	76,400	31.4%	1,316,580	22.0%
Wholesale and retail trade	37,690	15.5%	950,730	15.9%
Finance and real estate	16,380	6.7%	401,445	6.7%
Health and education	34,925	14.4%	902,990	15.0%
Business services	37,595	15.5%	1,145,910	19.1%
Other services	35,200	14.5%	1,084,090	18.1%
Total Experienced Labour Force^g	242,925	100%	5,992,765	100%

Source: Statistics Canada, 2001.

The manufacturing sector for Waterloo Region accounts for a large percentage of the workforce (31.4%), but this Region also has one of the most diverse manufacturing sectors across Canada, with the leading industries including the following¹⁴:

^g Refers to persons 15 years and over, excluding institutional residents, who were employed or unemployed during the week (Sunday to Saturday) prior to Census Day, and who had last worked for pay or in self-employment in either 2000 or 2001.

- Transportation and Motor Vehicle
- High Technology
- Software
- Wireless Communications
- Machinery
- Electrical and Electronic
- Food Processing
- Furniture and Fixtures
- Fabricated Metal
- Business Services
- Plastic
- Chemical
- Environmental

Diversity can also be expressed in terms of the concentration of employment, or the percentage of people working for the top 5-10 employers. For Waterloo Region, the top 10 employers (including public, private and manufacturing sectors) have 26,388 employees, which is 12% of the total workforce (220,920).¹⁵

In Waterloo Region, 12% of the total workforce work for the top 10 employers. In addition, only 7% of businesses here are locally controlled.

Local Control

"Locally controlled businesses are invested in their own community, and have to live with the decisions they make that affect the lives of their neighbours and their community...local control is likely to lead to local benefit."¹

The vast majority of businesses in Waterloo Region are not locally controlled. Of the 3,322 businesses listed in the business directory from Canada's Technology Triangle^h, only 240 (or 7%) have their head offices located in Waterloo Region, and are therefore considered locally controlled.

Employment and unemployment

Physical, mental and social wellbeing can be adversely affected by unemployment. In addition, "high levels of unemployment, particularly high levels of youth unemployment, are associated with a wide range of social dysfunction."¹

As seen in tables 5 and 6, Waterloo Region's *unemployment* rates are lower than the national average, and *employment* rates here are slightly higher than the national average.¹⁶



^h Doesn't include retail (Tech Triangle doesn't track retail because it is very fluid and difficult to track). Participation in the Tech Triangle business directory is voluntary. Therefore this is not an exhaustive listing of all Region of Waterloo businesses.

Table 5: Unemployment rates for Waterloo Region and Canada based on 1998 annual averages.

Unemployment Rate ⁱ	Region of Waterloo	Canada
15-24 years	11.6	15.1
15-39 years	7.4	9.9
40+ years	4.7	6.3

Source: Statistics Canada (1998).

Waterloo Region's unemployment rates are lower than the national average.

Table 6: Employment rates for Waterloo Region and Canada based on 1998 annual averages.

Employment Rate ^j	Region of Waterloo	Canada
15-24 years	61.9	52.5
15-39 years	75.2	69.3
40+ years	54.9	51.4

Source: Statistics Canada (1998).

Long-term unemployment rates for youth (aged 15-24) in Waterloo Region decreased between 1996 and 1998, from 16.9% in 1996 to 12.2% in 1998.¹⁶

Quality of Employment

Ideally, work should be a source of health. Unsafe, unsatisfying and temporary work is itself a threat to health. This means it has to be "satisfying, provide low job strain and high job decision latitude and opportunity for workers to have high levels of control over their working conditions."¹

Decision latitude relates to how much freedom employees have in deciding how to do their job. Authority at work is the extent to which employees have a say in what happens on the job. The Canadian Community Health Survey (CCHS) combined these two measures to form a scale from 0-8, where 0 represents the minimum amount of freedom and say, and 8 represents maximum freedom and say.

In Waterloo Region, the majority of workers believe that they do not have a lot of freedom and say about their job. Seventy percent of respondents were between 0 and 3 on the scale; 18% of respondents were in the middle of the scale (4) and 12% of respondents were between 5 and 8.¹⁷



The majority (70%) of workers believe that they do not have a lot of freedom and say about their job.

ⁱ Includes only those who are "actively seeking" work.

^j Employment rate refers to the percentage of people within the age group who are employed.

EQUITY

The next set of indicators deals with equity. The benefits of economic activity in a community must be distributed in a way that is socially equitable in order to ensure the wellbeing and development of its citizens. Much work has been done in this area to show that it is not just the amount of wealth in a society, but the degree of equity within this society which determines health.¹⁸

Economic Disparity

Economic disparity refers to the income gap between the wealthiest and poorest in a community. "The greater the economic disparity, the worse the population health status".¹⁹ Measuring the distribution of both income and wealth can be important indicators of population health status. Although disparities in income and wealth are unavoidable, the extent of these disparities is a key measure.¹



For Waterloo Region, the percentage of low income families has increased. In 1996, 12.1% of economic families^k were considered families with low-income. Five years earlier in 1991, 10.0% of economic families were considered low-income.¹⁶

Statistics Canada data also indicate that, in Waterloo Region in 1996, 6.5% of families were in the lowest income quintile (annual income of less than \$14,953). In contrast, 33.1% of families that year were in the highest income quintile (annual income of more than \$69,075). The ratio of lowest to highest income quintiles is 1:5. In other words, for every family in the lowest income quintile, there are 5 families in the highest income quintile.²⁰ Even though Waterloo Region has a smaller proportion of people in the lowest income quintile, this represents a greater economic disparity than both Ontario (ratio of 1:4) and Canada (ratio of 1:3). Table 7 shows this comparison to Ontario and Canada.

For every family in the lowest income quintile in Waterloo Region, there are 5 families in the highest income quintile.

Table 7: Economic Families by Highest and Lowest Income Quintiles in Region of Waterloo, Ontario and Canada in 1996

	Lowest Quintile		Highest Quintile	
	Count	%	Count	%
ROW	7,290	6.5%	36,840	33.1%
Ontario	222,795	7.6%	984,840	33.7%
Canada	715,130	9.1%	2,186,740	27.8%

Source: Statistics Canada, 1996 Census

^k "Economic family" refers to a group of two or more persons who live in the same dwelling and are related to each other by blood, marriage, common-law or adoption.

From this table, it is evident that the Region of Waterloo has a lower percentage of people in the lowest income quintile than either the provincial or national averages. However, when the difference between the highest and lowest income quintiles is examined, the Region of Waterloo has a larger gap between the proportion of people in the highest and lowest levels.

The cost of public transportation as a percentage of minimum wage is another indicator of economic disparity. In Waterloo Region in 1996, 67% of transit riders purchased the monthly pass, or multiple tickets. This means that, for the majority of riders, the cost of an adult fare on public transit that year was \$1.40 (or less), which was 20% of minimum wage (\$6.85). In 2002, an even greater majority of transit riders (76%) paid a rate less than or equal to 20% of minimum wage for an adult fare. Waterloo Region is one of the few communities in Canada where the fee paid for transit by the majority of riders has not increased since at least 1996.⁶

For those who cannot afford a vehicle, public transit is available in Waterloo Region for 20% of minimum wage.

The level of food insecurity in a community also indicate economic disparity. *Food insecurity* exists “whenever the availability of nutritionally adequate and safe foods or the ability to acquire acceptable foods in socially acceptable ways is limited or uncertain”.²¹ According to the CCHS (2000), in Waterloo Region, 51,565 people (13.6%) had experienced some food insecurity in the past 12 months.²²

Housing Affordability

When payments for housing are too high relative to income, individuals and families tend to spend less of their overall income on food and other essentials and/or live in unsafe or unhealthy housing. An important indicator of population health and wellbeing, therefore, is housing affordability. Waiting lists for subsidized housing are also an important indicator.¹



The proportion of tenants spending more than 30% of their income on shelter is increasing in Waterloo Region. In 1996, 41.3% of tenant households spent more than 30% of their income on shelter. This was an increase from 1991, when 31.5% of tenant households spent more than 30% of their income on shelter.¹⁶ The Region of Waterloo Housing Needs Survey shows that the percent of tenants spending more than 30% of their income on shelter again increased to 43.2% in 2002.

The percentage of residents spending more than 30% of their income on shelter increased almost 10% from 1991 to 1996, and increased almost 2% more by 2002.

The Planning, Housing and Community Services Department of the Region of Waterloo maintains statistics on waiting lists for subsidized housing. Table 8 shows that the waiting lists are much longer than the numbers of those that can be accommodated in any given month²³.

Table 8: Active Applications on the Waterloo Region Coordinated Access System as of April 17/03, and Applicants Reported Housed between March 19/03 and April 17/03

	Total	Kitchener	Waterloo	Cambridge	Townships	Other ^l
Applicants	3,865	1,853	843	966	62	641
Housed	229	126	45	52	6	N/A
% Housed	5.9%	6.8%	5.3%	5.4%	9.7%	N/A

Source: Waterloo Region Coordinated Access System Statistics, Region of Waterloo

It is very difficult to compare waiting list information, between communities^m and over time. The responsibility for housing was transferred from provincial to local authorities/municipalities in the recent past. Locally, 2 housing authorities merged. Most other non-profit housing providers had to become part of the standard waiting lists, and these organizations joined sporadically throughout the last few years. Any historical data prior to 1998 would encompass only the housing authority. Furthermore, the Region has been working to update the waiting list to ensure that only *active* applicants are included.²³ Therefore a comparison of the current waiting list to past years would be misleading.

Discrimination and Exclusion

People who are discriminated against face potential health risks. When individuals face discrimination and social exclusion, it can prevent them from accessing basic prerequisites to health such as shelter, food, education, employment and health care. This would, in turn, impair their health. "Discrimination ...can have marked impacts on the mental health and social wellbeing of individuals, families and communities. These in turn can result in physical health problems."¹

One of the suggested indicators of discrimination looks at the proportion of women in positions of public or corporate leadership. In 2001, approximately 1/3 (34%) of management occupationsⁿ in Waterloo Region were held by women; this is lower than the provincial average (37%). The proportion of women in management positions in Waterloo has increased somewhat since 1996, when 31% of these positions were held by women.

In 2001, approximately 1/3 of the management occupations in Waterloo Region were held by females. This is an increase since 1996, but still remains below the provincial average.

^l People currently living outside of the Region who have applied for subsidized housing within the Region.

^m Region of Waterloo does not actively maintain any data on other communities or regions.

ⁿ Includes management occupations for all sectors. For definitions, see: <http://stds.statcan.ca/english/soc/2001/nocs01-class-search.asp?cretaria=A>

EDUCATION

The next set of indicators considers education. After meeting basic needs, the most important indicator of human development and health is education. "High levels of education are correlated with higher levels of health, longer life expectancy, smaller families and other positive outcomes."²⁴

Early Child Development

Early childhood development measures are important indicators of personal and community wellbeing. Included in these measures is the percentage of pre-school children with developmentally appropriate behaviour and skills, as well as the proportion of children entering school who meet child development norms.¹



The Waterloo Catholic District School Board (WCDSB) completed the Early Development Instrument (EDI) data collection in conjunction with the Ontario Early Years initiative to determine early child development markers and readiness to learn among senior kindergarten students. There are five different areas of early development that are measured through the EDI, and each area has a scale of 0-10 (where 10 represents the best score):

- Physical health and well-being
- Social competence
- Emotional maturity
- Language and cognitive development
- Communication skills and general knowledge

For the 2001/2002 school year, more than 1600 senior kindergarten students from the WCDSB were assessed²⁵. The age range was 4.5 to 6.7 years. Children with known special needs were excluded from the Table 9. On average, senior kindergarten children in the WCDSB are doing better than children in last year's cohort (children from communities across Canada). Of 1514 students, 378 (25.0%) had problems in at least one readiness to learn domain, and 184 (12.2%) had problems in at least two.²⁵

On average, WCDSB senior kindergarten students are rating better on the EDI than last year's national cohort.

There were 434 senior kindergarten students within the WCDSB who scored in the poorest 10% on one or more scales.

Table 9: Average scores for the Early Development Instrument for the Waterloo Catholic District School Board and in Canada

EDI Scales	Average 2001/2002 WCDSB	Average 2000/2001 Cohort ^o
Physical health and wellbeing	9.04	8.77
Social competence	8.45	8.32
Emotional maturity	8.41	8.04
Language and cognitive development	8.75	8.28
Communication and general knowledge	8.17	7.7

Source: Canadian Centre for Studies of Children at Risk, 2002

Even though the **average** scores appear high on a scale of 0-10, there are still children scoring in the poorest 10% who require assistance.

Educational Attainment and School Quality

Education levels and high school dropout rates are important measure of the health of a community. The quality of school systems (often measured by funding per student) is also a useful public service indicator.¹

Table 10 shows the breakdown in education levels of those 20 years of age and over for Waterloo Region.

Table 10: Level of education obtained in Waterloo Region and Ontario.

Level of Education	% of those in ROW aged 20+ years	% of those in ON aged 20+ years
Less than a high school graduation certificate	21.7%	19.3%
High school graduation certificate and/or some postsecondary	28.2%	27.4%
Trade certificate or diploma	1.3%	10.3%
College certificate or diploma	18.6%	19.1%
University certificate, diploma or degree	20.2%	23.8%

Source: Statistics Canada, 2001.



^o The EDI was completed for over 25,000 senior kindergarten level students in a number of communities across Canada in 200/2001.

In terms of school quality, the level of support for public education (both elementary and secondary) is a good indicator. School boards in the Waterloo Region currently receive approximately \$3500 per student in base funding. Other grants are added to this base, resulting in funding of just under \$7,000 per student.²⁶

Adult Literacy

“Functional illiteracy is a threat to health, both directly if people cannot read warning labels, follow written instructions in the home or workplace and so on, and indirectly because [they] are unlikely to get well paying jobs.”¹

Literacy is measured in 5 levels, with level 1 being the lowest, and 5 the highest. People at level 1 have daily difficulties with any printed material (eg. medication bottles, short newspaper articles). People at level 2 could read a newspaper, but would miss some words. They are usually functional in their current environment, but do not have enough literacy skills to transfer into new situations (eg. can function at current job, but would have trouble writing reports or reading a manual for new machinery). Together, these 2 levels represent the lowest levels of literacy; people at levels 1 and 2 have great difficulty coping with print, they have traditionally been described as illiterate, meaning that they lack the basic literacy skills needed in everyday life.²⁷

The International Adult Literacy Survey (1994) shows that 24% of Waterloo Region residents were at level 1 literacy; 33% were at level 2. These levels are higher than both provincial and national averages.²⁸

More recently, the Literacy Group of Waterloo Region reported that in 2001, 30% of older workers (ages 35-54) fell into the lowest level of literacy.²⁹ In addition, there were higher rates of illiteracy among seniors. Of those aged 65 and over, 54% were at level 1 literacy, and 28% were at level 2.²⁸



Rates of adult illiteracy are higher in Waterloo Region than in either Ontario or Canada.

CONVIVIALITY

The next set of indicators deals with conviviality. Conviviality is the extent to which the community has social support networks, its members live harmoniously together and participate fully in the life of their community. "The ability of people to live together reasonably harmoniously, to provide social support and to have low levels of domestic strife and abuse are important determinants of mental and social wellbeing, and to some extent physical wellbeing."¹

Family Safety and Security

One very important aspect of overall safety in a community is the level of domestic abuse and violence, as this increases the level of death, injury, stress, mental health problems and dysfunctional families¹.

In 2001, there were 766 occurrences of spousal assault (includes common-law) reported to Waterloo Regional Police Service (WRPS) in Waterloo Region.³⁰ In 692 (90%) of those cases, charges were laid^p.



Public Services

"The public sector provides a wide range of "soft" or human services...such services are presumed to be fundamental to the physical, mental and social wellbeing of a population."¹

One of the suggested indicators for measuring public services is the number of pregnant women with access to pre- and postnatal programs, or the ability to reach at least 50% of very poor, pregnant women with integrated preventive programs and perinatal care.



The Healthy Babies, Healthy Children (HBHC) program is provincially funded and operated by local public health units. The HBHC program provides screening and assessment during pregnancy, screening of newborns in hospitals, telephone calls and home visits to new mothers after discharge from the hospital, and extra assistance to "at risk" children.³¹ In 2002, there were 4947 families with a live birth in Waterloo Region. The local HBHC program screened 4000 (81%) of these families prenatally, and 4845 (98%) were screened postpartum. In addition, 341 families (or 8.5%) were assessed as high risk (indicators could include financial) and referred to home visiting.³²

^p Often, police response and intervention to a call can prevent a crime from occurring, and therefore charges would not be necessary (Source: Drazen Manojlovic, WRPS).

On a more general level, there were questions in the CCHS (2000) which asked people about their use of the health care system. Nineteen percent have not seen a medical doctor in the past year; 60% have seen a medical doctor between 1 and 5 times in the past year; 20% reported seeing a medical doctor more than 5 times. The data from this survey also showed that 14.7% of people have self-perceived unmet health care needs.³³

Charitable Donations

Commitment by individuals and organizations to their community can be indicated by their charitable donations and willingness to support those in need. This indicator should be treated with caution, however, since such donations can also indicate a community meeting needs from which the public service infrastructure has retreated. If not considered a direct link to population health status, the indicator of charitable donations can at least be considered an indicator of community participation.¹



Table 11 present the charitable donations for the Kitchener Census Metropolitan Area (CMA)^q as compared to the Hamilton-Wentworth CMA, and Canada.

Table 11: Charitable Donations, Kitchener CMA, Hamilton CMA and Canada

	Kitchener CMA (incl. Waterloo)	Hamilton- Wentworth CMA	Canada
Average Donation per Donor 1998 (\$)	1126	901	860
Per Taxfiler 1998 (\$)	353	275	222
Average Donation per Donor 1997 (\$)	1040	860	810
Per Taxfiler 1997 (\$)	330	260	210
Average Donation per Donor 1995 (\$)	810	710	650
Per Taxfiler 1995 (\$)	270	220	180

Source: FCM Quality of Life Report (2001).

Average charitable donations are higher in Waterloo Region than the national average, and also higher than a comparative region.

^q Includes Kitchener, Waterloo, Cambridge, Woolwich Township and North Dumfries Township

SUSTAINABILITY

The next set of indicators deals with sustainability. The earth's natural resources, and especially the way in which they are used and preserved, are important to human health. Depleting natural resources, polluting the environment and impairing ecosystem health (e.g. through emissions) can harm the health of future and current populations. "There is a substantial international movement to create more sustainable communities and to reduce the "ecological footprint" of communities."³⁴ The Ecological Footprint is a measure of the 'load' imposed by a given population on nature. It represents the land area necessary to sustain current levels of resource consumption and waste discharge by that population.³⁵

Energy Use

Energy use has vast health implications; carbon dioxide emissions and urban air pollution affect health.³⁶ Fossil fuel consumption makes up a substantial portion of the indicator of energy use.¹ Since approximately 33% of Waterloo Region's electricity is from fossil fuels (25% from coal, 7-8% from natural gas)³⁷, reporting electricity use in the Region is a good indicator. There are three companies that supply Waterloo Region's residents with electricity. Their 2002 data are reported in table 12.



Table 12: Hydro consumption rates for Waterloo Region in 2002

Utility	Total Billed Kilowatt Hours (Residential)	Kilowatt Hours per Capita per year	Kilowatt Hours per Household ^r per year
Waterloo North Hydro	379,150,200 kWh	3323 kWh	8972 kWh
Cambridge North Dumfries Energy+	351,255,667 kWh	2948 kWh	7960 kWh
Kitchener-Wilmot Hydro	N/A ³⁸	N/A	N/A
Average Waterloo Region Consumption rates^s	365,202,934	3136 kWh	8466 kWh

Source: Waterloo North Hydro and Cambridge North Dumfries Energy+ and Statistics Canada.³⁹

^r This column has been calculated based on the national average of 2.7 people per household from Statistics Canada (2001).

^s Based on Waterloo North Hydro and Cambridge North Dumfries Energy+ only, as data from Kitchener-Wilmot Hydro were unavailable.

To give these figures some perspective, a kilowatt hour is 1,000 watts used for one hour. For example, one 100-watt light bulb in operation for 10 hours would use one kilowatt hour of electricity (100watts x 10hours = 1000 watt hours or 1 kilowatt hour). For the average household in Waterloo Region, then, the use of 8466 kWh of energy is the equivalent of running 29 light bulbs (100W each) for 8 hours per day, every day for one year.

Water Consumption

Community residents rely on an adequate, safe supply of water, not only for human consumption but also for industrial and agricultural purposes. This supply of suitable water is essential to human health.¹



In 2002, urban residents of the Waterloo Region used approximately 430 litres (95 imperial gallons) per capita per day or 157 cubic metres (34,600 imperial gallons) per capita per year. These figures include water for domestic as well as industrial, commercial and institutional uses. When examining residential use only, each urban resident of Waterloo Region uses (on average) between 230 and 250 litres of water per day.⁴⁰

This means that on average, each resident of Waterloo Region uses enough water in a day to fill 2 bathtubs to the top. Over the course of the year, this would fill 730 bathtubs.[†]

Waste Production and Reduction

While landfills and sewage treatment help to protect public health by properly managing solid and liquid waste, the health of populations can be threatened by landfills, incinerators, hazardous water disposal plant sites, sewage and liquid industrial effluents, as well as air pollutants. Moreover, these can threaten not only the health of *local* communities, but also *global* communities. As communities reduce their production of wastes, they are contributing to a reduction in the threat to the health of their own populations “as well as the populations down-wind, down-stream or elsewhere in the world where communities are recipients of other people’s wastes.”¹



In Waterloo Region in 2001, the measurement of waste production was 0.25 tonnes per capita domestic; and 0.27 tonnes per capita industrial. Domestically, this is the equivalent of 250 kilograms of waste per resident, per year.

[†] The average bathtub holds 25 imperial gallons when filled to the top. *Source:* hermes.ecn.purdue.edu/cgi/convwqtest?fshem-1.ar.asc

Over one third (37%) of waste is recycled, composted, and/or diverted^u in Waterloo Region.⁴¹ The Federation of Canadian Municipalities Quality of Life Report also reports that Waterloo Region residents recycled 56.7 kilograms of goods in 1998, and 58.5kgs in 1999.¹⁶

Local Food Production

There are potential health implications associated with local food production, including reductions in energy used for transportation, higher levels of diversity, local control of the economy, higher levels of autonomy and more nutritious food.¹

Currently the Region of Waterloo has approximately 1,444 farms and 225,800 acres of farmland. Most of this farmland (80%) is used for crop production, and 66% of the farms are primarily involved in livestock production (higher than the provincial average of 45%).⁴²

Waterloo Region farms reported \$379.6 million in total gross farms receipts in 2000, representing 4.16% of Ontario's total.⁴²



^u Due to differing definitions of these terms, it is not possible to compare Waterloo Region's figures to other Canadian communities.

VIABILITY

This set of indicators deals with viability. The environment's air, water and soil, its cleanliness and 'green-ness' are indicators of viability.⁴³ This domain "refers to the impact of the community on its own immediate environment, as well as the impact of other communities and regional or global processes on the local community environment."¹

Air Quality

There is extensive evidence linking air quality to mortality and hospital morbidity. The health effects pyramid^v also "illustrates the significant disability and short-term morbidity which results from air pollution, as well as the economic costs of such health effects."¹

Air quality advisories act as predictors of when air quality will be particularly poor. One air quality advisory can encompass several days. *The Air Quality Index (AQI)* is an indicator of air quality, based on hourly pollutant measurements of some or all of the six most common air pollutants: sulphur dioxide, ozone, nitrogen dioxide, total reduced sulphur compounds, carbon monoxide and fine particulate matter.⁴⁴



Table 13 shows air quality advisories and indicators for the Kitchener CMA from 1998 to 2002.^{45 46}

v Expert panels of the American Thoracic Society describe the potential health effects of air pollution as occurring in a logical "pyramid" ranging from severe uncommon events (e.g., death) to mild common effects (e.g., eye, nose and throat irritation that may interfere with normal activity such as driving a car, if severe) and measurable changes of lung function which are asymptomatic, due to a naturally large lung reserve in healthy individuals. This "[Health Effects Pyramid](#)" illustrates the general correlation of the severity of documented health effects with the strength of the scientific evidence available. Thus, while individual severe health events would be less common, there is a large overall impact on health and well-being because of the large number of people involved. *Source: <http://www.godel.net/environment/smog/OMAGroundlevelozone.htm>*

Table 13: Air Quality Indicators for Kitchener CMA in 2001 and 2002.

	1998	1999	2000 (to Sep 30)	2001	2002
# of air quality advisories	3	5	3	7	13
# of days covered by advisory	8	9	3	20	19
# of days when AQI was greater than 50 (ie. poor air quality) at 3pm ^w	19	14	7	11	11

Source: Environmental Health & Lifestyle Resources Division Operational Plan (ROW) and Pollution Probe.

Water Quality

Even though it is rare in Canada, microbiological contamination of drinking water represents a significant breakdown in a community's health protection system.¹

In 2002, there were 1687 adverse water testing results (approx 37%) from 4549 private and public well water supply samples in Waterloo Region.⁴⁵ Public wells are wells that serve a public establishment. These could include restaurants, schools and gas stations in rural areas; they do not include the municipal water supply.

With respect to the municipal water supply (eg. drinking water), the 2002 first quarterly water quality report states that "the Region's high quality municipal water is safe...meets all the health related Drinking Water Standards set by the Ontario Ministry of the Environment."⁴⁶



In 2002, 37% of private and public well water samples had adverse testing results.

^w Note that the AQI could be above 50 earlier or later in the day

GENERAL HEALTH INDICATORS

*The last set of indicators deals with general health. In addition to other measures of the health of a community, "measures of negative health are often...understood and there is agreement on and use of key indicators."*¹

Low Birth Weight

"Low birth weight (LBW) is an indicator that figures prominently, both provincially and in indicator sets used by social planning councils, local governments and healthy communities projects. LBW is considered by the World Health Organization as a key indicator of overall population health, partly because it can have long-term consequences on later adult health status, quality of life and survival of children."¹



As can be seen from table 14, Waterloo Region is consistently below the provincial average for the number of children born at less than 2500 grams, which is considered LBW⁴⁷.

Table 14: Births less than 2500 grams as % of total single births in Waterloo Region and Ontario.

Year	single births less than 2500 grams as % of total single births in Waterloo Region	single births less than 2500 grams as % of total single births in Ontario
1992	4.4%	4.6%
1996	4.1%	4.8%
1998	3.9%	4.5%
1999 ⁴⁷	4.2%	4.5%

Source: HELPS1, Public Health Branch, MOHLTC.

In Waterloo Region, both infant mortality rates and low birth weight rates are lower than the provincial averages.

Infant Mortality Rate

The infant mortality rate continues to be one of the leading indicators of international health status. Its value as an indicator at the community level is uncertain, given the relatively small size of the population.¹

With the exception of 1995, the infant mortality rate in Waterloo Region was consistently lower than the provincial rate, as can be seen from the table on the next page⁴⁸.

Table 15: Infant mortality rate per 1,000 live births in Waterloo Region and Ontario.

Year	Infant mortality rates per 1,000 in Waterloo Region	Infant mortality rates per 1,000 in Ontario
1997	4.5	5.5
1996	3.6	5.7
1995	6.6	6.0
1994	4.6	6.0
1993	4.3	6.2

Source: FCM Quality of Life Report (2001) and Statistics Canada.

Health Utility Index

The Health Utility Index (HUI) is a derived health status index, based on the Comprehensive Health Status Measurement System (CHSMS). The HUI provides a description of an individual's overall functional health, based on 8 self-reported attributes (vision, hearing, speech, mobility, dexterity, cognition, emotion, and pain/discomfort). The scores are derived from these 8 attributes, and range from negative -0.360 to 1 in increments of 0.001. A higher score indicates better health. Perfect health is rated 1.000 and death is rated 0.000, while negative scores reflect health states the respondent considers worse than death.⁴⁹ For example, a near-sighted individual, fully healthy on other 7 attributes, is scored 0.973.



In Waterloo Region, the breakdown of HUI levels in 2000 was as follows⁵⁰:

Table 16: Percentage of people with various levels of Health Utility Index in Waterloo Region and Ontario.

HUI level	% For Waterloo Region	% For Ontario
0.9 to 1.0 (top 2 levels)	60.0%	59.0%
0.5 to 1.0 (mid to high)	90.2%	90.0%
Less than 0.5	9.8%	10.0%

Source: CCHS (2000)

The Health Utility Index levels for Waterloo Region are very similar to provincial levels.

CONCLUSION

In assessing the overall health of a community, it is necessary to consider a wide variety of indicators. In this report, 28 indicators were examined. These represent all three intersecting circles of the Healthy Communities model: Environment, Economics and Community. There are many more factors that can influence both individual and community health; they are beyond the scope of this report. The proviso should be noted that, since the data for these indicators come from many, varied sources, not all of the data limitations have been stated here.

Even though this report is meant to be descriptive, it is also comparative where appropriate data could be found. Based on these comparisons, Waterloo Region often appears to be healthier than other communities.

Charitable donations for this region are relatively high compared to both the national level and to the Region of Hamilton-Wentworth. In fact, the Kitchener Central Metropolitan Area (CMA) rates are higher than almost all the other CMAs in Canada that were reported in the Federation of Canadian Municipalities Quality of Life Report.

The high rate of recycling waste in Waterloo Region is encouraging. It is not possible to compare this figure to other Regions in Canada due to a lack of common definitions (and possibly differing programs). The fact that residents in Waterloo Region recycle approximately one third of their waste demonstrates a willingness of the community to divert waste from traditional landfills, and also a commitment from the Region to provide a high quality recycling program.

Waterloo Region is known for its blend of urban and rural communities. This is evident with the indicator of local food production, and the high number of farms within Waterloo Region. Of the foods that are produced here, however, it is not clear how much stays within Waterloo Region, and how much is exported. This can be difficult to estimate since some products travel outside of the Region for processing, then come back to be purchased by local residents. Further research in this area would help to determine how much locally produced food is also purchased locally.

The indicators of transportation and walkability show that Grand River Transit is highly accessible to urban residents (89.2% of people live within a 450-metre walk to public transit). However, only 4% of commuters use public transit to get to work, which is much lower than both the provincial average and a comparable city (Brampton). This seems to suggest that even though people have access to public transit, service hours, frequencies, travel times and routing can still be improved. The Regional Municipality of Waterloo has been working toward making improvements in these areas in recent years. The initial results of these improvements have been desirable with, on average, 4% increase in ridership each year since the Regional Municipality of Waterloo assumed transit.

There are also some areas where Waterloo Region is not as healthy as it could be. When economic disparity for Waterloo Region is considered, for example, there is 1 family in the very lowest income quintile for every 5 families in the very highest income quintile. This represents more disparity than what exists in Ontario and in Canada. Additionally, the fact that 13.6% of Waterloo Region's population experienced food insecurity at some point in the last year should encourage us to put more effort into ensuring food security for all residents.

Housing affordability is a growing problem for certain segments of the population in Waterloo Region. This is particularly true for households with low and fixed incomes (eg. minimum wage, Ontario Works, Old Age Security). These incomes have not kept pace with the increase in rents over the last decade, especially since 1996. For example, minimum wage and Ontario Works rates have been frozen since 1995, whereas rent for the average 2-bedroom unit has increased over 20%.

The literacy statistics for Waterloo Region are concerning: approximately 1 in 2 adults are at the lowest levels of literacy and have great difficulty coping with print. Even more concerning is the higher rate of illiteracy among seniors, especially when the lack of ability to read medication instructions is concerned.

In addition to the further exploration of local production, there are other areas where more research could lead to a better understanding of the health of Waterloo Region. The first indicator where this is recommended is community safety. Since crime *rates* reported are often influenced by the size and support of the local police force, the community's *perception* of crime and safety may offer more information about community safety.

The indicator of energy use per capita can also be explored further by researching the number of people in a community who are actively pursuing alternatives to traditional energy sources and making efforts to reduce their energy consumption.

This report has compiled data from many sources into the Healthy Communities model for Waterloo Region. It may be helpful to use this report as a baseline and compare some or all of this data with similar data collected in the future to give a longitudinal picture of the health of Waterloo Region.

ENDNOTES

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