



early childhood community development centre

Understanding the Early Years

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Niagara Region Mapping Study

2008

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"The quality and capacity of our future population depends on what we do now to support early child development."

*Dr. Fraser Mustard,
Founder & Chair
Emeritus, Council for
Early Child Development*

Disclaimer

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1. Introduction

The Understanding the Early Years (UEY) project is a national initiative, funded by HRSDC, that enables communities to better understand the needs of their young children and families so they can determine the best programs and services to meet them. UEY is a response to the growing body of literature that has provided evidence about how a child's early development significantly affects learning, behaviour, physical and emotional health across the lifespan (Henricsson & Rydell, 2006; Keating & Hertzman, 1999; McCain & Mustard, 1999; Schweinhart, 2005). UEY initiatives identify community factors that may influence children's development, readiness to learn in school, and family welfare (HRSDC, 2006).

Whether your interest is in the Niagara Region as a whole, a particular combination of areas within Niagara, a certain municipality, or even at the neighbourhood level, this report contains early learning and development, socioeconomic and community resource information that will assist you in planning and delivering services aimed at improving outcomes for children 0-6 years of age and supporting their families. We encourage you to use it to explore and better understand key factors influencing early child development and school readiness in our community.

This report is based on information gathered during the implementation of the 2006 Early Development Instrument (EDI) by Understanding the Early Years Niagara Region. The EDI is a population based snapshot of children's readiness to learn in school in 5 developmentally-based domains: Communication Skills & General Knowledge, Physical Health & Well-being, Social Competence, Emotional Maturity, and Language & Cognitive Development.

This report provides local data about the early development of children in the Niagara Region and the context within which their development is occurring. Maps are used to highlight municipal and neighbourhood assets such as community resources and positive socioeconomic conditions as well as resource gaps and poor socioeconomic environments. This knowledge provides insight into potential relationships between community resources, socioeconomic characteristics, and children's readiness to learn at school. Statistics Canada 2001 Census data were used to provide the context for socioeconomic maps. In this report, maps of community resources are also presented which stem from the Community Resource Inventory (UEY, 2007). These maps visually display programs and services available for children aged 0-6 years and their parents/caregivers.

Finally children's readiness to learn in school is outlined in the context of possible protective and risk factors associated with early child development. These combined results constitute this report.

Purpose

The overall goal of this Mapping Study is to paint a preliminary picture of municipal and neighbourhood environments in which children develop and learn, alongside their early learning and development results.

This report will identify areas within the Niagara Region showing strength and also those showing vulnerability. While this report does not contain all the local knowledge gathered by UEY, every effort has been made to provide the most important findings and to highlight surprising instances of resilience or challenge. The intention is to learn from successes, identify any gaps or needs, and encourage further examination of local conditions and outcomes for young children. The early years decision-making community can then identify how best to allocate resources, deliver services, propose new areas and/or types of service, and focus their coordinated efforts.

Purpose (continued)

This report also provides knowledge intended to support the early learning and care service delivery community in maintaining and further investing in an environment that promotes the optimal development of individual and collective capacity of Niagara children 0-6 years of age.

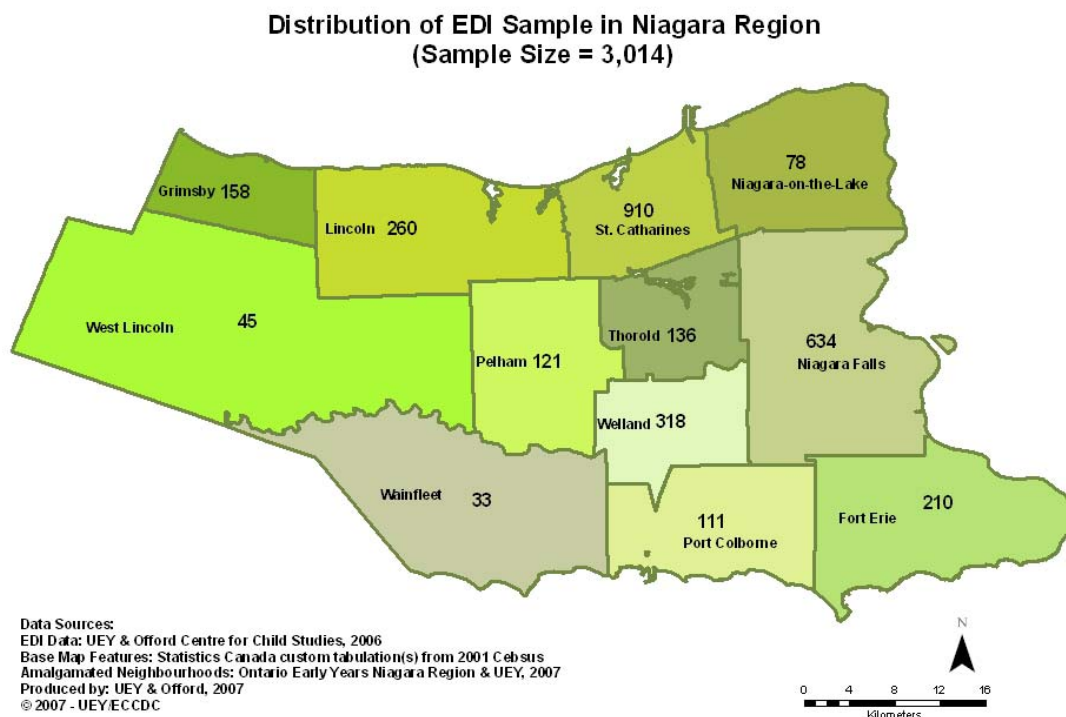
It is hoped that, by outlining the strengths and challenges that may enhance or potentially impede early learning and development, this report will assist in determining which programs, services or resources may be needed in order to improve child outcomes, as well as where they may be most needed. Community initiatives and other programs and services intended to improve the lives of children in the Niagara Region are encouraged to use this information, along with other reliable and relevant local data, in delivering service and developing plans, proposals, and reports and taking action based on what we collectively know about Niagara and the young children and families that live in its neighbourhoods.

Sampling Methodology

Map 1 indicates the overall number of children in the 2006 EDI sample (n=3,014) by neighbourhoods in this report. Results provided by the Offord Centre for Child Studies, McMaster University (2006) were further analyzed and mapped and these are found in subsequent sections of this report.

Additional data used for mapping and reporting in this report includes results from a Community Resource Inventory Survey (UEY, 2007) which captured responses from 193 service providers in Niagara and custom tabulations from the 2001 Census (Statistics Canada).

Map 1. Distribution of Children in EDI Sample by Niagara Region Neighbourhoods (2006)



The Niagara Region

In 2006 there were 29,790 children aged 0-6 living in Niagara region, which made up 7.0% of Niagara's total population (Statistics Canada, 2006). The Niagara region seems to be facing a declining early years population as it made up 7.6% of the entire population in 2001. The median age of the Niagara region was 41.9 years in 2006 (Statistics Canada, 2006).

The Niagara Region covers 1896 sq. km in southern Ontario, between Lake Ontario and Lake Erie and consists of an urban (St. Catharines, Niagara Falls, Welland) and rural (Wainfleet, West Lincoln) mix of twelve municipalities (The Regional Municipality of Niagara, 2006).

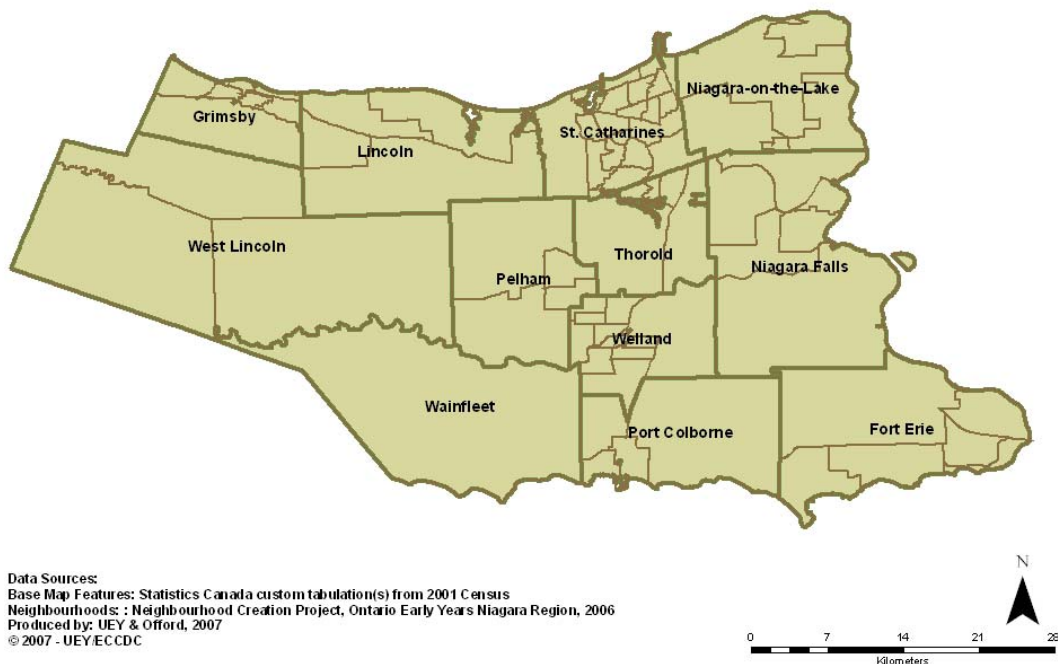
Map 2 shows the municipalities and their neighbourhoods of the Niagara Region. The lines in bold indicate municipal boundaries; neighbourhoods are outlined by thinner brown lines within these areas. For more detailed information on these municipalities and their neighbourhoods, please refer to the relevant pages in the Municipal Readiness to Learn section of this report.

The Importance of Neighbourhoods

A growing amount of research suggests that neighbourhoods can have a significant impact on the healthy development of young children. Therefore, it is very important to understand what a neighbourhood looks like, and how it impacts the development of the young children who live there.

Map 2. Neighbourhoods of the Niagara Region (2006)

Neighbourhoods in Municipalities of Niagara Region



The Importance of Neighbourhoods (continued)

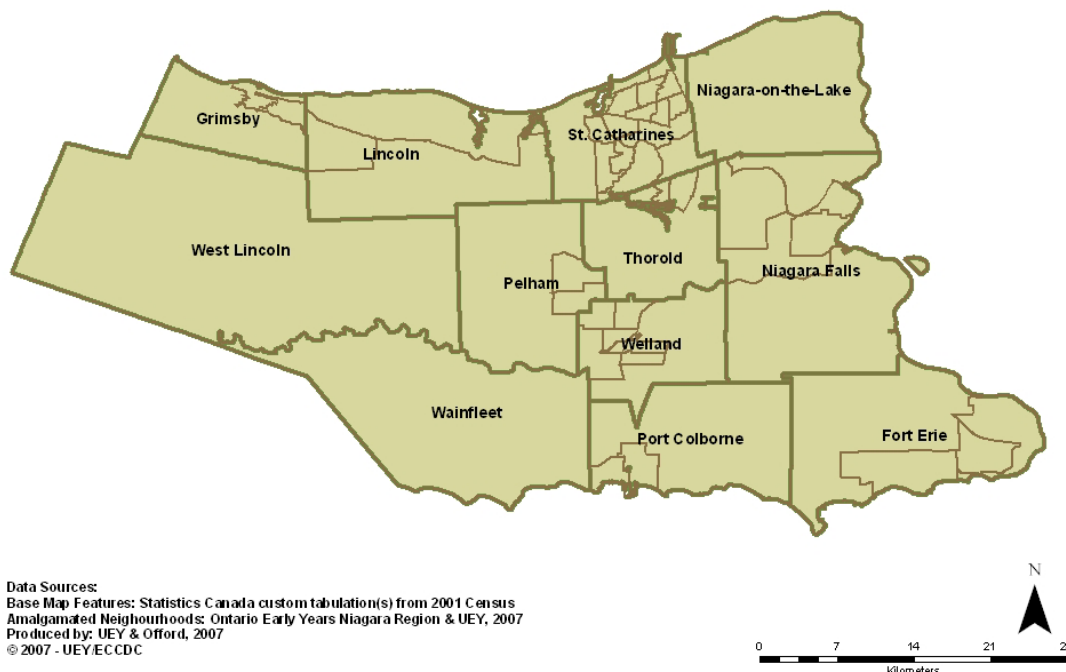
Neighbourhoods in the study are based on Statistics Canada determined dissemination areas (DAs) which are small, relatively stable geographic units made up of one or more blocks. It is the smallest standard geographic area for which all census data are disseminated. A DA is composed of one or more neighbouring blocks, with a population of 400 to 700 persons. All of Canada is divided into dissemination areas (Statistics Canada, 2001). Using the new DAs resulted in slight shifts in the neighbourhoods in the region and future reports will reflect these shifts.

For the purposes of this report, neighbourhoods were also identified through the work of the Ontario Early Years Niagara Region Data Analysis Coordinator, who facilitated community focus group sessions across the twelve municipalities in the Niagara Region. At these sessions, participants reviewed poster-sized maps of their municipalities and discussed neighbourhood areas until a group consensus on boundaries was reached. Participants were also asked to provide names for the neighbourhoods.

The creation of neighbourhoods now provides the Niagara Region with an opportunity to present various pieces of information at a level of analysis useful for planning. Neighbourhood profiles can help school boards, community agencies, organizations, and government with their local planning by providing socioeconomic, demographic, health, and social data at a meaningful geographic level. Neighbourhood profiles allow communities to answer the basic questions of "what" and "where", come together as a group, and move forward to increase understanding based on additional evidence and use that information to inform plans and activities.

Map 3. Amalgamated EDI Neighbourhoods of the Niagara Region (2007)

Amalgamated Neighbourhoods in Municipalities of Niagara Region



However, in order to protect the confidentiality and anonymity of children involved in the EDI, there must be at least 30 children per area in order to report the data. When we looked at our 2006 EDI data we found that there were not 30 children in every neighbourhood. Thus, several neighbourhoods in the Niagara Region had to be amalgamated. Instead of 74 neighbourhoods, there are 50 neighbourhoods for EDI reporting purposes. However, these amalgamated neighbourhoods are only used when reporting EDI data. Map 3 displays the amalgamated EDI neighbourhoods of the Niagara Region used for reporting on the EDI.

Readiness to Learn

We know that children are born ready to learn; meaning that their neurosystems are pre-programmed to develop various skills and neuropathways, depending on the quality and quantity of early experiences received (Offord Centre for Child Studies, 2004; Statistics Canada, 2007). Children's early experiences have far-reaching and solidifying effects on the development of their brains and behaviours (Shanker, 2007).

The Early Development Instrument (EDI) measures children's readiness to learn in school and was developed by Drs. Magdalena Janus and Dan Offord at the Offord Centre for Child Studies, McMaster University, with the support of a national advisory committee (Offord Centre for Child Studies, 2004).

The term 'readiness to learn in school' refers to the child's ability to meet the task demands of school such as being cooperative, sitting quietly, and listening to the teacher, and to benefit from the educational activities that are provided by the school (Offord Centre for Child Studies, 2004).

The EDI is an outcome measure of early development in children. It reports on children's readiness to learn in five general domains identified in the literature: physical health and well-being; social competence; emotional maturity; language and cognitive development; and communication skills and general knowledge in relation to developmental benchmarks rather than curriculum-based ones (Offord Centre for Child Studies, 2004).

The EDI was implemented in Niagara at the senior kindergarten level. A teacher uses her/his observations after several months of classroom/school interaction with the child to complete the questionnaire. The instrument provides information for groups of children and is intended to be used in order to:

- a. report on areas of strength and deficit for populations of children;
- b. monitor populations of children over time; and
- c. predict how children will do in elementary school.

The EDI is collected on individual children; however it is not designed to provide diagnostic information, nor is it meant to measure teacher or school performance. The purpose of the EDI is to report on populations of children in different municipalities and neighbourhoods. It is intended to help communities assess how well they are doing in supporting young children and their families and assist in monitoring changes in these groups (Offord Centre for Child Studies, 2004).

EDI results are generally reported in two ways: (1) average (mean) scores; and (2) percentiles. Each domain is scored from 0-10. Higher scores indicate greater readiness to learn at school. The average scores are simply the average of all the scores. The percentile thresholds or cut-off points are relative and based on the distribution of scores. Reporting results both ways provides a clearer picture of the distribution of scores.

Reporting data by percentiles shows the percentages of children scoring in a certain range, such as above the 75th percentile, on each scale. Using percentiles allows for easier interpretation of comparisons between groups

Readiness to Learn (continued)

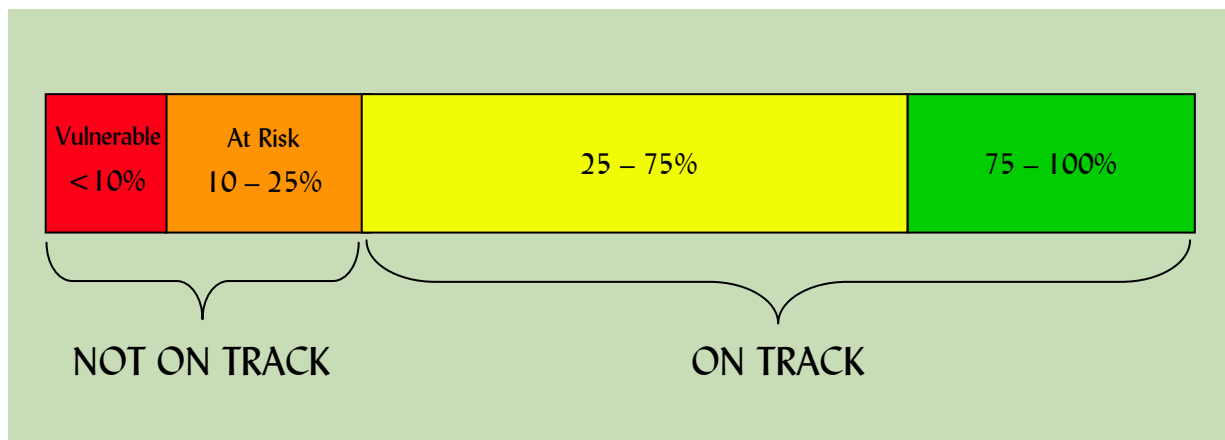
such as municipalities or neighbourhoods. If the percentage of children above the 75th percentile is more than 25% it indicates that students are doing better than would be expected, given an even distribution of high EDI scores across the Niagara region. Similarly, if a child scores below the 25th percentile, this indicates a low score and the child is among the lowest 25% of all children assessed in the Niagara region. If a child scores “very low”, this means that the child’s score on a particular domain falls among the lowest (poorest) 10% of all scores in Niagara. Theoretically, if scores were evenly spread across Niagara, each neighbourhood would have 10% of its students fall into this lowest category. For example, in a community where 40 students were tested, it is expected that four students would score very low on each of the five domains (A Vision for Children in Halton: Report Card, 2004).

As shown in Figure 1

- **Scoring below the 10th percentile = Vulnerable.** Children who scored in the lowest (poorest) 10th percentile of scores may be seriously at risk for difficulties that could impact their future performances at school. Scoring in the vulnerable range on one or more EDI domains is a predictor of future academic and employment success and general well-being.
- **Scoring between the 10th and 25th percentile = At Risk.** These scores indicate some relative need or weakness.
- **Above the 25th percentile = On Track.** These scores indicate a child is thriving in their readiness to learn and is expected to have few difficulties in the future in school.

“Vulnerable” children may have a developmental difficulty such as poor motor or language skills. They may have problems getting along with other children, meeting challenges, regulating their emotions, attending to tasks, or learning new concepts and skills. However, vulnerability is not a solid prediction. It does mean that individual, or even all, children in these circumstances are more likely to develop problems later in life than those who do not (McCain, Mustard, Shanker, 2007). We examine EDI results, in this report, from the framework of overall population health trajectories in order to support evidence based decision-making that will assist the largest, and most vulnerable, groups of children.

Figure 1. EDI Percentile Ranges



2. Readiness to Learn in the Niagara Region

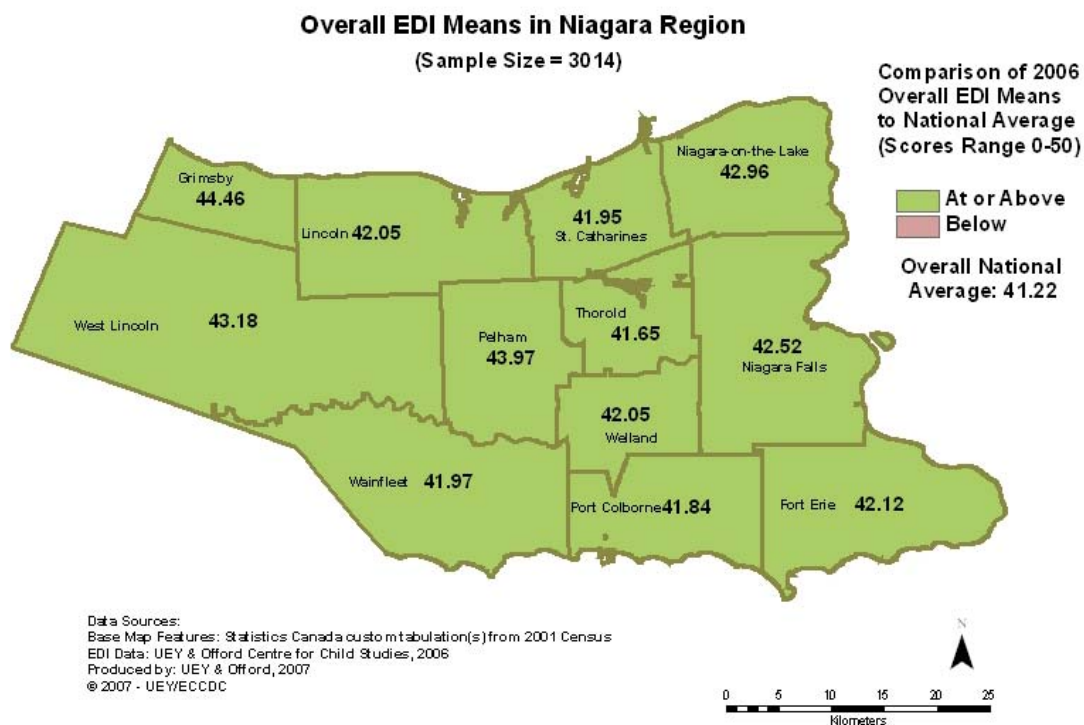
The total Niagara sample size for the 2006 round of the EDI was 3,014 senior kindergarten children. This included children from the Niagara Catholic District School Board and the District School Board of Niagara. There were 101,850 EDIs completed in 2006 across Canada.

2.1 Early Development Instrument (EDI) Results

EDI Mean Score Comparisons

Overall, children in the Niagara region are exceeding many of their peers across Canada in the five readiness to learn domains and fewer children have challenges that may impede their success in school. Map 4 indicates that all municipalities in the Niagara region had overall EDI mean scores above the national average in 2006. The overall means is calculated by taking the average scores of each of the five domain scores and adding them together. The national average of EDI means in 2006 was 41.22. Grimsby, Pelham, and West Lincoln had the highest overall mean scores in the Niagara region (44.46, 43.97, and 43.18 respectively). Thorold, Port Colborne, and St. Catharines had the lowest overall mean scores in the Niagara region (41.65, 41.84, and 41.95 respectively).

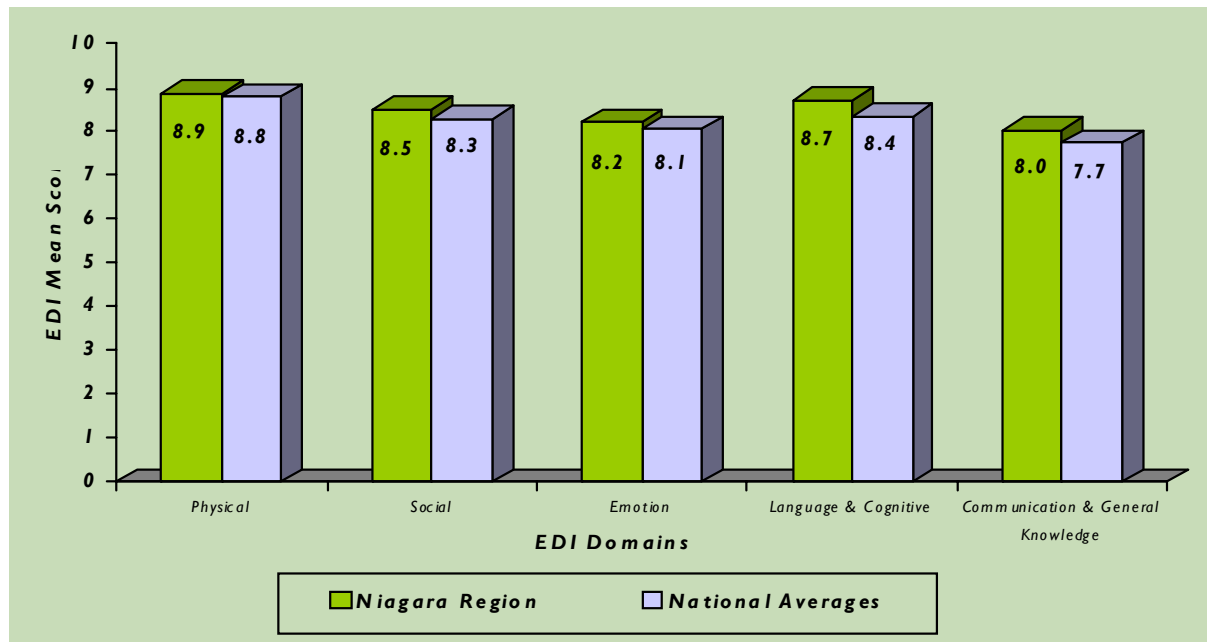
Map 4. Comparing EDI Means in the Niagara Region to National Average (2006)



EDI Mean Score Comparisons (continued)

As shown in Chart 1, children in Niagara had the highest mean scores in Physical Health & Well-being, Language and Cognitive Skills, and Social Competence domains (8.9, 8.7, and 8.5 respectively). Children in Niagara had the lowest mean scores in Communication and General Knowledge and Emotional Maturity domains (8.0 and 8.2 respectively).

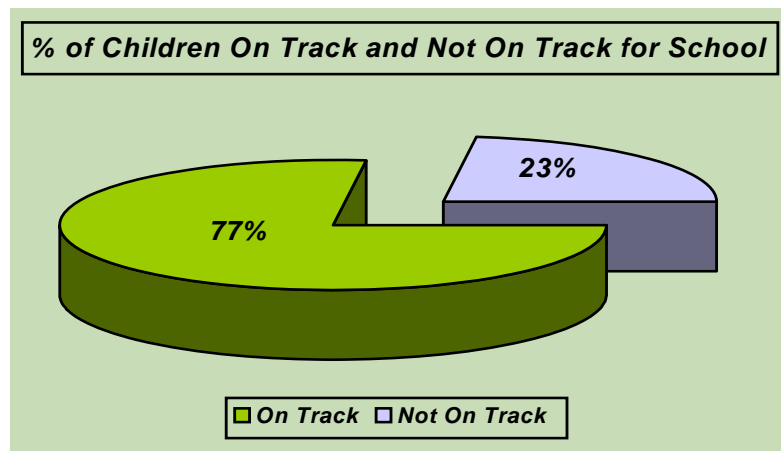
Chart 1. Niagara Region 2006: Comparison of Children's Mean Scores and the National Average



On Track for Learning Results

Overall, at the Niagara regional level, the big picture looks good. As shown in Chart 2, more than three out of four senior kindergarten children (77%) in Niagara were on track for learning in school (scoring between the 25th and 100th percentile) in 2006. This is higher than the national average of 74.1%. There were municipalities that had particular developmental strengths as well as challenges, however.

Chart 2. Overall On Track and Not on Track for Learning in School in Niagara Region (EDI 2006)



How to examine mapped knowledge:

In the series of maps that follow, beige and green areas show relative strength, while the yellow and red areas indicate some relative need or weakness. In sharing this information, it is our hope that you will:

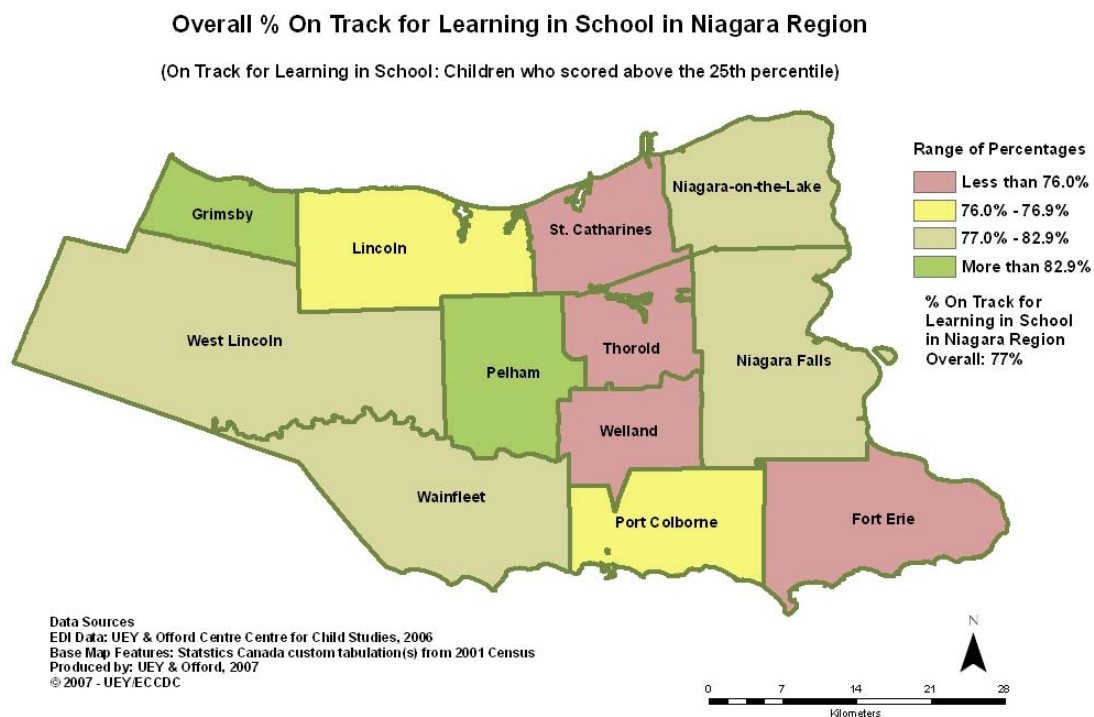


- stop at 'red' and seriously examine the situation;
- proceed with caution when you see 'yellow', carefully factoring in community conditions; and
- celebrate and replicate beige and green success.

Map 5 displays percentages 'On Track for Learning in School' (i.e. percent of children scoring above the lowest 25th percentile on measure) as compared to the regional average (77%). Grimsby and Pelham showed particular overall strength on the EDI, with more than 82.9% of kindergarteners on track and ready to learn in school (scoring between the 25th and 100th percentiles). St. Catharines, Welland, Thorold, and Fort Erie showed overall relative weakness on the EDI, with less than 76% of kindergarteners on track for learning in school.

While overall EDI and domain mean scores and 'on track for learning' results were generally good for Niagara, a closer look at rates of vulnerability across the region and within neighbourhoods reveals more of the local picture for children 0-6 years of age.

Map 5. Overall Percent of Students On Track for Learning in School in Niagara Region (EDI 2006)



Rates of Vulnerability

30.1% of senior kindergarten children in Niagara scored in the vulnerable range in 2006; in the lowest 10th percentile on one or more EDI domains. This represents a statistically significant difference (greater) in comparison to the national average (25.9%, 2000-2004).

Rates of Vulnerability (continued)

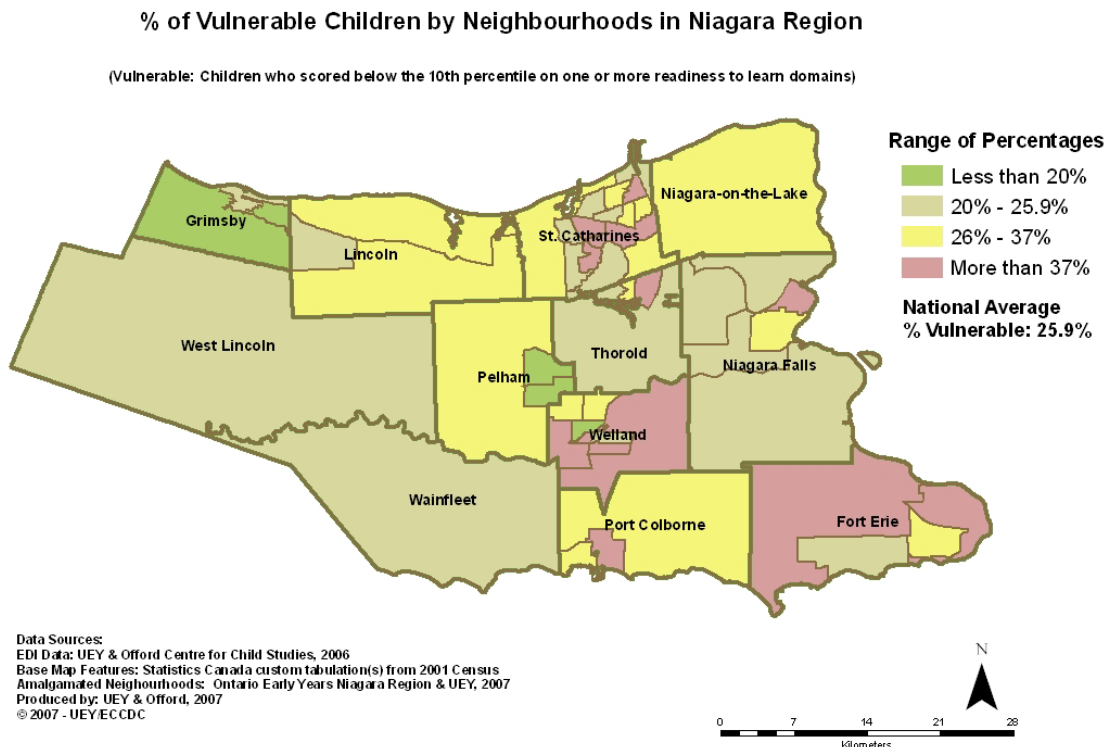
We can learn even more by looking at the percentage of vulnerable children in each of the neighbourhoods in Niagara. Map 6 indicates the range of percentages, by neighbourhoods, that are scoring in the lowest 10th percentile on one or more readiness to learn domains.

As seen in Map 6, clearly Grimsby is doing quite well (shown in green). However, the majority of Fort Erie and Welland, and neighbourhoods within St. Catharines, Niagara Falls, Port Colborne, and Thorold scored well above (more than 37%, shown in red) the national normative sample (25.9%). Also, the majority of Lincoln, Pelham, Port Colborne, Niagara-on-the-Lake, and several neighbourhoods in St. Catharines showed medium to high rates of vulnerability (shown in yellow).

It is interesting to note that in terms of not on track, Niagara-on-the-Lake scored quite well; however, when looking at overall vulnerability scores, the town seems to have two distinct groups, as there were a high number of students scoring quite well and a high number of students scoring poorly. This may mean that further examination of additional local knowledge is required.

The small neighbourhood in Thorold Proper, seen in red on the map, had the highest vulnerable percentage, with 47.4% of children scoring in the lowest 10th percentile on one or more of the EDI domains (n=60). Children living in Pelham South Fonthill had the lowest vulnerability scores in the region, with only 14.3% scoring below the 10th percentile on one or more of the EDI domains (n=38).

Map 6. Percent of Students Vulnerable for Learning in School in Niagara Region (EDI 2006)





Interpreting EDI Results

We do have to be careful when interpreting EDI vulnerability rates. Keep in mind some neighbourhoods - and even municipalities - have small sample sizes. The Offord Centre for Child Studies recommends having at least 30 senior kindergarten children per area in which we report EDI results. Each of the 50 EDI neighbourhoods reported on in this study has sample sizes greater than 30 children. However, Wainfleet had a total sample of 33 children. When looking at vulnerability rates for Wainfleet, only eight children scored in the lowest 10th percentile on one or more readiness to learn domains. There are several neighbourhoods with large EDI sample sizes with well over 100 children living in them (see Map 2 for distribution of sample sizes for each of the neighbourhoods).

However, it is important to note that we need to look at EDI results in two distinct ways. Both occurrences of high percentages of vulnerability and areas where the largest number of children are scoring low on the EDI should be considered.

Thus, the municipalities with the largest numbers of senior kindergarten children are: **St. Catharines**, **Welland**, **Niagara Falls**, **Lincoln**, and **Fort Erie**.

- **St. Catharines** overall had a vulnerability rate of 31.9% found among the 910 participating senior kindergarten children.
- In **Welland**, 33.3% of the 318 children in the sample were considered vulnerable.
- In **Niagara Falls**, there was a 27.4% overall vulnerability among the 634 total children sampled.
- The 260 children sampled in **Lincoln** had an overall vulnerability of 30.7%.
- In **Fort Erie**, 33.9% of the 210 participating children scored low on one or more domains.

*"A large number of children at a **small risk** for school failure may generate a much greater burden of suffering than a **small** number of children with a **high risk**."*

(Based on Rose 1992, Offord et al. 1998)

We can also examine EDI vulnerability results by domain. This information, which may be important to both regional and municipal planners and service providers, will be highlighted in the next section of this report.

Rates of Vulnerability by EDI Domains

As a reminder, the five (5) domains measured by the Early Development Instrument are:

1. Communication Skills and General Knowledge;
2. Physical Health and Well-being;
3. Language and Cognitive Development;
4. Emotional Maturity; and
5. Social Competence.

Communication Skills and General Knowledge Results

Map 7 indicates vulnerability on the Communication Skills and General Knowledge domain of the EDI for neighbourhoods in Niagara as compared to the regional average (16%). Grimsby and Pelham, along with parts of Lincoln and St. Catharines, are showing good scores (green: less than 9% vulnerable). Niagara-on-the-Lake, Lincoln, West Lincoln, Thorold, and Niagara Falls are mainly beige on this map, indicating a low to moderate rate of vulnerability in this domain (9.01 – 16%). However, the majority of Welland, Fort Erie, Port Colborne, St. Catharines, and Wainfleet display vulnerability above the regional average (red and yellow areas – above 16%), as do some neighbourhoods in Niagara Falls and Thorold.

Map 7. Percent of Vulnerable Children on the Communication Skills and General Knowledge Domain by Neighbourhoods in Niagara Region (EDI 2006)

% Vulnerable in Communication Skills & General Knowledge by Neighbourhoods in Niagara Region

(Vulnerable: Children who scored below the 10th percentile)

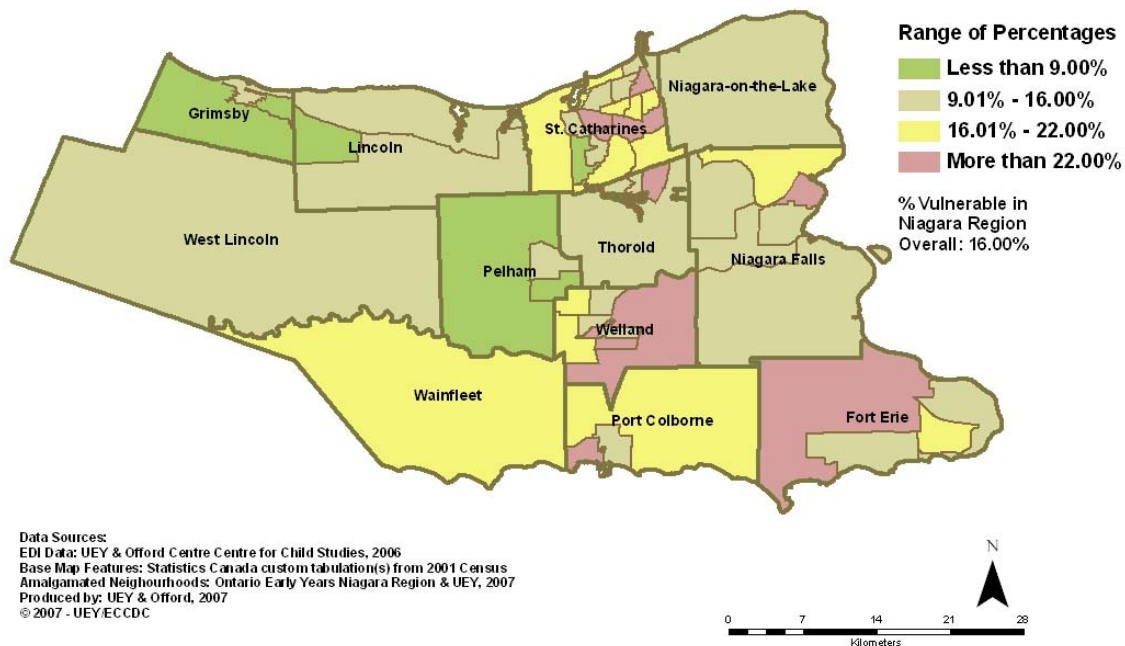


Chart 3 shows the Communication Skills & General Knowledge domain which is made up of one sub-domain and provides examples of the types of questions teachers answered for each SK child participating on the EDI in this domain.

Chart 3. Communication Skills and General Knowledge Sub-domains

COMMUNICATION SKILLS AND GENERAL KNOWLEDGE SUB-DOMAIN

Examples

Communicates easily and effectively	Participates in storytelling or imaginative play
Articulates clearly	Shows adequate general knowledge
Has proficiency in their native language	

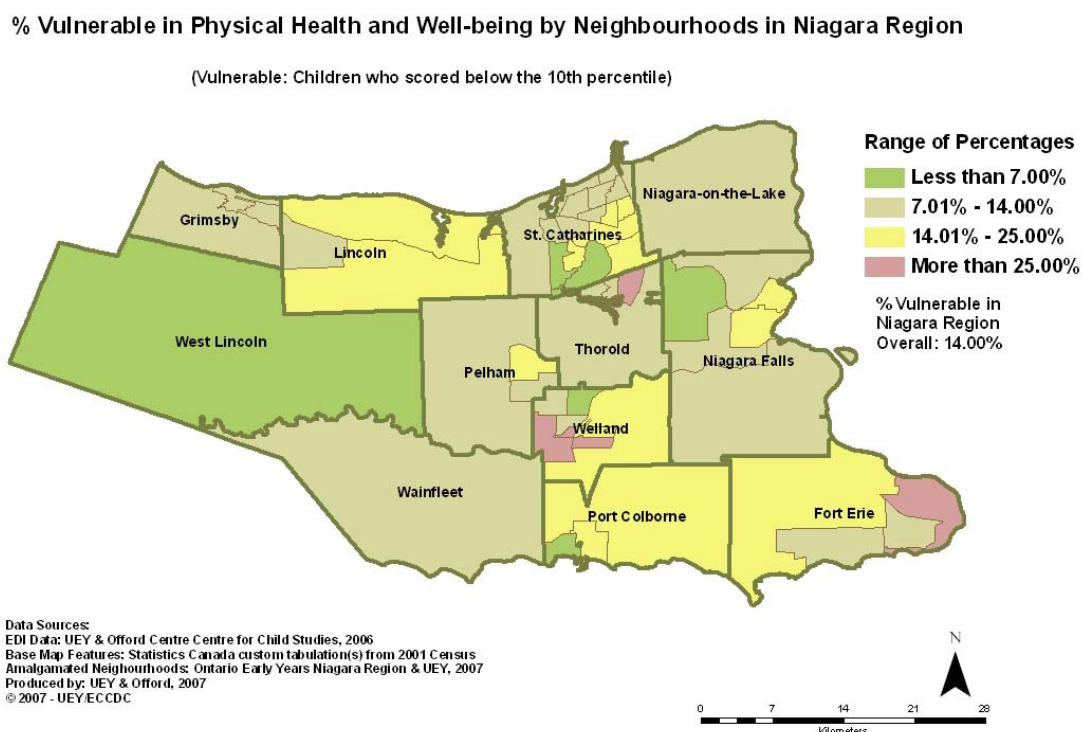
Through further analysis at the sub-domain level, EDI results show that Niagara senior kindergarten students struggled mostly with communicating easily and effectively. Nine of the 12 municipalities had not on track percentages (scoring in the lowest 25th percentile) in this area. The only three municipalities whose students scored on track in this sub-domain were Grimsby, Pelham, and West Lincoln. Overall, however, Niagara students showed that in terms of demonstrating adequate general knowledge, only three municipalities scored in the not on track percentages (Port Colborne, Thorold, and Wainfleet).

Thorold displayed not on track percentages above the regional average on all five areas. Fort Erie, Port Colborne, St. Catharines, and Welland showed not on track percentages above the regional average on four of the five sub-domains. Lincoln and West Lincoln had not on track percentages above the regional average on only one out of the five sub-domains. Grimsby's students scored very well, with not on track percentages above the regional average on none of the five sub-domains.

Physical Health and Well-being Results

Map 8 shows vulnerability percentages on the Physical Health and Well-being domain of the 2006 EDI for neighbourhoods as compared to the regional average (14%). West Lincoln - displayed in green on the map - indicates overall low vulnerability on this domain. Grimsby, Wainfleet, Niagara-on-the-Lake, and most of Pelham, Thorold, St. Catharines, and Niagara Falls did score below the regional vulnerability average (shown as green and/or beige on map). The majority of Welland, Lincoln, Port Colborne, and Fort Erie show vulnerability rates above the regional average, as do some neighbourhoods in St. Catharines, Thorold, Pelham, and Niagara Falls (shown as yellow and/or red on map).

Map 8. Percent of Vulnerable Children on the Physical Health & Well-being Domain by Neighbourhoods in Niagara Region (EDI 2006)



Physical Health and Well-being Results (continued)

Chart 4 shows the Physical Health and Well-being domain which is made up of three sub-domains, what each of the three sub-domains assess and examples of the types of questions used in the EDI.

Through further analysis, it seems as though much of the overall vulnerability in the Niagara Region in this domain is likely attributed to low scores on the gross and fine motor skills sub-domain. All twelve municipalities had higher not on track percentages (scoring in the lowest 25th percentile) in terms of gross and fine motor skills.

Chart 4. Physical Health and Well-being Sub-domains

Sub-domain	Assesses	Examples
PHYSICAL READINESS FOR THE SCHOOL DAY	Well-being	Inappropriately dressed for school, late for school, appears tired or hungry, displays low energy levels
PHYSICAL INDEPENDENCE	Physical Health	Sucks thumb/finger, no decided hand preference, is well coordinated in movements, is independent in washroom activities
GROSS AND FINE MOTOR SKILLS	Physical Health	Ability to manipulate objects, climb stairs, level of energy throughout the school day, proficiency at holding a pencil, overall physical development

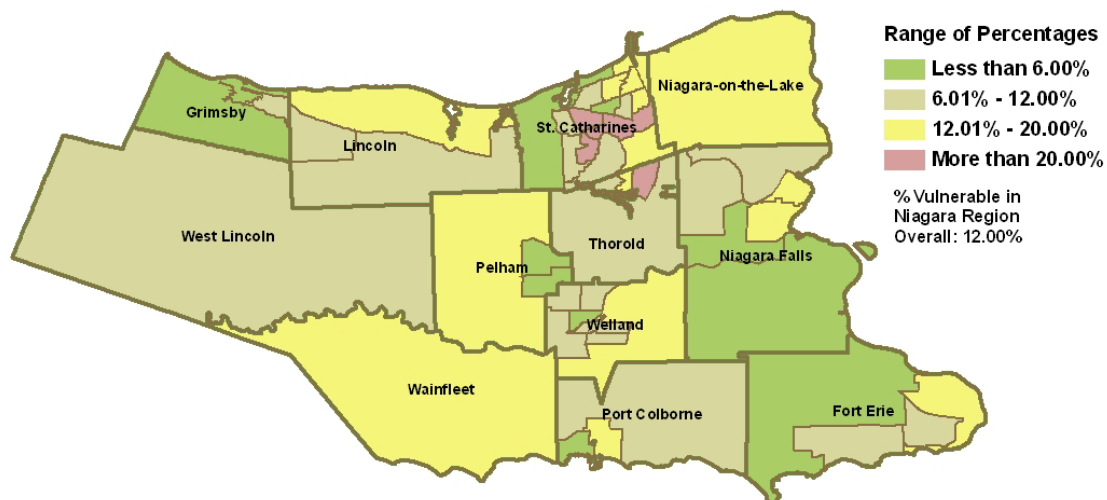
Language and Cognitive Development Results

Map 9 shows vulnerability percentages on the Language & Cognitive Development domain of the 2006 EDI for Niagara neighbourhoods, compared to the regional average (12%). Overall, the region is doing well, with the

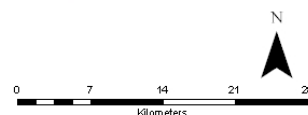
Map 9. Percent of Vulnerable Children on the Language and Cognitive Skills Domain by Neighbourhoods in Niagara Region (EDI 2006)

% Vulnerable in Language & Cognitive Development by Neighbourhoods in Niagara Region

(Vulnerable: Children who scored below the 10th percentile)



Data Sources:
EDI Data: UEY & Offord Centre for Child Studies, 2006
Base Map Features: Statistics Canada custom tabulation(s) from 2001 Census
Amalgamated Neighbourhoods: Ontario Early Years Niagara Region & UEY, 2007
Produced by: UEY & Offord, 2007
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majority of Grimsby, Fort Erie, Niagara Falls, and neighbourhoods in St. Catharines, Port Colborne, Welland, and Pelham showing less than 6% of their Senior Kindergarten population scoring in the lowest 10th percentile. Niagara-on-the-Lake, however, scored above the regional vulnerability average, as did Wainfleet and some neighbourhoods in Pelham, Welland, Lincoln, Niagara Falls, Fort Erie, Port Colborne, and St. Catharines (shown in yellow). St. Catharines and Thorold also show pockets of very high vulnerability rates (red – more than 20%) in this domain.

Chart 5 shows the Language and Cognitive Development domain and the corresponding four sub-domains, along with examples of questions on the EDI which make up each area.

Further analysis at the sub-domain level reveals that six of the twelve municipalities showed not on track percentages (below the 25th percentile) above the regional average on the interest in literacy/numeracy and memory sub-domains. Across Niagara, SK students were doing quite well in basic literacy and numeracy. Only four out of twelve municipalities showed not on track percentages above the regional average on the basic literacy sub-domain and the basic numeracy sub-domain. Thorold and St. Catharines showed not on track percentages above the regional average on all four of the Language and Cognitive Development sub-domains.

Chart 5. Language and Cognitive Development Sub-domains

Sub-domain	Examples
BASIC NUMERACY SKILLS	Is able to count to 20, is able to recognize 1–10, is able to recognize geometric shapes, understands simple time concepts (bedtime, today)
ADVANCED LITERACY SKILLS	Is able to read simple words, is able to read complex words, is able to read simple sentences, is able to write simple words, is able to write simple sentences
INTEREST IN LITERACY/NUMERACY AND MEMORY	Is generally interested in books, is interested in reading, is able to remember things easily, is interested in mathematics, is interested in games involving numbers
BASIC LITERACY SKILLS	Knows how to handle a book, is able to identify at least ten letters, is able to attach sounds to letters, is able to write his/her name in English

Emotional Maturity Results

Map 10 shows percentages of vulnerable children on the Emotional Maturity domain by neighbourhoods in Niagara region as compared to the regional average (10%). All of West Lincoln had less than 5% vulnerability (shown in green on map), as do neighbourhoods in Niagara Falls, St. Catharines, Grimsby, Welland, and Pelham. Thorold, St. Catharines, Welland, Port Colborne, and Fort Erie are showing neighbourhoods where more than the regional average percentage of children scored in the vulnerable range (red on the map).

Chart 6 outlines the four (4) sub-domains on the Emotional Maturity domain and provides examples of questions on the EDI which make up each.

Eight of the twelve municipalities had not on track percentages that were above the regional average in the hyperactivity and inattention sub-domain (the four municipalities who were doing well in this sub-domain were Grimsby, West Lincoln, Niagara-on-the-Lake, and Pelham). Three of the twelve municipalities (Fort Erie, Niagara-

Emotional Maturity Results (continued)

on-the-Lake, and Port Colborne) had students scoring well above the regional average not on track percentages in anxious and fearful behaviour.

Grimsby and West Lincoln did particularly well and had on track percentages on all four of the Emotional Maturity sub-domains above the regional average.

Map 10. Percent of Vulnerable Children on the Emotional Maturity Domain by Neighbourhoods in Niagara Region (EDI 2006)

% Vulnerable in Emotional Maturity by Neighbourhoods in Niagara Region

(Vulnerable: Children who scored below the 10th percentile)

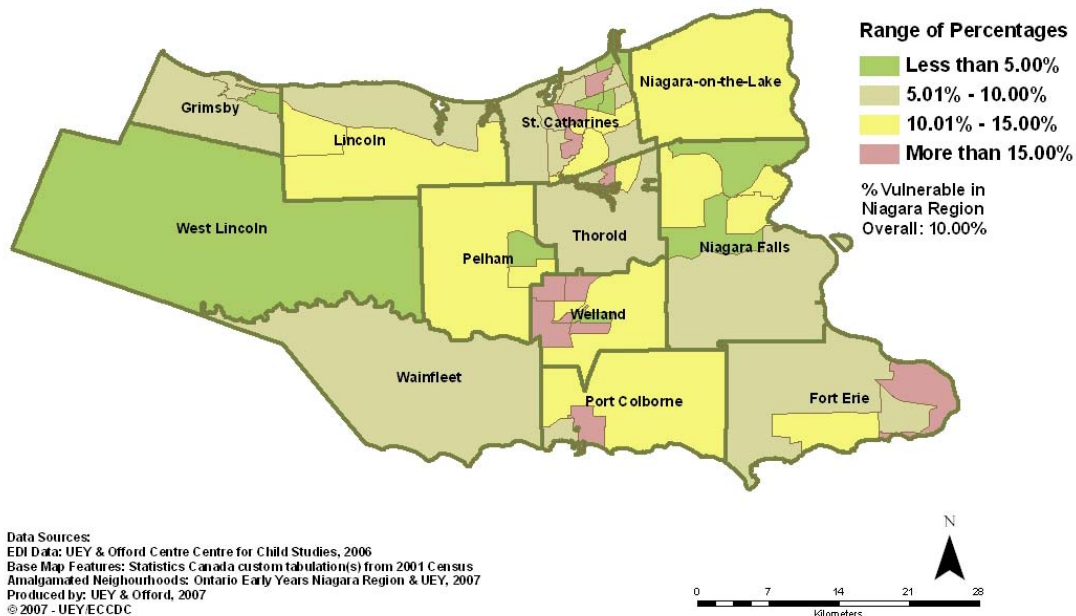


Chart 6. Emotional Maturity Sub-domains

Sub-domain	Examples
PROSOCIAL AND HELPING BEHAVIOUR	Will try to help someone who has been hurt; volunteers to help clear up a mess someone else has made; will try to stop a quarrel; offers to help other children who have difficulty with a task, etc.
HYPERACTIVITY AND INATTENTION	Can't sit still, is restless; fidgets; is impulsive, acts without thinking; is distractible; has trouble sticking to any activity; has difficulty awaiting turn in games or groups; is inattentive, etc.
ANXIOUS AND FEARFUL BEHAVIOUR	Is upset when left by parent/guardian; seems to be unhappy, sad, or depressed; appears fearful or anxious; appears worried; cries a lot; is nervous, high-strung, or tense; is incapable of making decisions; is shy.
AGGRESSIVE BEHAVIOUR	Gets into physical fights; bullies or is mean to others; kicks, bites, or hits other children or adults; takes things that do not belong to him/her; laughs at other children's discomfort; is disobedient; has temper tantrums.

Social Competence Results

Map 11 shows the percent of vulnerable children on the Social Competence domain by neighbourhoods in Niagara region as compared to the regional average (9%). Most of Grimsby and Pelham and all of West Lincoln had less than 4% of their children scoring in the vulnerable range (shown in green on map). Conversely, all of Niagara-on-the-Lake and neighbourhoods in St. Catharines, Niagara Falls, Thorold, Welland, Lincoln, Port Colborne, and Fort Erie scored above the regional average (shown in yellow and red on the map).

Nine of the twelve municipalities had above regional not on track percentages (not scoring well) on at least one of the three Social Competence sub-domains. Grimsby, Pelham, and West Lincoln did not have any not on track

Map 11. Percent of Vulnerable Children on the Social Competence Domain by Neighbourhoods in Niagara Region (EDI 2006)

% Vulnerable in Social Competence by Neighbourhoods in Niagara Region

(Vulnerable: Children who scored below the 10th percentile)

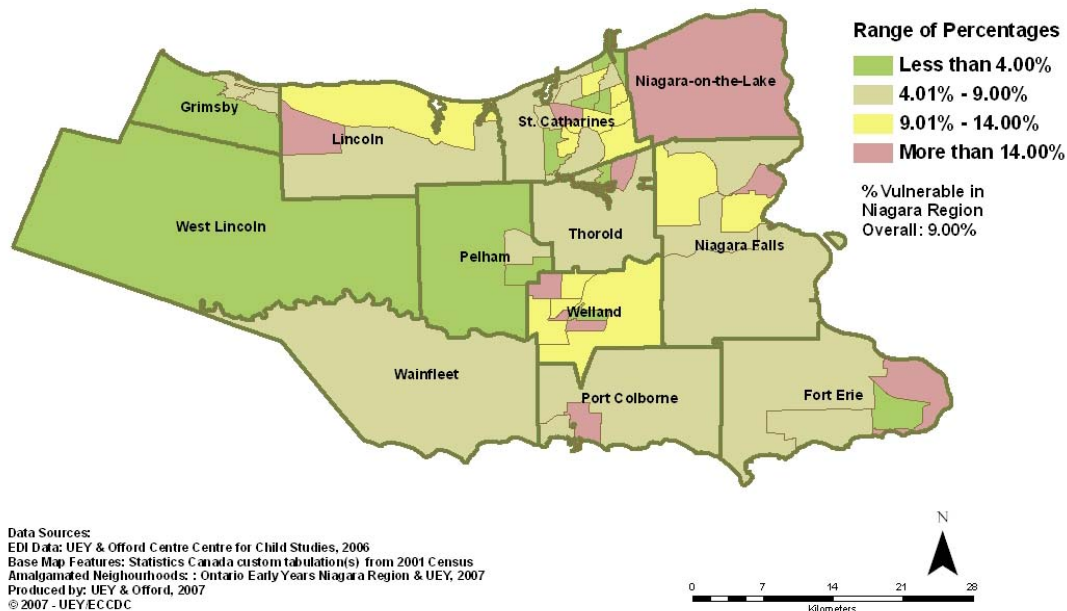


Chart 7 shows the Social Competence domain and its corresponding three sub-domains and also provides examples of questions on the EDI which make up each of the sub-domains.

Chart 7. Social Competence Sub-domains

Sub-domain	Examples
RESPONSIBILITY AND RESPECT	Follows rules and instructions; respects the property of others; demonstrates self-control; demonstrates respect for adults and other children; accepts responsibility for actions; etc.
APPROACHES TO LEARNING	Listens attentively; follows direction; completes work on time; works independently; works neatly and carefully; is able to solve day-to-day problems by him/herself; is able to adjust to changes in routines; etc.
OVERALL SOCIAL COMPETENCE	Overall social/emotional development; ability to get along with peers; is able to play with various children; shows self-confidence; etc.

Social Competence Results (continued)

percentages above the regional average on any of the sub-domains (doing well). Conversely, Niagara Falls, Port Colborne, St. Catharines, and Thorold had above regional not on track percentages on all three sub-domains (scoring poorly).

Summary of Rates of Vulnerability by EDI Domains

We can also look at the sub-domain level regionally and can pinpoint areas of particular strength and weakness. For example, at the regional level, a major area of concern is on gross and fine motor skills. In fact, all twelve municipalities showed weakness on this Physical Health and Well-being sub-domain.

Regionally speaking, senior kindergarten students in Niagara struggled the most, in terms of overall EDI domains, with Communication Skills & General Knowledge. In this domain, nine of twelve municipalities showed challenges with the Communicates Easily and Effectively element. Also of concern is the fact that seven of the twelve municipalities also showed weakness on having proficiency in their native language; participates in story-telling or imaginative play; and articulates clearly sub-domains. The hyperactivity and inattention sub-domain of Emotional Maturity may also be an area for concern, with eight of the twelve municipalities showing weakness.

This leads us to an examination of EDI results over-time and children in the Niagara Region with multiple challenges.

Children with Multiple Challenges

Map 12 illustrates the percentage of children who scored in the lowest 10th percentile on three or more of the five developmental domains of the EDI, by neighbourhood. This measure is referred to as the Multiple Challenge Index (MCI) and the national MCI rate was 4.3%. The regional MCI rate was 3.4%. Since this sample did not include children with special needs, it is clear that this proportion represents children who are not identified with having any special problems before entering kindergarten. There were several neighbourhoods in Niagara region specifically in Grimsby, St. Catharines, Thorold, West Lincoln, Niagara Falls, Fort Erie, Port Colborne, Pelham, and Welland where less than 2% of students showed multiple challenges.

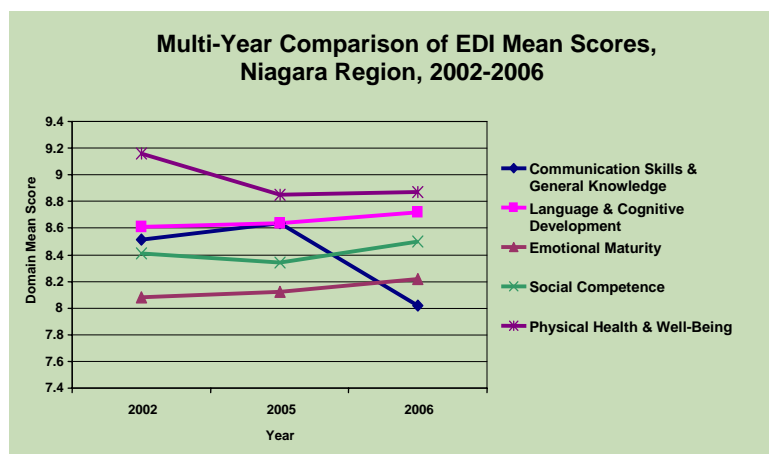
Select neighbourhoods in St. Catharines, Thorold, Welland, Port Colborne, Niagara Falls, Fort Erie, and Wainfleet had the highest percentages of students scoring below the 10th percentile on three or more domains (shown as yellow or red on map).

EDI Over-time Results

In Niagara, we have regional EDI scores for 2002, 2005, and 2006, as well as upcoming 2008 results (Ontario Early Years Niagara Region). We can look at the trends reflected in these scores to see how we are doing overall region-wide. Chart 8 shows the mean EDI scores of each of the five domains in 2002, 2005, and 2006.

An even more reliable over-time comparison are vulnerability rates. They were as follows: 26.3% in 2002, 26.5% in 2005, and 30.1% in 2006. This appears to suggest a trend of increased vulnerability.

Chart 8. Multi-Year Comparison of EDI Domain Mean Scores in the Niagara Region (2002, 2005 and 2006)



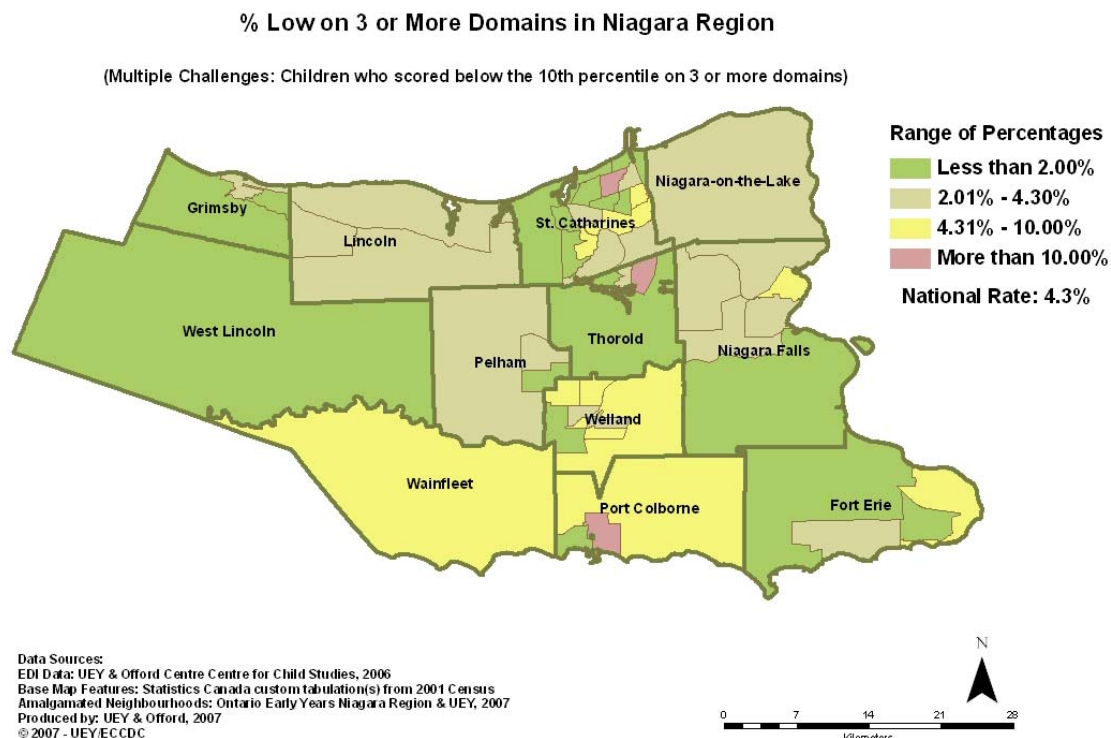
In the Niagara Region, mean EDI scores seem to be increasing over the years in three (3) domains: Language and Cognitive Development; Emotional Maturity; and Social Competence (had a slight decrease from 2002 to 2005 but increased again in 2006).

For the Physical Health and Well-being domain, we saw a decrease in scores from 2002 to 2005 but a slight increase in the period from 2005 to 2006. However, the 2002 level of mean score in this domain was not re-achieved.

Overall in Niagara, EDI scores have declined from 2002 to 2006 in the Communication Skills and General Knowledge domain. Niagara also had the highest percentage of vulnerability in this domain (16%). Out of the five sub-domains we saw that the challenges are primarily occurring in four areas: communicating easily and effectively; participates in story-telling or imaginative play; articulates clearly; and has proficiency in their native language. The only sub-domain showing low vulnerability was: adequate general knowledge. In terms of municipalities and the Communication Skills and General Knowledge domain, Grimsby scored well in all five sub-domains and West Lincoln, Lincoln, and Pelham scored well in four of the five sub-domains. Conversely, Thorold scored poorly in all five sub-domains. There were also some specific neighbourhoods with high vulnerability on this domain with over 25% of children scoring in the lowest 10th percentile.

Possible reasons for the variability in scores across the region in the Communication Skills and General Knowledge domain may be: immigration, English as a Second Language (ESL), and populations speaking neither English nor French. In order to more fully understand these results, additional comparison of these neighbourhood socioeconomic factors with 2008 EDI results in this domain will be required.

Map 12. Multiple Challenge Index by Neighbourhoods in Niagara Region (EDI 2006)



Factors which Increase Vulnerability Rates on the EDI

Studies have shown that there are factors which can increase vulnerability rates of children assessed on the EDI, across the national normative sample. Table 1 displays the different factors which can increase vulnerability risk. For example, if child health is low in a group, they are 2.35 times more likely of scoring in the vulnerable range on the EDI.

Table 1. Factors Increasing Rates of Risk on the EDI

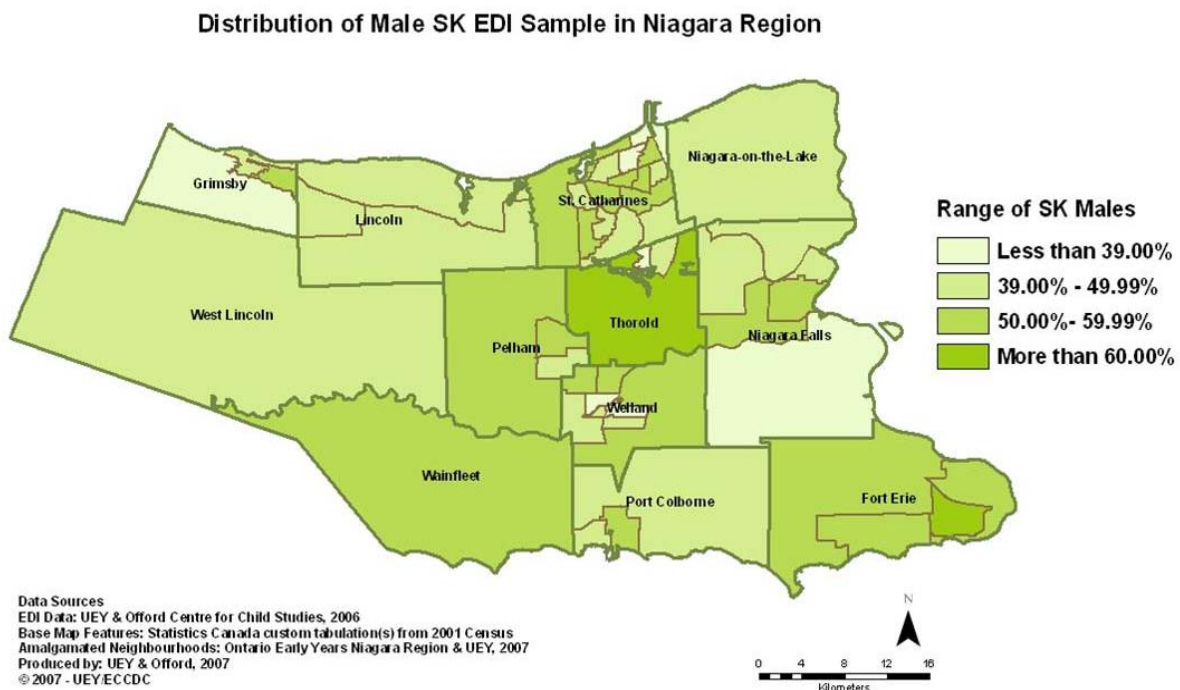
Factor	Increase in risk
Child health (low)	2.35
Gender (boys)	2.32
Income (low)	2.02
Family status (not intact)	1.83
Age (younger half)	1.36

Results by Gender

There were 1,412 boys in the 2006 regional EDI sample (48.3%). As shown in Table 1, boys are 2.32 times more likely to score in the vulnerable range on the EDI. Girls consistently score better on the EDI compared to boys. This is a consistent developmental phenomenon across all sites where the EDI has been implemented. Thus, gender should be taken into account when looking at vulnerable scores, especially in neighbourhoods with large percentages of boys. For example, the majority of the EDI sample in Thorold and the Crescent Park and surrounding area neighbourhoods in Fort Erie were more than 60% boys. Map 13 shows the distribution of boys across the Niagara region EDI sample.

Another factor that has an effect on EDI scores is age of the child. Children born earlier in the year scored better than children born later in the year. Again, this is a consistent developmental phenomenon: older children are, on average, more ready for school than younger children. According to Janus & Duku (2007), younger children (children born in the later half of the year) are 1.36 times more likely of scoring in the vulnerable range on the EDI.

Map 13. Distribution of Senior Kindergarten Boys in Niagara Region Sample (EDI 2006)



Results by Age

Table 2 displays ages of senior kindergarten students at the time of teacher assessment (Feb 2006-Mar 2006). Age was divided into three-month intervals. The categories are expressed as year-months of age: for example, 5-11 means age 5 years 11 months.

As shown in Table 2, most students in the 2006 Niagara Region EDI sample were five years and eight months to six years and one month of age (48.7% total). At the same time it should be noted that an additional 39.2% of the participating 3,014 senior kindergarteners were five years and two months to five years and seven months of age at the time the 2006 EDI was implemented.

Language is another factor that can impact EDI results, particularly in the Communication Skills and General Knowledge and Language and Cognitive Development domains. The next section of this report will examine this factor.

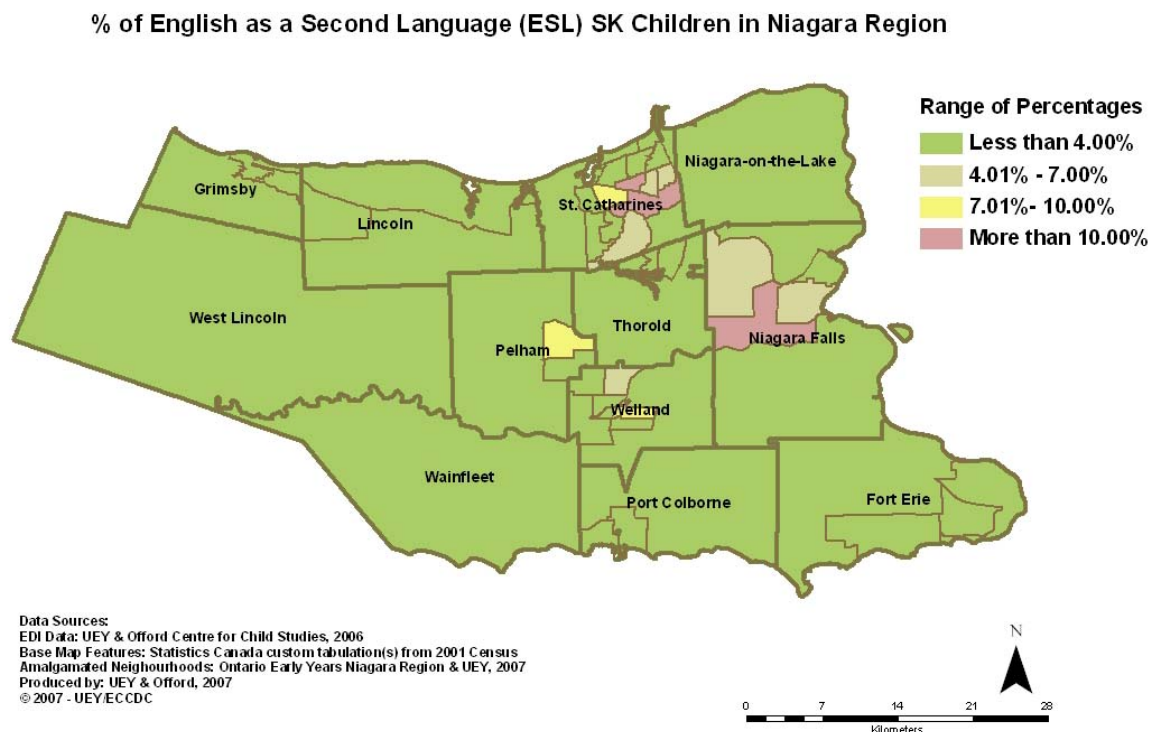
Table 2. Age Composition of 2006 EDI Sample

Age Category	Number	%
3-11 to 4-1	1	0.0
4-2 to 4-4	32	1.1
4-5 to 4-7	36	1.2
4-8 to 4-10	43	1.5
4-11 to 5-1	38	1.3
5-2 to 5-4	452	15.5
5-5 to 5-7	691	23.7
5-8 to 5-10	715	24.5
5-11 to 6-1	706	24.2
6-2 to 6-4	184	6.3
6-5 to 6-7	5	0.2
6-8 to 6-10	1	0.0
6-11 and up	0	0.0
Missing	17	0.6

Results by Language

As would be expected, children whose second language is English tend to score poorer on the EDI compared to those senior kindergarten students whose first language is English. Moreover, English as a Second Language (ESL) affects the Communication Skills and General Knowledge and Language and Cognitive Development domains particularly. Map 14 shows the distribution of ESL SK children in the Niagara Region.

Map 14. Percent of English as a Second Language Senior Kindergarten Children in the Niagara Region (EDI 2006)



Results by Language (continued)

As shown, the majority of the region shows low ESL status among the senior kindergarten students involved in the 2006 EDI (most of the region had less than 4% ESL). However there were a few pockets within Niagara Falls and St. Catharines where more than 10% of the senior kindergarteners were ESL students. Pelham's North Fonthill neighbourhood and the Haig in St. Catharines also showed rates between 7.01-10.00%. Thus, when looking at the Communication Skills and General Knowledge and the Language and Cognitive Development vulnerability domain scores of these neighbourhoods, take into consideration these higher percentages (see Maps 7 & 9).

Socioeconomic conditions such as income level, family status, and level of parent education can also have an effect on children's EDI scores. The next section of this study will look at these results for the Niagara Region.

2.2 Socioeconomic Factors

Human Resources and Social Development Canada has recognized that positive, healthy, and stimulating experiences in the first six years of a child's life are important factors in a child's future. Generally speaking, children thrive in families and communities that meet their developmental needs (Ramsay, 2006). Conversely, poor supports for children's needs reduce their quality of life and may increase the likelihood of experiencing future academic and social difficulties. Knowledge about the economic, social, and cultural conditions in which young children grow up is essential to understanding how the early years are shaped.

Examining the neighbourhoods where our children live, grow, and play assists the community in identifying areas of strength (assets) and need (challenges) and in making plans and taking action aimed at improving children's outcomes (HRSDC, 2006). There is growing evidence that strong, supportive communities help nurture healthy child development (Brooks-Gunn et al., 1993; Connor & Brink, 1999; Hoy & Ikavalko, 2005; McCain & Mustard, 1999; Willms, 2002). Friends, neighbours, community organizations, institutions, businesses, and other members of the community are powerful influences (ibid). Along with parents, they can provide children with the early foundations that lead to success in school and throughout their lives (Willms, 2002).

Mounting evidence has provided insight into how community environments can support early child development and improve outcomes for children (McCain & Mustard, 1999). The accumulative effect of multiple risk factors such as low income, unemployment, social assistance, lone parenting, and poor educational attainment may result in higher proportions of children being at-risk or vulnerable (Statistics Canada, 2001; Uey & Ontario Early Years Niagara Region, 2005).

Income

Being from low income families does not always mean that children will not do well on the EDI; however, it is a recognized factor in early learning and development. Map 15 shows average household income in the Niagara Region. The national average household income in 2001 was \$58,360 while the regional average household income was slightly lower at \$56,299.

There are several pockets in St. Catharines and Niagara Falls which display average household income at less than \$35,000 (shown in red on map). There were also areas displaying below national income averages (\$35,000 to \$58,360 - designated as yellow on map) in St. Catharines, Niagara Falls, Fort Erie, Port Colborne, Wainfleet, Lincoln, Pelham, Thorold, and a very small portion in Niagara-on-the-Lake and West Lincoln. Areas of high income were primarily in Niagara-on-the-Lake, Grimsby, Pelham, Lincoln, Wainfleet, Thorold, and West Lincoln. However there were pockets of above national average income in all 12 municipalities.

Additionally, there were some neighbourhoods with surprising results; despite low income levels, the senior kindergarten children showed particularly low vulnerability on the EDI. In these communities, children's development seemed less influenced by socioeconomic characteristics than we would predict (BC Atlas of Child Development, 2005).

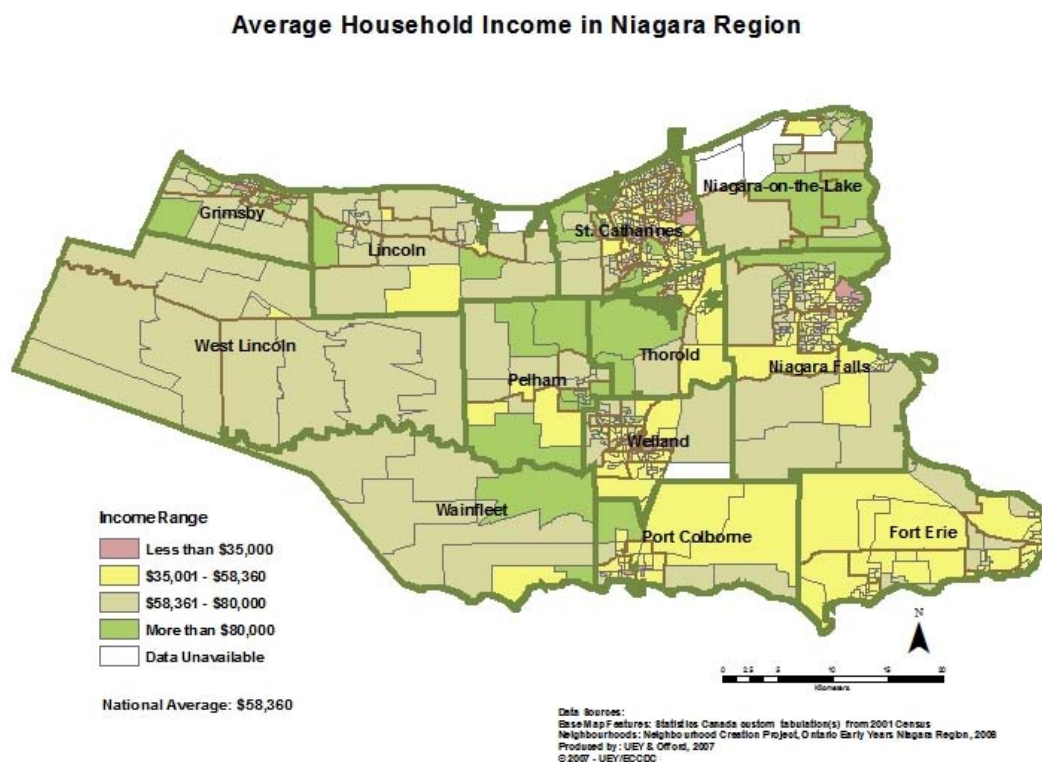
Important results!

The Ridgeway neighbourhood in Fort Erie and the Westlane neighbourhood in Niagara Falls showed that despite economic conditions, children seemed to fare quite well on the EDI. Also, the Eastdale & Market Square neighbourhoods in Welland had surprising low rates of vulnerability on the EDI.

We can pay particular attention to these "surprisingly resilient" neighbourhoods in order to learn what factors are protecting the children from low income influences. Does it have something to do with community resources and assets within the neighbourhood? For example, has a new community centre recently been built or an early years or social program been widely implemented in these areas? Or, is it something else completely?

On the other hand, there were also some municipalities/neighbourhoods that showed particularly high income but their EDI results were below expected levels (i.e. particular domains and/or areas in Niagara-on-the-Lake, Pelham, and Lincoln). It is very important to understand factors inherent within communities which may be influencing school readiness. All families face increasing levels of stress and complex, changing conditions. All lifestyles and types of families have unique needs and challenges. Through careful and considered examination, we can better understand these changing conditions and needs and then adopt best practices and develop appropriate responses. Niagara can also support poverty reduction plans and initiatives, particularly those that assist families with young children. One aspect of this examination and subsequent decision making is family structure, or rate of lone parent families.

Map 15. Average Household Income in the Niagara Region (2001 Census)



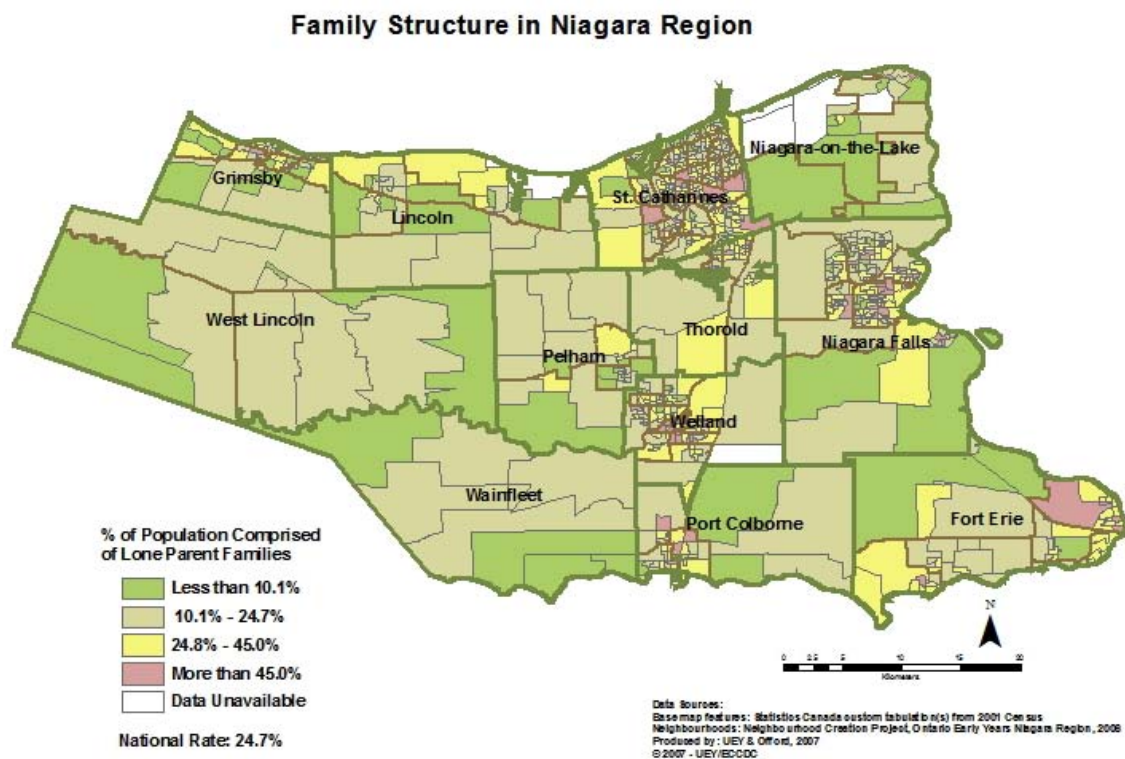
Family Structure

Family status can also have an impact on readiness to learn in children. Single parent families tend to have lower income and one parent has less time than two parents can offer. The national rate of the percentage of the population comprised of lone parent families was 24.7% in 2001.

As displayed in Map 16, there were pockets within the region where more than 45% of the population was comprised of lone parent families (shown in red on map). These areas include Fort Erie, Welland, Port Colborne, Thorold, Grimsby, Niagara-on-the-Lake, Niagara Falls, and St. Catharines. There were also areas in Grimsby, Lincoln, Pelham, and Thorold where the rates also exceeded the national average (yellow on map). However, the majority of Niagara-on-the-Lake, West Lincoln, Wainfleet, and Pelham had below national averages of lone parent families (shown in beige and green on map).

Levels of parent educational attainment can also influence their children's academic achievement.

Map 16. Family Structure in the Niagara Region (2001 Census)



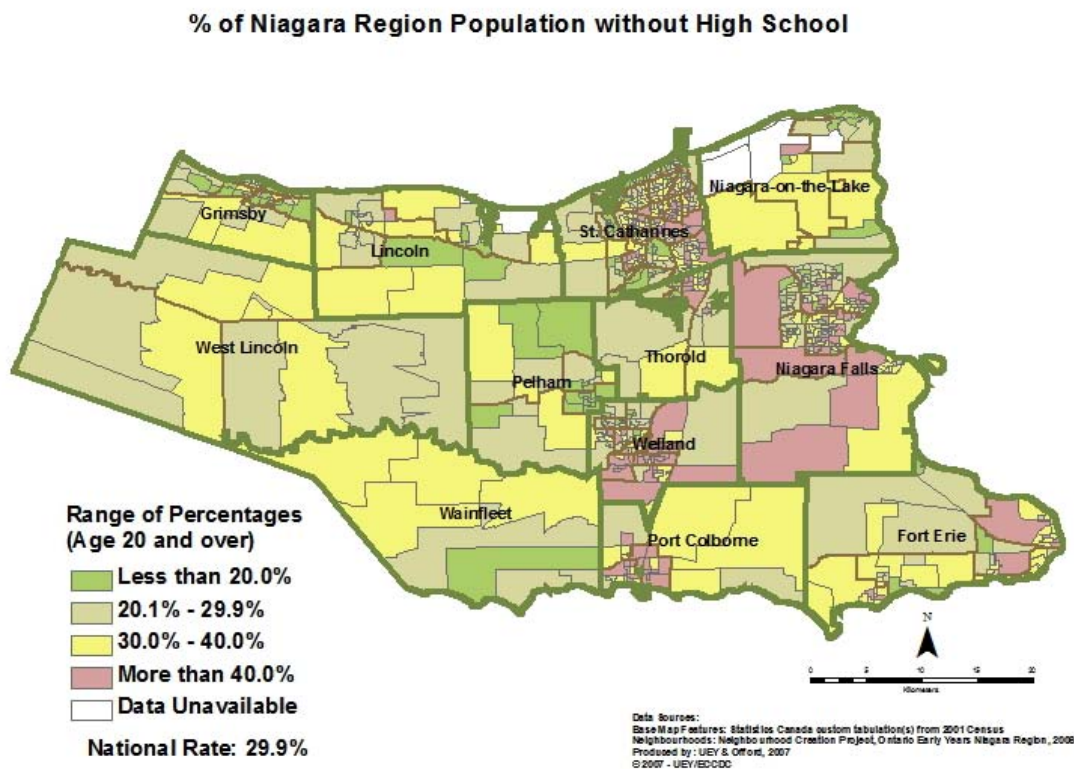
Education

Map 17 displays the percentage of the Niagara regional population aged 20 and older who had not obtained a high school diploma in 2001, as compared to the national average of 29.9% (2001). All municipalities in the region contain neighbourhoods where the education level is below the national average.

Approximately half of Welland and Niagara Falls as well as significant portions of St. Catharines, Port Colborne, and Fort Erie showed more than 40% of their population were without high school diplomas. There were also distinct areas within Grimsby, Lincoln, Pelham, and Wainfleet which showed less than 20% of residents aged 20 and older who had obtained a high school diploma. Research has shown a link between low levels of educational attainment among parents and academic challenges in their children.

Immigration has also been linked to low income and, obviously, domains related to language.

Map 17. Percentage of the Niagara Region Population Without High School (2001 Census)



Immigration

Compared to national data, the Niagara Region had below average immigration rates based on the 2001 Census statistics. Map 18 shows the percentage of the population who immigrated to Canada (between the years of 1996-2001) by neighbourhoods in the Niagara Region, as compared to the national average (3.3%).

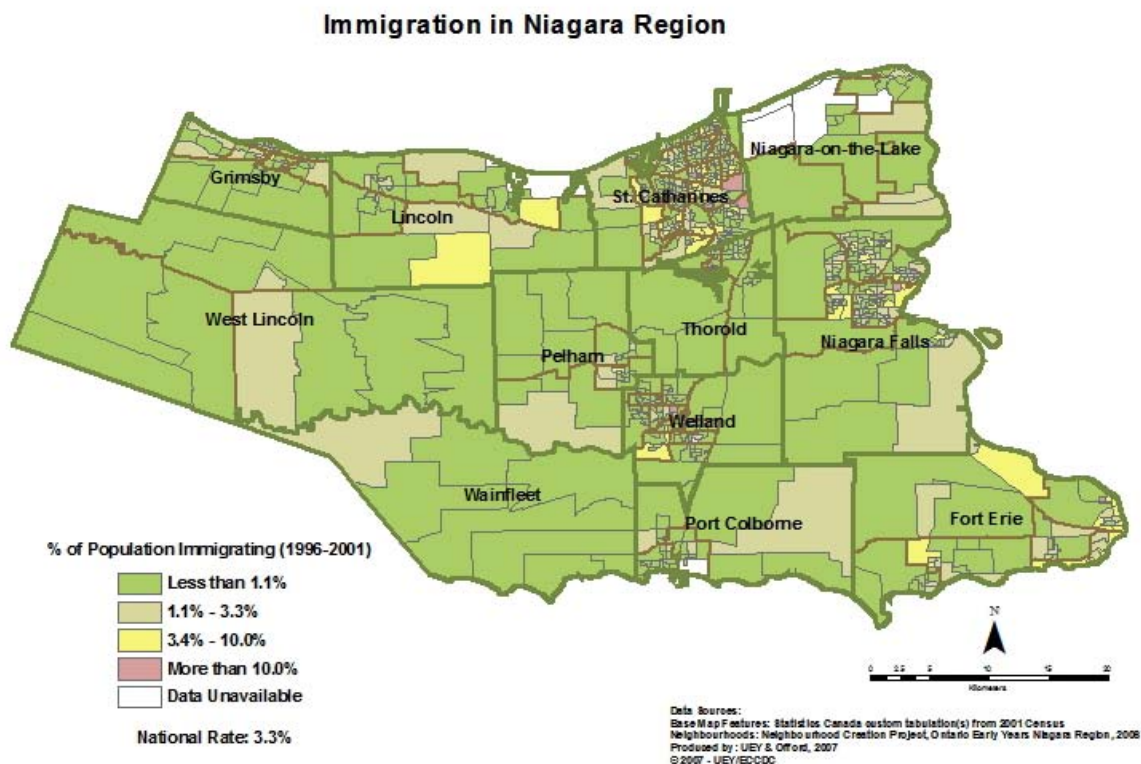
Immigrant families and their young children often face multiple challenges and significant barriers to accessing services and there are neighbourhoods within Lincoln, St. Catharines, Niagara Falls, Welland, and Fort Erie with immigration rates above the national average. On the other hand, the majority of all 12 municipalities had less than 1.1% of their overall population immigrating between the years of 1996 and 2001.

Aboriginal Population

Just over 1.3 million people reported having at least some Aboriginal ancestry in 2001, representing 4.4 % of the total population (Statistics Canada, 2001 www12.statcan.ca/english/census01/Products/Analytic/companion/abor/canada.cfm).

Overall in the Niagara Region, there is a low Aboriginal population. However, it should be noted that there is under-reporting across Canada due to the nature of the Census as approximately 30,000 to 35,000 people were living on reserves and settlements and data were not collected for these individuals (Statistics Canada, 2001 Census: www12.statcan.ca/english/census01/Products/Analytic/companion/abor/canada.cfm).

Map 18. Percent of Population Immigrating to the Niagara Region between 1996 and 2001 (2001 Census)



The total Aboriginal population as a percentage of the total population in the Niagara Region was 1.3%. Table 3 displays the municipalities of the Niagara Region with their corresponding Aboriginal population as a percentage of the total population.

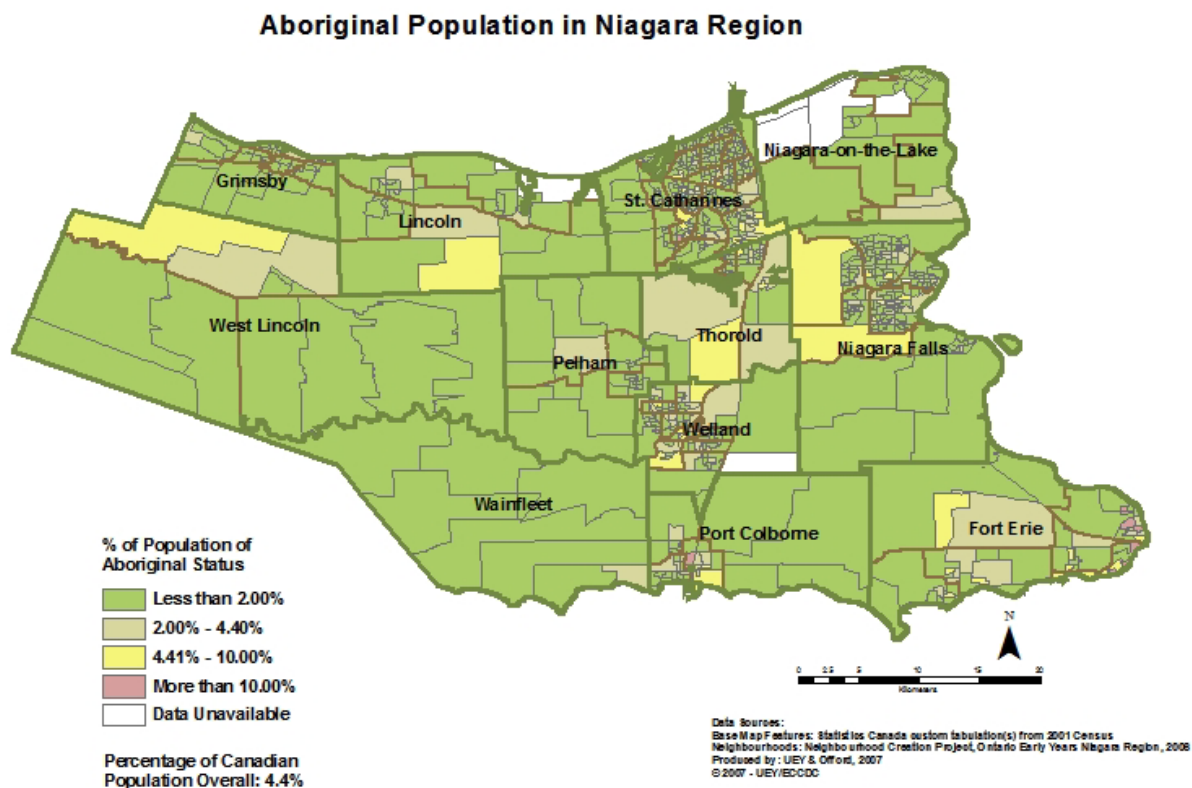
Closer examination of the data reveals that, despite anticipated under-reporting and lower than national overall regional and municipal percentages of population of Aboriginal descent, there are neighbourhoods within Niagara that have concentrated pockets of higher percentages. This is displayed in Map 19.

Table 3. Aboriginal Population as a Percentage of Total Population by Municipality in the Niagara Region (2001 Census)

Municipality	Percentage of Aboriginal Population
Pelham	0.3%
Grimsby	0.4%
Lincoln	0.9%
Wainfleet	0.9%
Niagara Falls	1.1%
St. Catharines	1.2%
West Lincoln	1.4%
Thorold	1.5%
Port Colborne	1.7%
Welland	1.7%
Fort Erie	3.2%
Niagara Region Average	1.3%

As shown on Map 19, there are concentrated pockets of higher than national average percentage of Aboriginal population in neighbourhoods within St. Catharines, Welland, Port Colborne, Niagara Falls, and Fort Erie. High rates of poverty among the Aboriginal population in Canada is also well known. Let us now turn to measures which act as signposts to poverty.

Map 19. Aboriginal Population in Niagara Region (2001 Census)



Low Income Cut-offs (LICOs)

LICOs are income thresholds, determined by analyzing family expenditure data, where families devote a larger share of income to the necessities of food, shelter, and clothing than the average family would. Several unofficial poverty lines have been developed in Canada; and although Statistics Canada is careful to say that the LICO is not a poverty line measure, it is commonly used as such (Canadian Council on Social Development, 2000. Available at: www.ccsd.ca/pr/lico00aj.htm).

Map 20 displays the LICO percentages in the Niagara Region in 2001. Using the before-tax LICO in 2001, 16.2% of Canadians lived in poverty (Arai & Burke, 2007). In the Niagara Region approximately 14% of the population lived in poverty (Arai & Burke, 2007).

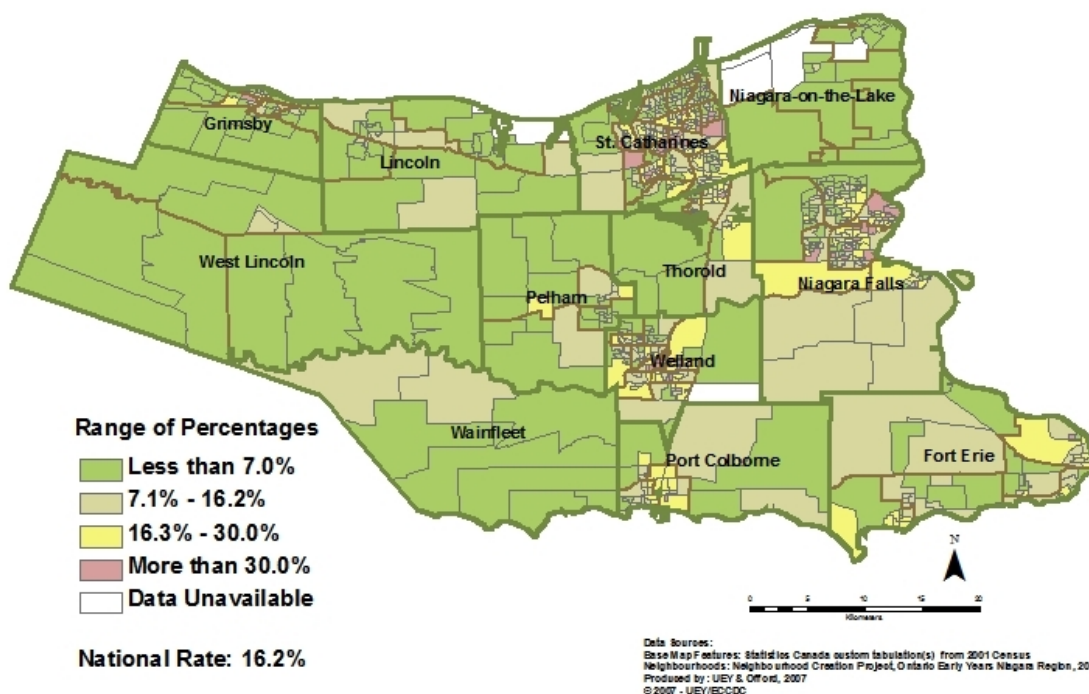
A significant portion of St. Catharines had LICOs above the national average (16.2%), particularly in the neighbourhoods of: Downtown, Queenston, Fairview, and Facer. Other neighbourhoods within the Niagara Region which had above national averages in terms of LICO were: Elgin, Drummond, and Victoria in Niagara Falls; Eastdale, Market Square, and Cordage in Welland; Three Bridges in Port Colborne; Crystal Beach and Fort Erie North in Fort Erie; North Fonthill in Pelham; a small area in Grimsby; Stonebridge and Three Bridges in Port Colborne; and the Thorold Proper neighbourhood within Thorold.

The combined two maps shown as Map 21 display 'above or below' national average percentages of LICO from the 2001 Census and vulnerable children on the overall 2006 EDI by municipal neighbourhoods in Niagara. This provides a closer look at these two sets of results in the region. This comparison is also particularly relevant as 2001 LICO results represent the community conditions children who participated in the 2006 EDI were born into.

The following municipalities and/or their neighbourhoods had lower than national average percentages on both LICO and EDI vulnerability measures: Grimsby; West Lincoln; Wainfleet; Lincoln (South Beamsville); Welland

Map 20. Low Income Cut Off (LICO) Percentages in the Niagara Region (2001 Census)

Low Income (LICO) Percentages in Niagara Region

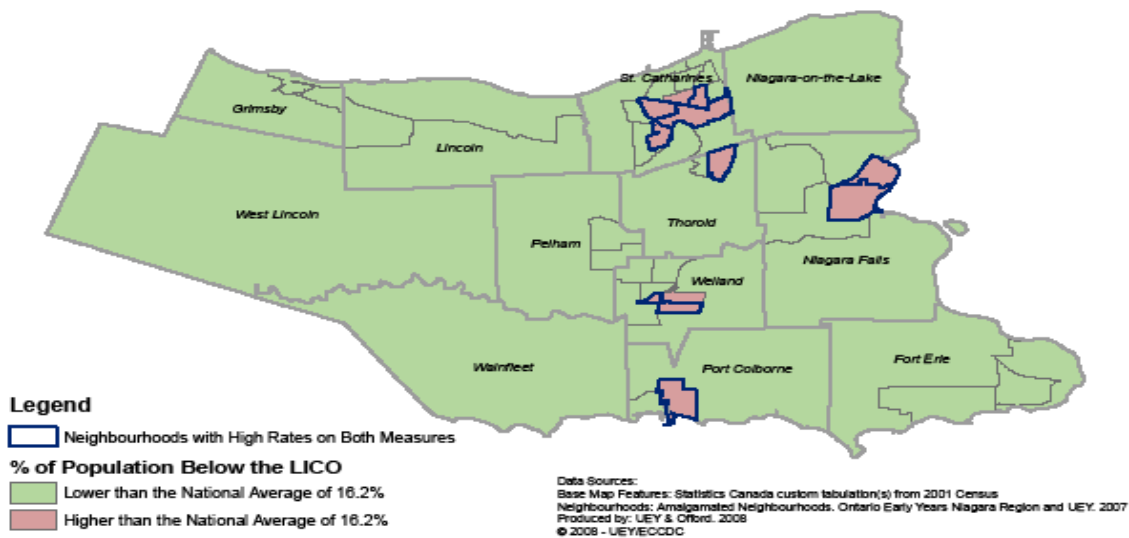


(Chippawa Park, Seaway Mall); Fort Erie (Ridgeway); St. Catharines (Louth/Port Dalhousie/Lakeshore, Port Weller, Martindale, New Western Hill, Carlton/Bunting, and Glenridge/Brock); Thorold (Port Robinson, Allanburg, Thorold South, St John's/Rural); and Niagara Falls (Stamford, Beaverdams, Westlane, and Chippawa/Rural). However, the regional LICO rate was 12.7% in 2001, suggesting there may be even more correspondence between LICO and EDI.

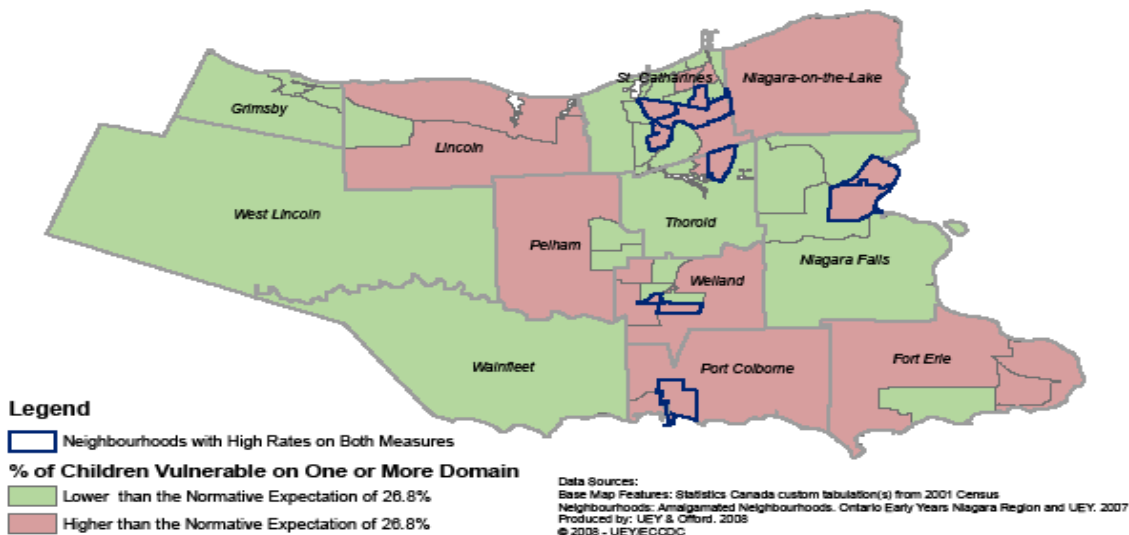
Neighbourhoods outlined in blue have percentages higher than the national averages on both LICO and EDI vulnerability measures and may be areas where poverty is impacting child outcomes and services could be targeted. These include: St. Catharines (The Haig, Facer, Queenston/Downtown, and Old Western Hill); Thorold (Thorold Proper); Niagara Falls (Elgin and Drummond/Victoria); Welland (Cordage & West Main); and Port Colborne (Three Bridges).

Map 21. LICO (2001 Census) and Vulnerability (2006 EDI) Percentage Comparisons in the Niagara Region

Low-Income Cut-Off (LICO) Percentage Comparisons



EDI Vulnerability



Low Income Cut-offs (LICOs) continued

There were also neighbourhoods with above national average LICO percentages yet lower than national average EDI vulnerability percentages, suggesting some sort of positive mitigating influence (i.e. concentration of services, best practices, etc.). These include: St. Catharines (Fairview) and Welland (Eastdale & Market Square).

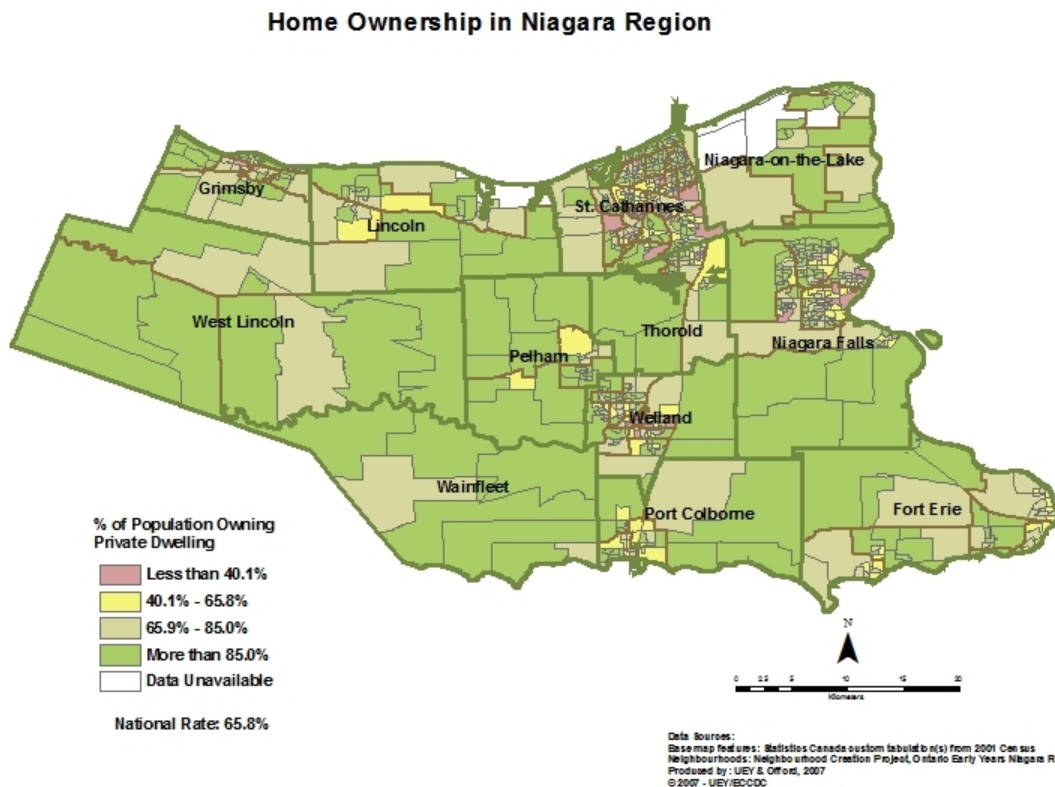
Many neighbourhoods had low LICO percentages yet higher than national average EDI vulnerability, suggesting other negative mitigating influences and perhaps are a signpost for universal and accessible services. These include: Niagara-on-the-Lake; Lincoln (North Beamsville & Vineland/Jordan, Campden/Tintern); St. Catharines (Grantham East & West, Merritton); Thorold (Confederation Heights/Beaverdams); Pelham (North & South Pelham, Fenwick, Effingham, Ridgeville); Welland (Woodlawn & Niagara College, Welland South & South Pelham, Rural Welland/Cooks Mills & Ontario Rd/Dain City); Port Colborne (Sugarloaf, Stonebridge & Bethel/Gasline/Sherkston); and Fort Erie (Stevensville & Crystal Beach, Crescent Park & Surrounding Area, Fort Erie North & Lakeshore).

Owning the home a child lives and grows up in is an asset that can influence early learning and development results, primarily through housing costs, neighbourhood conditions, and residential stability.

Home Ownership

Map 22 displays the distribution of an important community asset – the percentage of residents who own their home. Overall, the Niagara Region displays above national average rates of home ownership with the majority of all 12 municipalities having more than 85% of residents owning their homes. The downtown cores of the larger

Map 22. Percentage of the Population Owning their Private Dwelling (2001 Census)



cities (St. Catharines, Niagara Falls, Welland) in the Region showed low (less than 40.1% - red on map) levels of home ownership.

Residential Stability

Home ownership is also an important factor in residential stability. Changing neighbourhoods, schools, and care arrangements can also affect early learning and development.

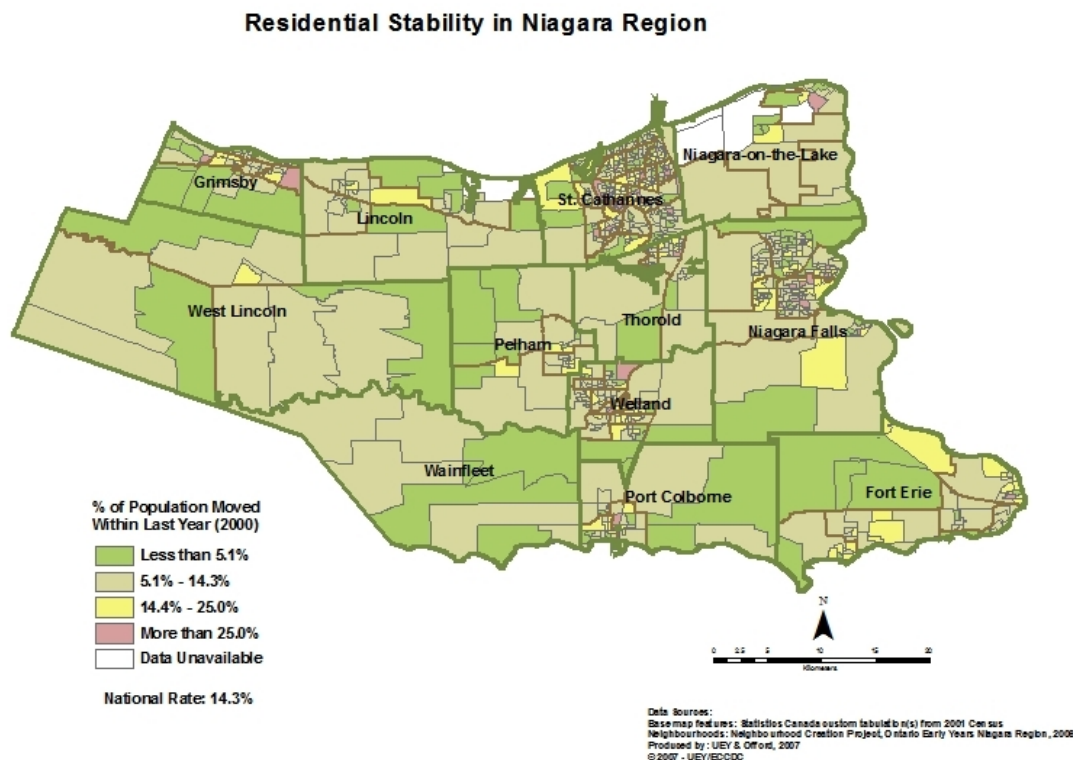
There are neighbourhoods within all municipalities, except Wainfleet, that had higher than the national rate (14.3%) of the population who moved in the previous year (2000). Another important factor to consider is the cost of housing compared to income levels.

Housing Stress Index

The Housing Stress Index is the percent of households that are spending 30% or more of their gross income on shelter costs (Human Early Learning Partnership, 2006. <http://ecdportal.help.ubc.ca/faq.htm>). This includes both renters and home owners. For renters, 'shelter costs' includes rent. For homeowners it may include mortgage or similar payments (Human Early Learning Partnership, 2006).

http://ecdportal.help.ubc.ca/pubMaps/BC/SchoolDistrict/sd34_Abbotsford/SES/sd34_Abbotsford_SES2001_2006-Oct-11.pdf).

Map 23. Percentage of the Population who Moved within Last Year - 2000 (2001 Census)



Housing Stress Index (continued)

The national rate for the housing stress index is 22.95% meaning that, on average in 2001, Canadians spent 22.95% of their gross income on shelter costs. As you can see on Map 24, there were numerous areas shaded in yellow, indicating that between 22.96% and 40% of Niagara's population in these areas spend more than 30% of income on housing costs. There are also pockets within St. Catharines, Niagara Falls, and Port Colborne where more than 40% of the residents spend disproportionately more on housing costs than ideal (red on map).

In St. Catharines, 11 out of 17 neighbourhoods had pockets within them where residents were spending more than 40% of their income on shelter. Furthermore, the majority of the St. Catharines downtown core spent more than 40% of their gross income on shelter. In Niagara Falls the majority of the Elgin and Drummond/Victoria neighbourhoods spent above 22.95% of their income on shelter. The Three Bridges neighbourhood in Port Colborne also showed significant challenges on this measure (red and yellow).

If we were to combine results from the most influential socioeconomic indicators for outcomes among children 0-6 years of age, what might that information reveal?

Social Risk Index

The Social Risk Index (SRI) can serve as a tool to help communities effectively allocate resources to meet the needs of children and their families who live in areas that experience the negative effects of multiple risk factors (HRSDC, 2006). Figure 2 illustrates the four categories of risk and the number of risk factors within those categories that were used in mapping the results in Niagara neighbourhoods.

Map 24. Housing Stress Index in Niagara Region (2001 Census)

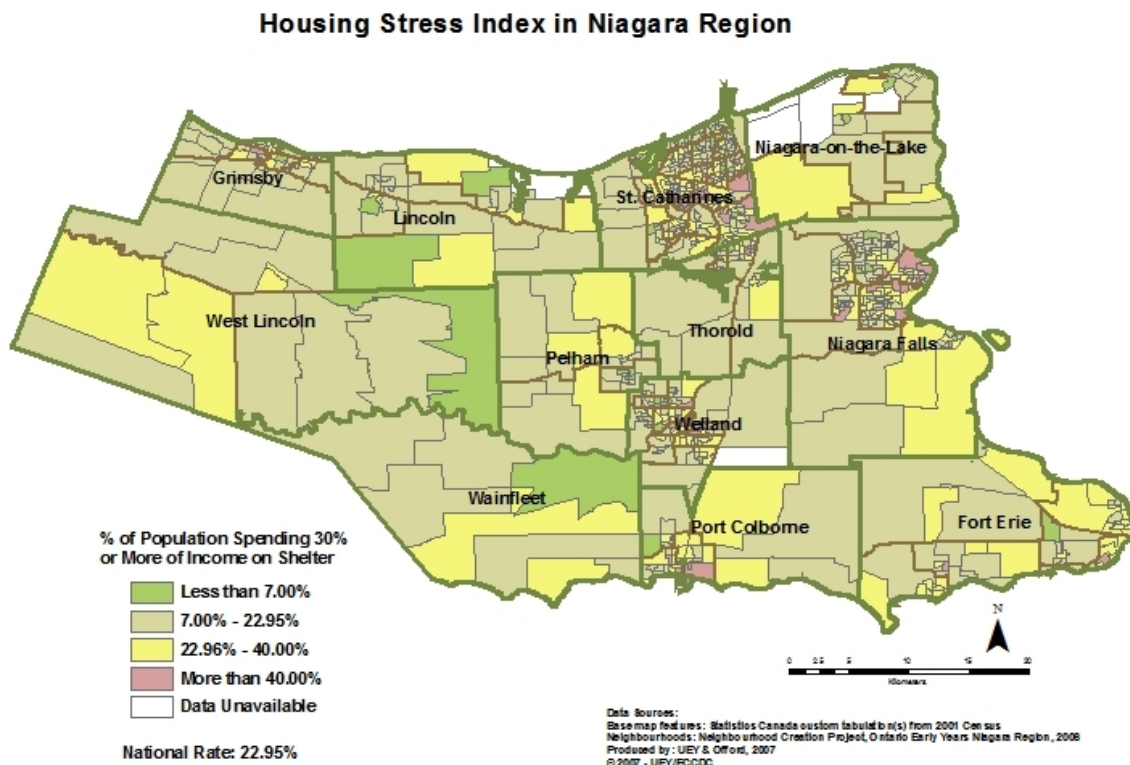


Figure 2. Levels of Social Risk

Low Risk 0 to 2 Risk Factors	Somewhat Low Risk 3 or 4 Risk Factors	Somewhat High Risk 5 or 6 Risk Factors	High Risk 7 of More Risk Factors
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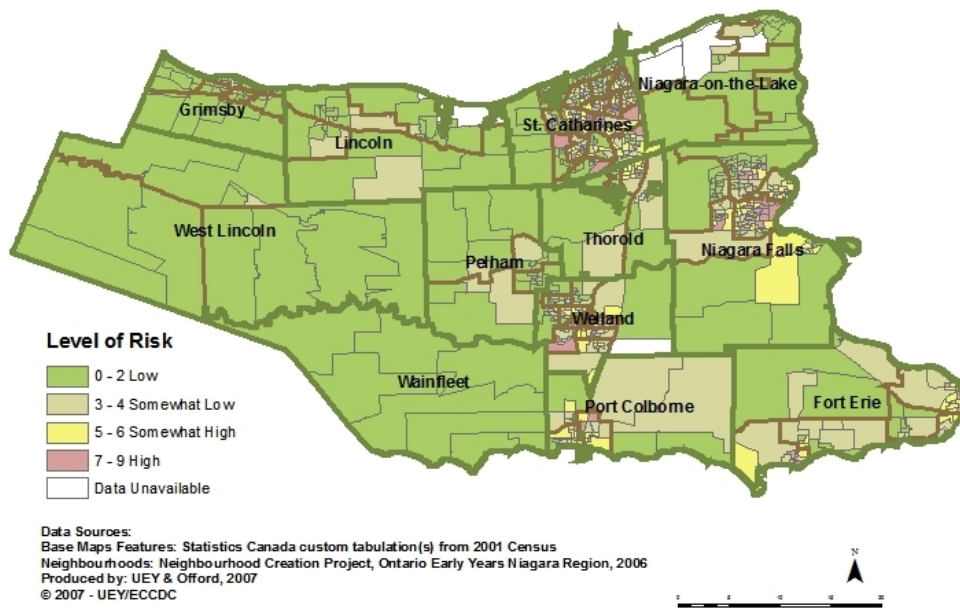
The SRI provides a composite measure of socioeconomic risk in communities and was developed to provide a general picture of neighbourhoods and the number of potential challenges they faced. Statistics Canada determined the level of risk for each neighbourhood based on data from the 2001 Census. Neighbourhoods were considered to have more risk if they reported higher levels of risk factors. The Social Risk Index is comprised of the following factors:

Figure 3. Social Risk Index Factors

1. Employment Rate	7. Immigrant Status
2. Educational Attainment	8. Reliance on Government Transfers
3. Family Status	<ul style="list-style-type: none"> • Employment Insurance • GST/HST • Provincial Refundable Tax Credit • Canada Pension Plan • Child Tax Benefits • Social Assistance • Old Age Security • Workers Compensation
4. Mobility	
5. Language	
6. Home Ownership	9. Average Household Income

Map 25. Social Risk Index in the Niagara Region (2001 Census)

Social Risk Index (SRI) in Niagara Region



Map 25 outlines SRI levels in the Niagara Region. There were several municipalities that showed low and somewhat low social risk (shown in green and beige): all of West Lincoln, Wainfleet, Grimsby, Lincoln, Pelham, Niagara-on-the-Lake; the majority of Thorold, Fort Erie, and Port Colborne, as well as approximately half of Niagara Falls, St. Catharines, and Welland. There were pockets of somewhat high to high social risk (yellow and red) located in the downtown core of St. Catharines, in Welland South, West Main, Eastdale, Cordage, and Chippawa Park Area neighbourhoods of Welland, as well as high density pocket areas in Elgin and Drummond/Victoria neighbourhoods in Niagara Falls.

While overall socioeconomic conditions within Niagara may generally reflect national averages and good results, there are clearly areas within municipalities across the region where measures may be impacting early learning and development in children 0-6 years of age. Let's now look at the community resources available for these young people and their parents and caregivers.

2.3 Community Resources

Families are the basic social unit of human societies. They nurture the young and ensure the survival of the species but they have never done it alone (McCain, Mustard & Shanker, 2007). Urie Bronfenbrenner, the forefather of ecological systems theory, describes how child development occurs within the context of systems and relationships that form their environment. There are systems around each child that act as protective or risk factors in a child's life including those closest to him/her - the family and child care provider. Also important are relationships that deal with the child indirectly such as the parents' connection with his/her teacher. Finally more external structures such as community based family resources and parental work schedules also play a role. The child may not be directly involved at this level, but he/she does feel the positive or negative impact of this interaction. A more outer layer, that has the least effect on the child, includes factors such as cultural norms and rules, and laws of society. All layers affect a child's growth and development in a cascading manner. For example, cultural values can affect flexible parental work schedules or length of maternity leave and a parent's relationship with their child's teacher may influence how the child feels about his/her teacher and school.

Neighbourhood influences on child development are extremely important as neighbourhoods are where children not only live, but play, grow, laugh, and learn. Neighbourhoods can also influence children's school readiness. Support provided by neighbours and the sense of community felt within the neighbourhood contribute to children's competence and well-being (Freiler, 2004).

When looking at early child development, it is important to understand how communities are providing their residents with local resources. Community resources for families with children aged 0-6 in Niagara have been mapped regionally, according to six categories: education; health and wellness; social; sports and recreation; arts, entertainment and multicultural; and special interest (faith-based). Note that these maps represent resources current as of 2007 (UEY Community Resource Inventory – CRI) and are also of interest to caregivers and other early years service providers.

Table 4 shows that, of the six different types of resources, the most prevalent were sports and recreation and special interest (faith-based), and the least number of resources were found in the social category.

Community Resource Booklets which include mapped resources and listings for all twelve municipalities are available online at: www.uey.eccdc.org/niagararegion.php.

Across the region, rural areas tend to lack resources as they serve less people, while the more urban areas have many more resources as well as people to serve. Somewhat surprising were the numerous resources in almost every category in most of Niagara Falls, including the more rural areas surrounding the downtown core. Compared to the rest of the Region's municipalities, Fort Erie seems to have generally more resources. The

western portion of Niagara seems to lack many resources, perhaps due to lower population in these municipalities overall. However, it should be noted that some parts of western Niagara also have growing 0-6 year old populations.

The following maps display the distribution of resources in Niagara.

Educational Resources

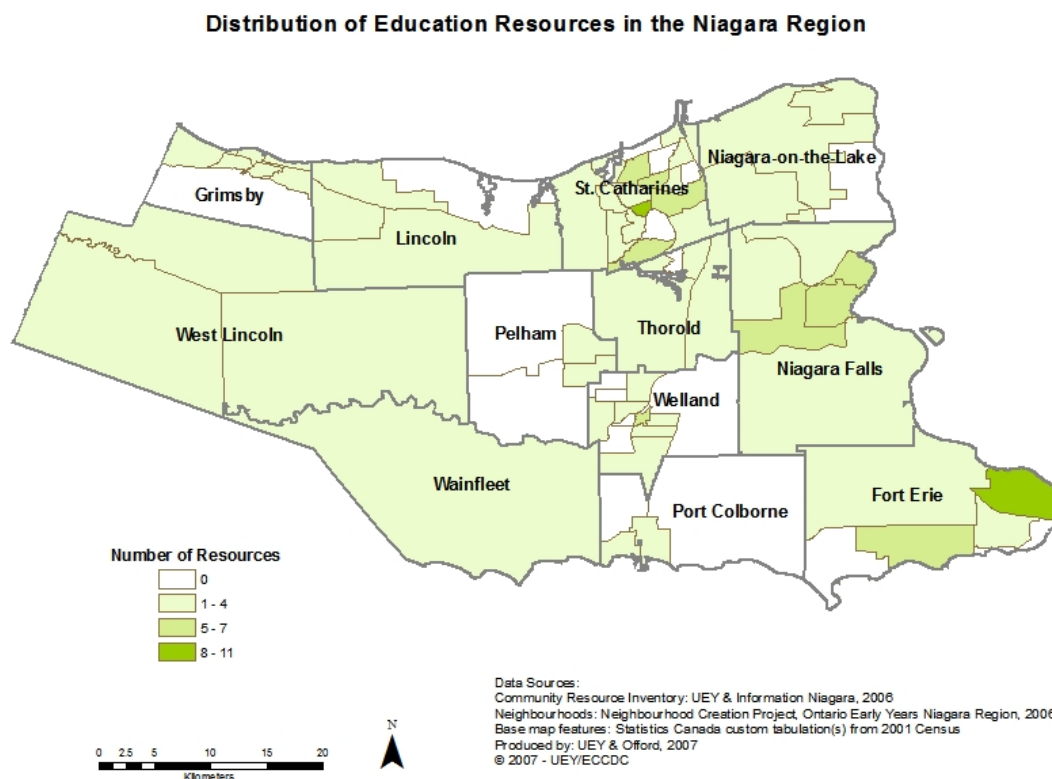
Educational resources do not include formal schools, but do include libraries and Ontario Early Years Centres, as well as more specialized educational programs and services such as Speech Services, Autism Chapter of Niagara, Learning Disabilities Association, etc. Map 26 displays the educational resources in the Niagara Region, current as of 2007. In total there were 172 educational type resources located in the Region of Niagara.

There were only two neighbourhoods with more than eight resources located in them: the Downtown neighbourhood of St. Catharines and the Fort Erie North neighbourhood. As well, the downtown cores of St. Catharines, Niagara Falls, and Welland appear to have had five to seven educational resources to support children 0-6 years of age and their parents/caregivers. However, the majority of rural areas in the Niagara Region had less educational resources. In fact, nine of the twelve municipalities had at least one neighbourhood with no educational resources.

Table 4. Number of Different Types of Resources in the Niagara Region (CRI 2007)

Type of Resource	# of resources in Niagara Region
Sports & Recreation	420
Special Interest	319
Educational	172
Health & Wellness	141
Arts, Entertainment and Multicultural	105
Social	78

Map 26. Distribution of Education Resources for Children 0-6 in the Niagara Region (CRI 2007)



Educational Resources (continued)

About half of Grimsby, approximately a quarter of Lincoln, the majority of Pelham, about half of Welland, the majority of Port Colborne, and pockets within Niagara-on-the-Lake, St. Catharines, Thorold, and Fort Erie all had no (0) educational resources.

Health and Wellness Resources

In 2007, there were 141 health and wellness type resources servicing families with children 0-6 years of age and their parents/caregivers in the Niagara Region. The Health and Wellness resources shown in Map 27 include walk-in clinics, hospitals, and health and wellness support centres such as the Hearing Society, Red Cross Society, Diabetes Association, etc.

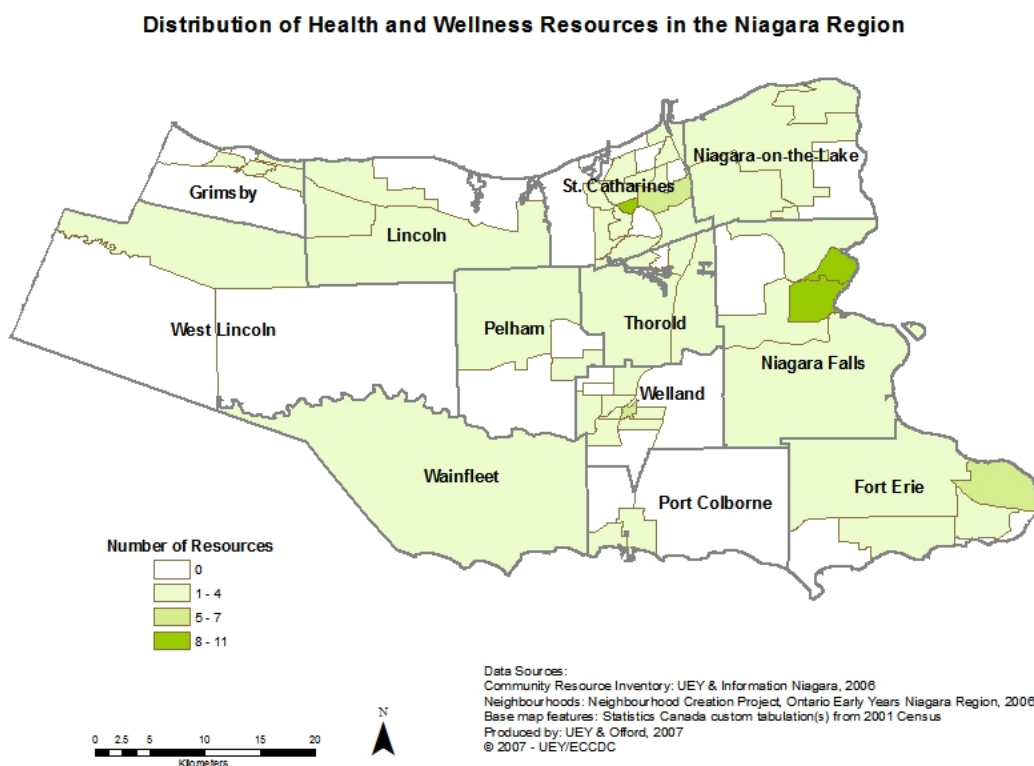
As displayed in dark green on the map, there were three neighbourhoods that had eight to eleven health and wellness resources: the Elgin and Drummond/Victoria neighbourhoods in Niagara Falls and the Downtown neighbourhood in St. Catharines. There were another three neighbourhoods that had five to seven resources within them: Queenston in St. Catharines, Market Square in Welland, and Fort Erie North.

Eleven out of twelve of the municipalities had at least one neighbourhood that did not have any health and wellness resources (Wainfleet is the exception). Municipalities that seemed to be significantly lacking health and wellness resources were the smaller, more rural areas of Grimsby, West Lincoln, Lincoln, Pelham, and Niagara-on-the-Lake. However, overall Port Colborne seemed to show a considerable lack of health and wellness supports.

Arts, Entertainment and Multicultural Resources

There were 105 Arts, Entertainment and Multicultural resources in the Niagara Region in 2007. These types of resources include cultural centres, theatres, museums, and heritage sites.

Map 27. Distribution of Health & Wellness Resources for Children 0-6 in the Niagara Region (CRI 2007)



As shown in Map 28, the majority of rural municipalities had little or no arts, entertainment, or multicultural resources. All of West Lincoln, the majority of Grimsby, Lincoln, and Thorold, and a large portion of Welland and Port Colborne showed no arts, entertainment, and multicultural resources. On the other hand, the Stamford neighbourhood of Niagara Falls and the Old Town neighbourhood of Niagara-on-the-Lake had the most resources per neighbourhood, with five to eight listings each. Overall, Niagara Falls seemed to have multiple resources across the whole municipality.

Social Resources

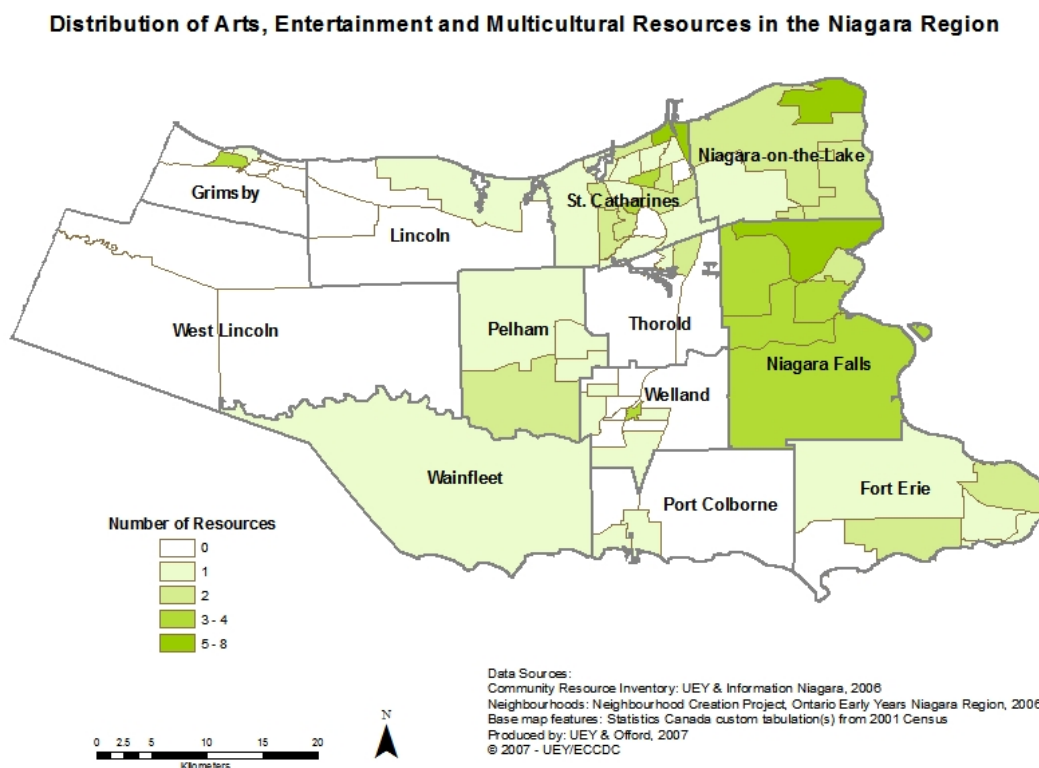
Examples of social type resources shown in Map 29 (page 45) include services such as Employment Opportunities Programs, women's shelters, Out of the Cold programs, refugee assistance centres, Community Care centres, Salvation Army sites, St. Vincent de Paul sites, etc. Social resources are those considered to meet the basic needs of children 0-6 and their parents/caregivers.

In 2007, there appeared to be an overall lack of social resources in the region. In fact, there were only 78 social type resources for families with children aged 0-6 serving Niagara. As shown in white on Map 29, all of Wainfleet, and the majority of Grimsby, West Lincoln, Pelham, Lincoln, Niagara-on-the-Lake, Port Colborne, and Fort Erie had little to no social resources. While rural areas are understandably harder to justify locating services in, due to low population numbers, this does mean that accessibility to these resources can become an issue. There were three neighbourhoods that had seven to nine social resources: Downtown St. Catharines, Market Square in Welland, and Fort Erie North.

Sports and Recreation Resources

The types of resources captured in this category include: arenas, pools, soccer clubs, dance schools, etc. Of the six categories of resources mapped regionally, there were the most sports and recreation type resources (420).

Map 28. Distribution of Arts, Entertainment and Multicultural Resources for Children 0-6 in the Niagara Region (CRI 2007)



Sports and Recreation Resources (continued)

As displayed in Map 30, it seems as though there were several areas with plenty of this type of resource. There were also many areas that lacked these types of resources all together. For example, the neighbourhoods of Virgil, downtown St. Catharines and Grimsby, and the more urban half of Fort Erie had five or six sports and recreation resources. On the other hand, the majority of West Lincoln and Grimsby and the rural areas of Lincoln, Welland, Port Colborne, Thorold, St. Catharines, and Niagara-on-the-Lake have absolutely no sports and recreation resources. Wainfleet, Niagara Falls, Pelham, and Fort Erie were the only municipalities to have at least one sports and recreation type resource in every neighbourhood. Given declining means in Physical Health and Well-being in the region over time, it may be useful to examine barriers to access and family activities. Additional related information gathered from the preliminary results of the Parent Interviews and Direct Assessments of Children Survey (PIDACS 2007) can be found online at: www.uey.eccdc.org/reports.php.

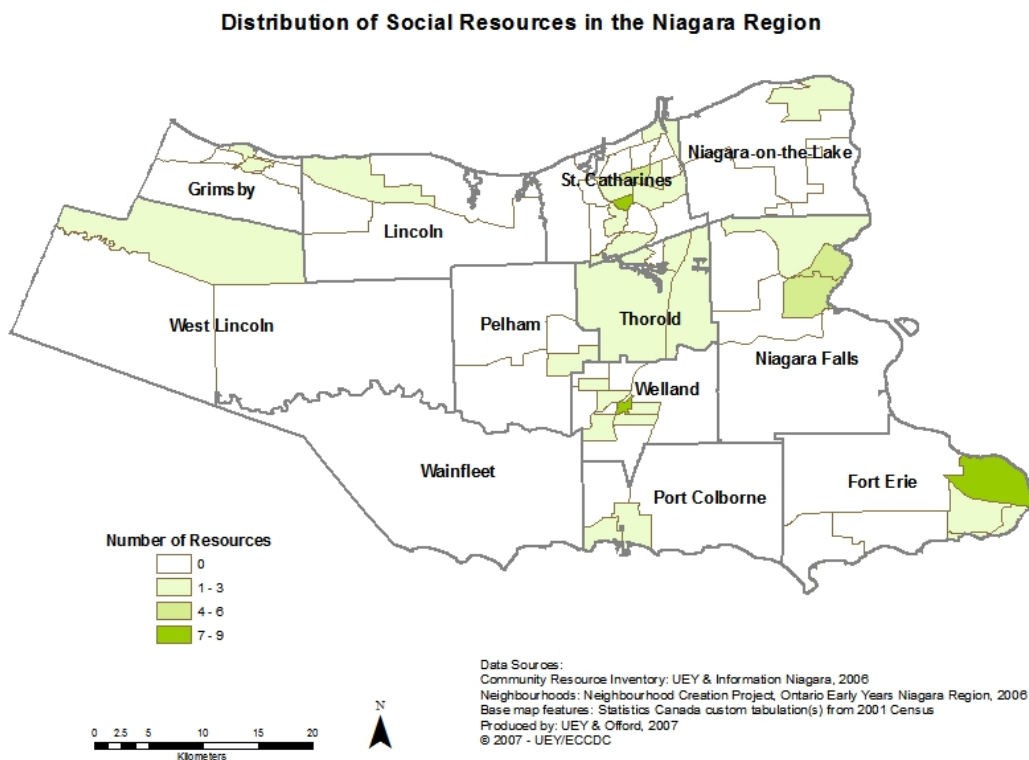
Special Interest Resources

Special interest resources include faith-based organizations such as churches, mosques, and temples. There were 319 special interest resources in the Niagara Region in 2007 and these are represented in Map 31.

There were very few areas where there were no special interest resources, except in a few rural neighbourhoods in West Lincoln and Grimsby. The majority of special interest resources were in the more urban centres of the larger cities of St. Catharines, Niagara Falls, Welland, and Fort Erie. As displayed in Map 31, the majority of the region is blanketed with at least one special interest resource in each neighbourhood.

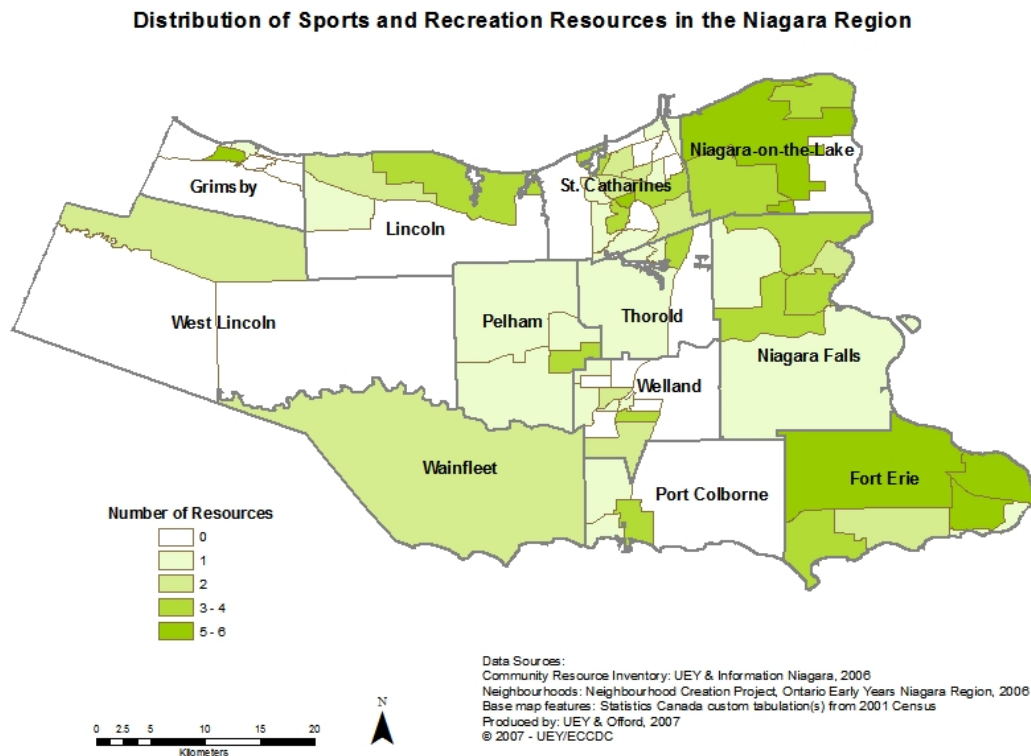
The availability of neighbourhood community resources can have an effect on early child development. Community resources for children 0-6 years of age and their parents/caregivers have also been mapped and listed for each Niagara municipality (UEY, 2007). These can be found online at: www.uey.eccdc.org/niagararegion.php.

Map 29. Distribution of Social Resources for Children 0-6 in the Niagara Region (CRI 2007)

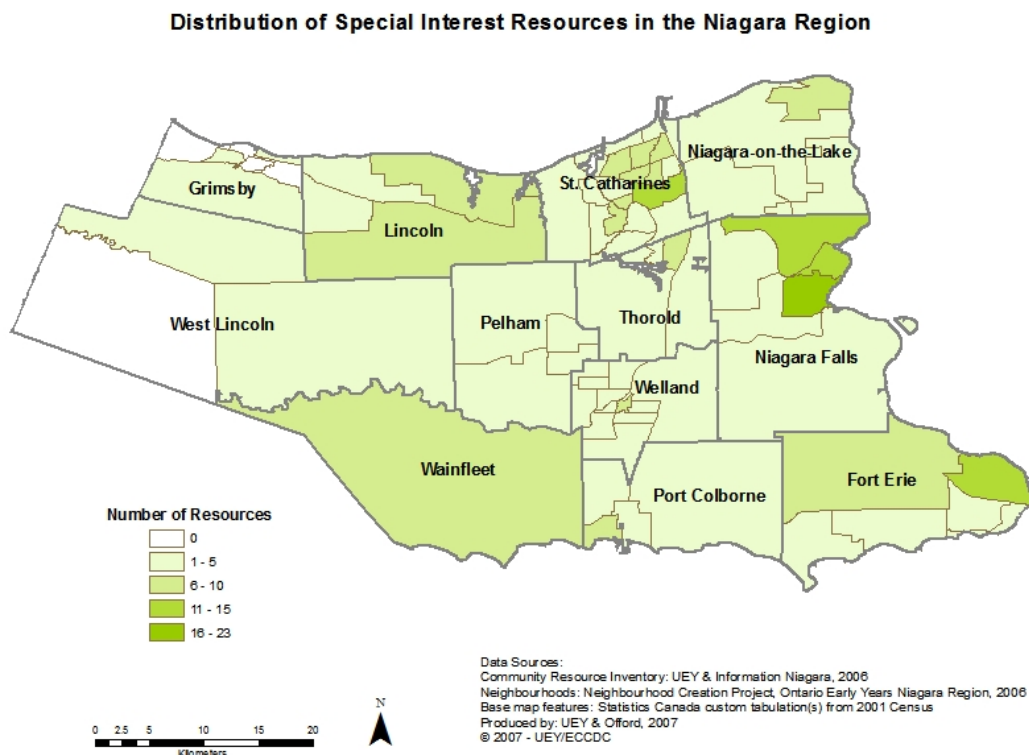


When reading the next section, which will examine school readiness and socioeconomic conditions at the *municipal level* in Niagara, take into consideration lack of or abundance of neighbourhood resources to support development of children aged 0-6 years of age and their parents/caregivers.

Map 30. Distribution of Sports and Recreation Resources for Children 0-6 in the Niagara Region (CRI 2007)



Map 31. Distribution of Special Interest Resources for Children 0-6 in the Niagara Region (CRI 2007)



3. Municipal Results

This next section will present municipal EDI, and socioeconomic and community resource results at the neighbourhood level. Please note that this report does not contain all data available; only the most relevant results for each municipality have been included. Additional information at this level is available upon request and online at: www.uey.eccdc.org/niagararegion.php.

Overall in Niagara 77% of students are considered ready for school, which is higher than national percentages (EDI, 2006). However, when looking at vulnerability, the Niagara Region has higher vulnerability rates (30.1% of students scored below the 10th percentile on one or more readiness to learn domains) compared to the national rate (25.9%).

In Niagara, it seems as though we have many children who do quite well on the EDI and many children who also are showing significant weakness with very low scores. This means that overall we are strong and should celebrate how well our children are doing. At the same time, we cannot forget that we do have some very high rates of vulnerability. Overall across Niagara in 2006, there were 892 senior kindergarten children who scored in the lowest 10th percentile on one or more readiness to learn domains.

To identify those specific early learning and development areas where we are doing well and those where we are doing not so well, we need to compare the municipal results to the national and regional averages. Below is a list of 2006 EDI results averages to keep in mind as we look at the information in this section:

- 25.9% - National Overall EDI Vulnerability Average (% of children who scored below the 10th percentile on one or more readiness to learn domains)
- 30.1% - Regional Overall EDI Vulnerability Average
- 16% - Regional Communication Skills & General Knowledge Vulnerability Average
- 14% - Regional Physical Health and Well-being Vulnerability Average
- 12% - Regional Language and Cognitive Skills Vulnerability Average
- 10% - Regional Emotional Maturity Vulnerability Average
- 9% - Regional Social Competence Vulnerability Average

Finally, as mentioned previously in this report, there are 74 neighbourhoods in the Niagara Region. However, due to EDI minimum sample size requirements (30), some neighbourhoods had to be amalgamated. This resulted in 50 EDI reporting neighbourhoods.

Niagara Falls

"Niagara Falls (is) a city in the Regional Municipality of Niagara, southeastern Ontario, Canada, (and) a port on the Niagara River opposite Niagara Falls, New York. The city overlooks the Horseshoe, or Canadian Falls cataract of Niagara Falls; the crescent-shaped cataract is 54 M (177ft) high and carries nine times more water than its United States counterpart. Niagara Falls is an enormously popular tourist destination and it also serves as a major source of electricity for Ontario. ...The city is connected to the U.S. side of the falls by several bridges, including the Rainbow, Whirlpool, and Queenston-Lewiston bridges. Principal manufacturers include processed food, abrasives, chemicals, automotive parts, metal and paper goods, and wines and alcoholic beverages. Logistics, i.e. storage and warehousing and information technology/call centres are also important to the city's economy."

Copyright © 2007 City of Niagara Falls

As displayed in Map 32, Niagara Falls consists of six neighbourhoods: Elgin, Stamford, Beaverdams, Westlane, Drummond-Victoria, and Chippawa-Rural. Niagara Falls did not have to amalgamate any neighbourhoods for the purposes of EDI reporting and thus remains the same when reporting all data.

EDI Results in Niagara Falls

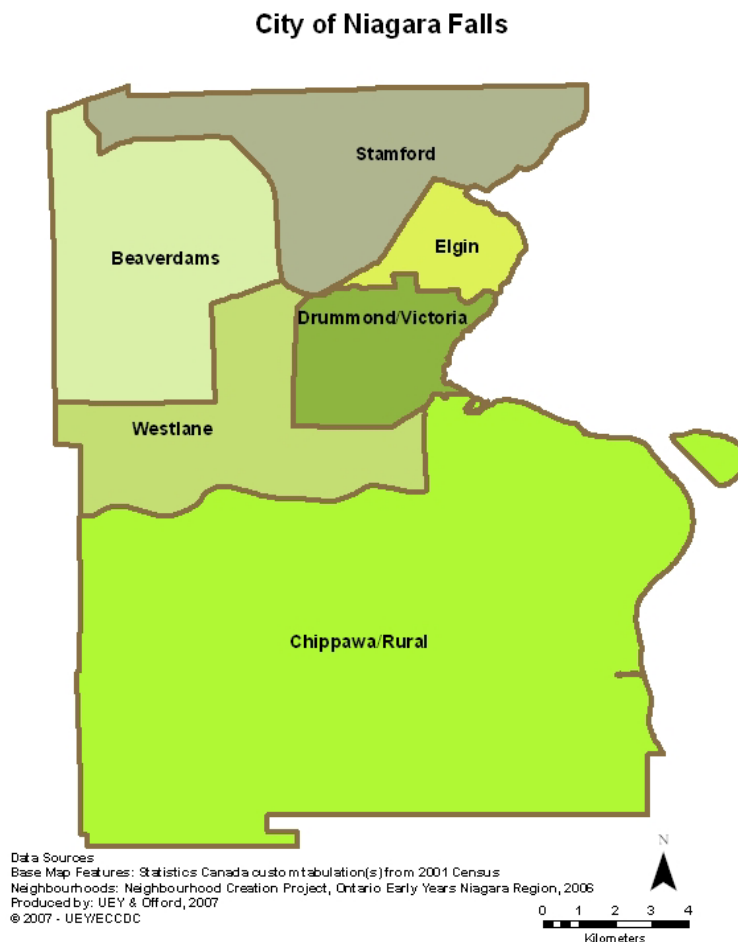
Over three out of four children in Niagara Falls (78%) are on track for learning at school across the five domains.

At the same time, 27.4% of the 634 participating senior kindergarten students scored in the vulnerable range on the EDI overall, which is lower than the regional average (30.1%) but still higher than the national average (25.9%).

Examination of EDI results at the neighbourhood level in Niagara Falls shows that there are two neighbourhoods (Elgin & Drummond/Victoria) whose overall vulnerability rates were above the national average and four neighbourhoods (Stamford, Chippawa/Rural, Westlane, Beaverdams) that were doing better than the national average, in terms of overall vulnerability.

The Elgin neighbourhood (n=78) had the highest percentage of students (40.8%) scoring in the vulnerable range. In fact, looking at all five of the readiness to learn in school domains, students living in Elgin scored above

Map 32. Neighbourhoods in the City of Niagara Falls (2006)



EDI Results in Niagara Falls (continued)

regional vulnerability averages across all areas. The highest levels of vulnerability were found on the Communication Skills & General Knowledge (25%) and Physical Health and Well-being (23.7%) domains.

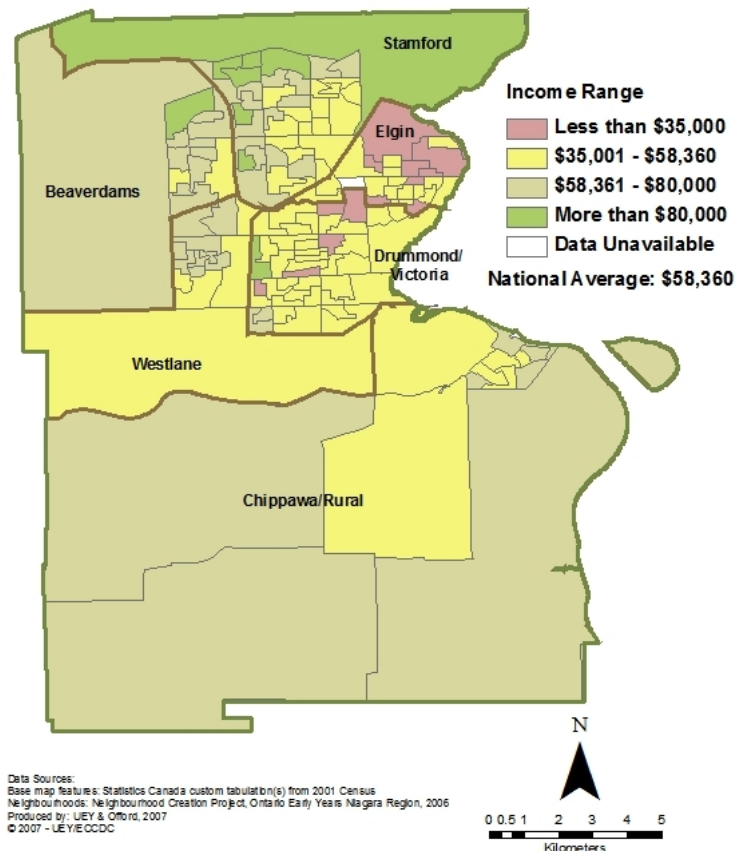
However, the Westlane and Chippawa/Rural neighbourhoods did quite well, displaying overall vulnerability scores of 21.1% and 21.5% respectively, which are far below the regional and national averages. In fact, for both these Niagara Falls neighbourhoods, students did better than regional averages across all five domains. What makes these neighbourhoods so early development friendly?

Out of the five domains, children living in Niagara Falls showed the most vulnerability in Communication Skills and General Knowledge. Actually, 17% of children scored in the lowest 10th percentile in this domain. Looking further into the sub-domain level shows that in terms of Communication Skills and General Knowledge, students struggled with:

- communicates easily and effectively;
- participates in story-telling or imaginative play; and
- has proficiency in their native language.

Map 33. Average Household Income in Niagara Falls (2001 Census)

Average Household Income in Niagara Falls



Children living in Niagara Falls showed relative strength on the Social Competence and Emotional Maturity domains, with only 9% of children scoring in the vulnerable range.

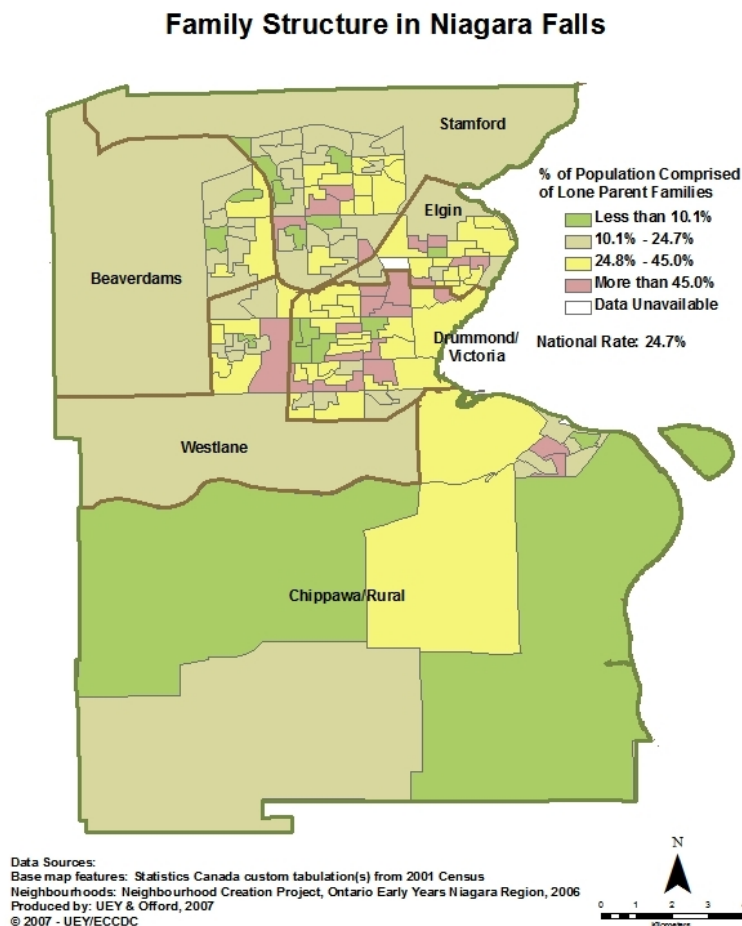
Now we can look at some socioeconomic maps to see if there may be any relationship between EDI and socioeconomics in the city.

Socioeconomic Results in Niagara Falls

Map 33 displays the distribution and difference in household income across the neighbourhoods in Niagara Falls. The 2001 national average household income was \$58,360. The majority of the population living in the Elgin neighbourhood had an average household income of less than \$35,000 (as shown in red on map). The majority of the Westlane and Drummond/Victoria neighbourhoods had below national averages in terms of average household income as well (shown as red and yellow on map). Conversely, large portions of residents living in the Stamford neighbourhood had average household incomes above \$80,000.

Looking at family structure (Map 34), the national rate of lone parent families was 24.7% in 2001. Family structure is defined as the percentage of the population comprised of lone parent families (caregivers are also

Map 34. Family Structure in Niagara Falls (2001 Census)



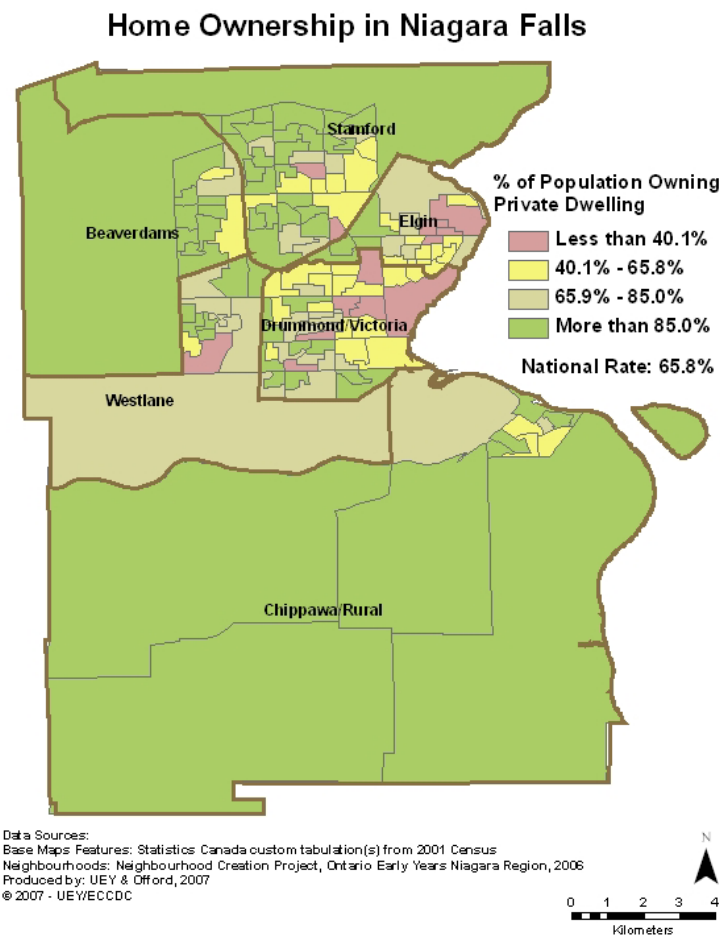
Socioeconomic Results in Niagara Falls (continued)

included in this definition). In Niagara Falls, female lone parents comprised 83% of the lone parents in the city, which is slightly lower than the national average (Statistics Canada, 2001). Nevertheless, the fact remains that more than 90% of families comprised of single parents live in poverty (Statistics Canada, 2001) and there are areas within Niagara Falls neighbourhoods where the rates of lone parent families are much higher than found on average nationally.

As shown in Map 34 (page 50), much of the Elgin and Drummond-Victoria neighbourhoods had higher than national average percentages of lone parent families. Red sections on the map show areas where more than 45% of all families are lone parent families. The majority of Chippawa-Rural shows less than national average percentages with approximately half of the neighbourhood having less than 10% of their families as lone parent families. However, all six Niagara Falls neighbourhoods had pockets within them showing below national average percentages of lone parent families. Single parent/caregiver mothers typically account for 85% or more of all single parent/caregiver families in Canada (Statistics Canada, 2001).

Map 35 displays the distribution of the percentage of residents who own their place of residence in Niagara Falls. All neighbourhoods had major pockets of high percentages (more than 85%) of the population who reported owning their homes and these rates were well above the national average of 65.8%. However, central portions of

Map 35. Home Ownership in Niagara Falls (2001 Census)

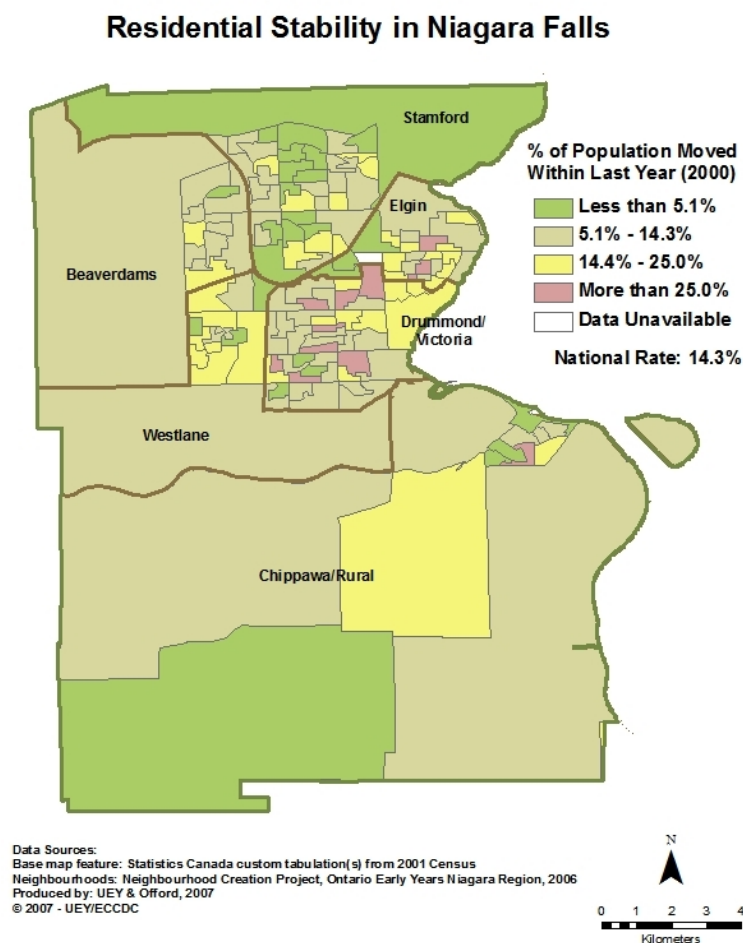


Niagara Falls, located in areas that are more commercial in nature, reported high rental rates. More specifically, there were concentrated pockets in the Elgin and Drummond-Victoria neighbourhoods where less than 40.1% of residents owned their homes (shown in red on map). The average value of a home with 6.9 rooms was reported to be \$139,813 in Niagara Falls in 2001.

Residential stability looks at the percentage of the population who have moved within the past year. For children, where they live influences their sense of autonomy and sense of place in society. A high rate of residential mobility and transience in communities is socially disruptive for children, causing them to have weaker social ties (Early Development in Vancouver: Report on the Community Asset Mapping Project, 2002). Map 36 provides a snapshot of neighbourhood mobility rates over a one year period in Niagara Falls. The national rate of the percentage of the population that moved within the previous year (2000) was 14.3%.

Overall, there were low mobility rates in Niagara Falls. In areas where home ownership was reported to be high, there tended to be smaller proportions of the population moving residences in 2000. As shown in Map 36, pockets within Elgin, Drummond-Victoria and Chippawa-Rural indicate more than 25% of the population living in these specific areas moved in the year 2000.

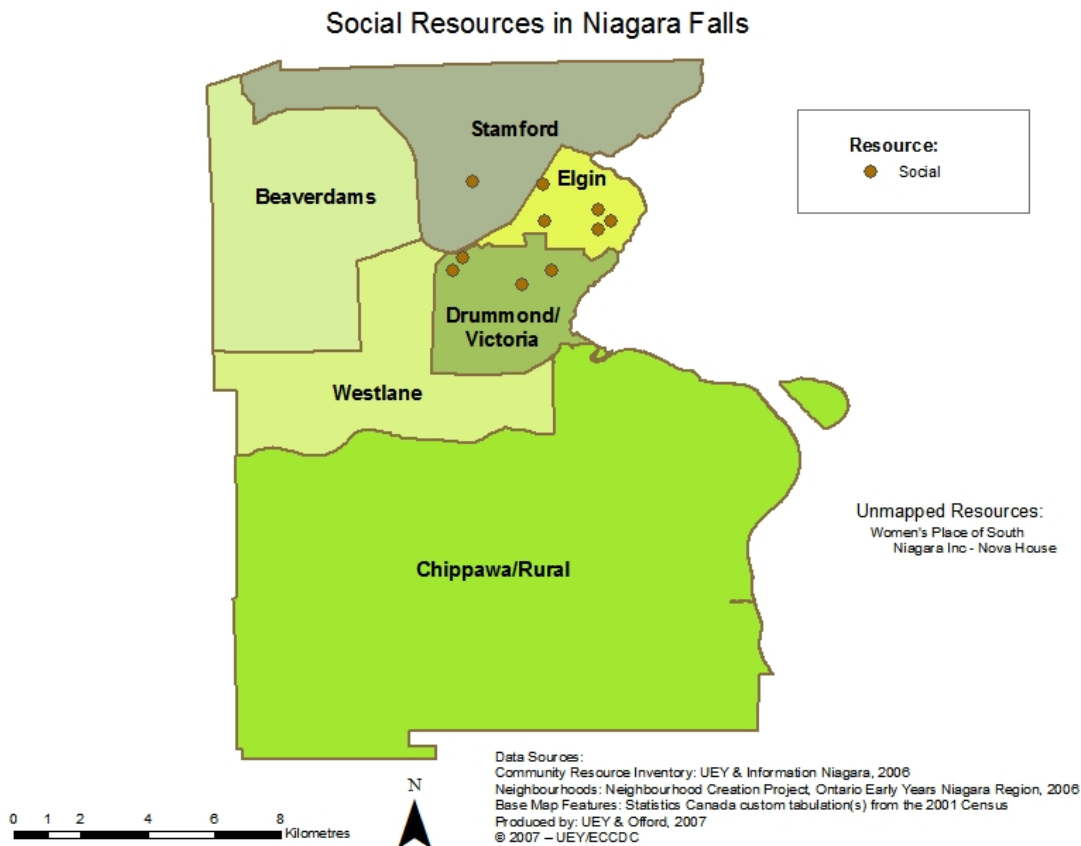
Map 36. Residential Stability in Niagara Falls (2001 Census)



Community Resource Results in Niagara Falls

In terms of community resources for children 0-6 years of age and their parents/caregivers available in Niagara Falls, there seem to be programs and services in each of the six resource categories. In fact, it appears as though Niagara Falls may have the most resources per capita and resources are quite spread out across the six neighbourhoods. The least numerous resource category in Niagara Falls, as noted regionally as well, was the social type.

Map 37. Social Resources in Niagara Falls (CRI 2007)



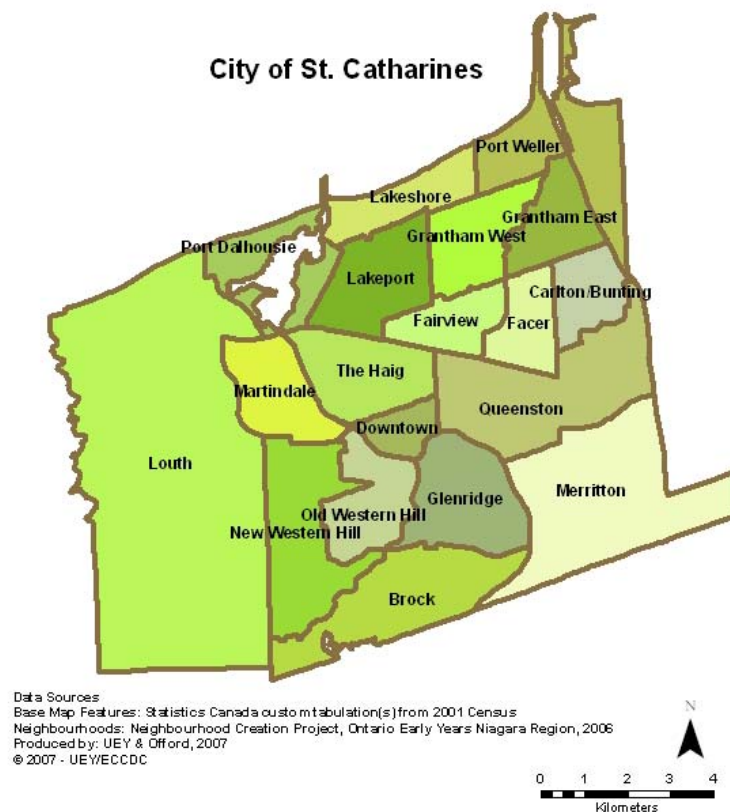
St. Catharines

"St. Catharines is in the Heart of Niagara. Come celebrate our City's rich heritage, vibrant culture and extraordinary natural beauty. Travel Niagara's wine route that winds past lush vineyards and orchards. We take pride in our colourful array of distinctive, award-winning commercial and residential gardens. Our abundance of green spaces, trails and parks will delight garden and nature enthusiasts while nourishing the spirit. ... St. Catharines is the entertainment capital of Niagara! From professional and amateur theatre, fine art and contemporary art galleries, Canadian performing artists, Jazz, Motown, contemporary rock bands to major festivals and events year round."

Copyright © 2007 City of St. Catharines

Seven of the nineteen neighbourhoods in St. Catharines were amalgamated in order to report on EDI data and create a long-term workable reporting solution. Neighbourhoods were amalgamated based on geographic proximity and similar socioeconomic conditions. This map will only be used for reporting EDI results. Maps with the original neighbourhoods will be used to report on socioeconomic conditions and community resources and their names will be included in all maps - out of respect and appreciation for the work and wisdom of the community champions who participated in the Neighbourhood Creation Project (Ontario Early Years Niagara Region, 2006). Map 38 displays the neighbourhoods of St. Catharines and Map 39 (page 55) shows the amalgamated neighbourhoods.

Map 38. St. Catharines Neighbourhoods (2006)



EDI Results in St. Catharines

Overall, three out of four children (75%) in St. Catharines are on track for learning at school across the five domains.

In St. Catharines, 31.9% of 910 participating senior kindergarten students scored in the vulnerable range on the EDI overall. This was higher than both the regional and national averages (30.1% and 25.9% respectively).

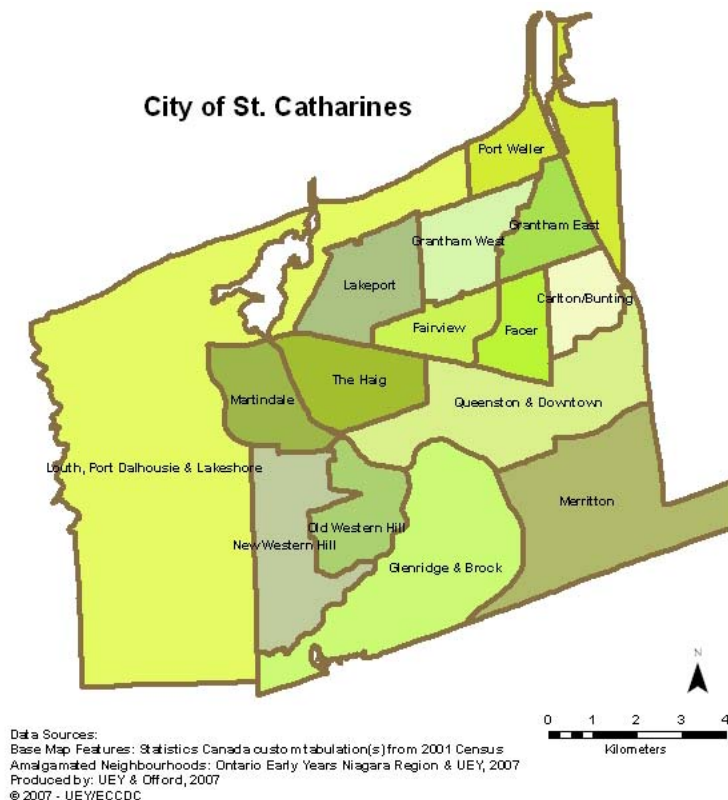
Looking further into domain scores, St. Catharines students showed the highest vulnerability on the Communication Skills and General Knowledge domain with 18% of children scoring in the lowest 10th percentile. Children in St. Catharines had the lowest vulnerability scores on the Social Competence domain, with only 9% of children scoring in the vulnerable range.

In terms of the Communication Skills and General Knowledge domain, St. Catharines students showed weakness on four out of the five sub-domains:

- Communicates easily and effectively
- Participates in storytelling or imaginative play
- Articulates clearly
- Has proficiency in their native language

In St. Catharines, Queenston/Downtown and The Haig neighbourhoods had the highest overall vulnerability rates with 46.0% (n=97) and 45.3% (n=96) of children scoring in the lowest 10th percentile on one or more readiness to learn domains, respectively. Furthermore, the Queenston/Downtown neighbourhood scored in the vulnerable range across all five readiness to learn domains.

Map 39. Amalgamated EDI Neighbourhoods in St. Catharines (2007)



On the other hand, the New Western Hill and Glenridge/Brock neighbourhoods scored very well, with only 20.0% of the 80 children and 20.8% of the 35 children scoring in the vulnerable range on the EDI overall, respectively. Furthermore, in terms of the Physical Health and Well-being domain, 0% - none - of the 35 children living in the Glenridge/Brock neighbourhood scored in the lowest 10th percentile.

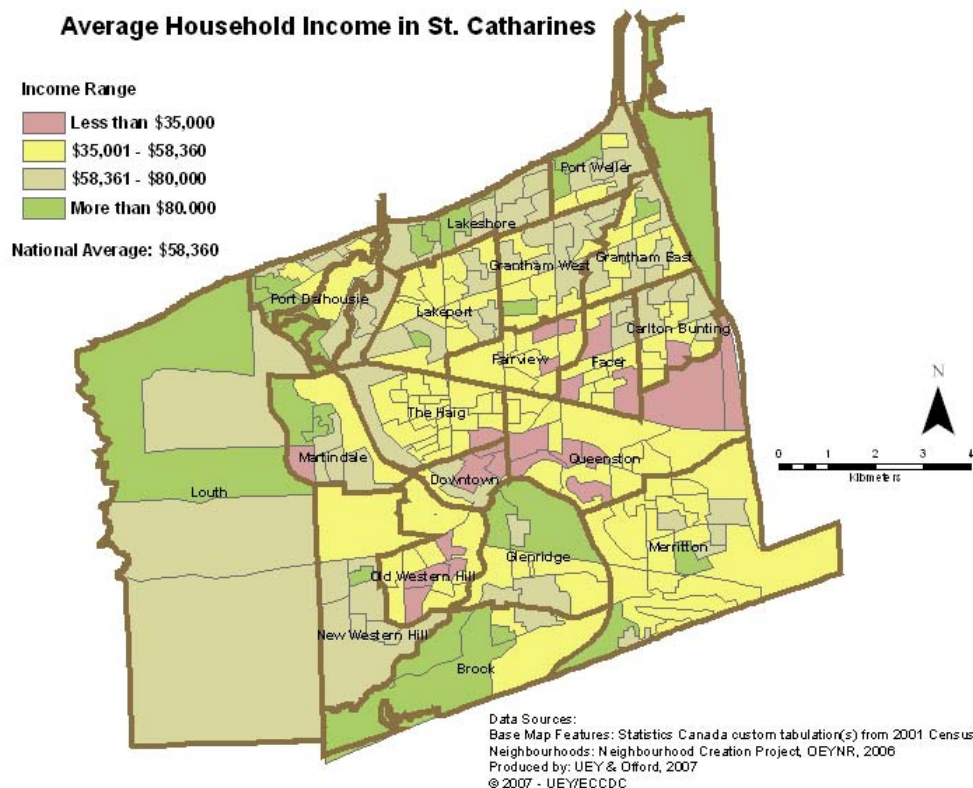
Now that we know a little more about St. Catharines' EDI strengths and weaknesses, we can look at some socioeconomic factors and see if they might tell us more about what may or may not be going on in the municipality and its neighbourhoods.

Socioeconomic Results in St. Catharines

Looking at Map 40, Average Household Income in St. Catharines in 2001, we can see that the majority of The Haig, Downtown, Queenston, Facer, Fairview, and Merritton neighbourhoods had incomes below the national average of \$58,360 (shown in red and yellow on map). We can also see that all of Louth and the Lakeshore neighbourhoods had above national average household incomes (shown as green and beige on map).

Another important socioeconomic factor is education. Map 41 (page 57) displays the percentage of the population aged 20 and older living in St. Catharines without a high school diploma. Researchers have consistently reported that children's educational attainments have been found to be associated with those of their parents'/caregivers' (Keating & Hertzman, 1999; McCain & Mustard, 1999; Ringback Weitof et al., 2004). The majority of Queenston, Fairview, Facer, Carlton/Bunting, Old Western Hill, Grantham East, Grantham West, and Merritton neighbourhoods have more than 30% of their population without a high school diploma.

Map 40. Average Household Income in St. Catharines (2001 Census)



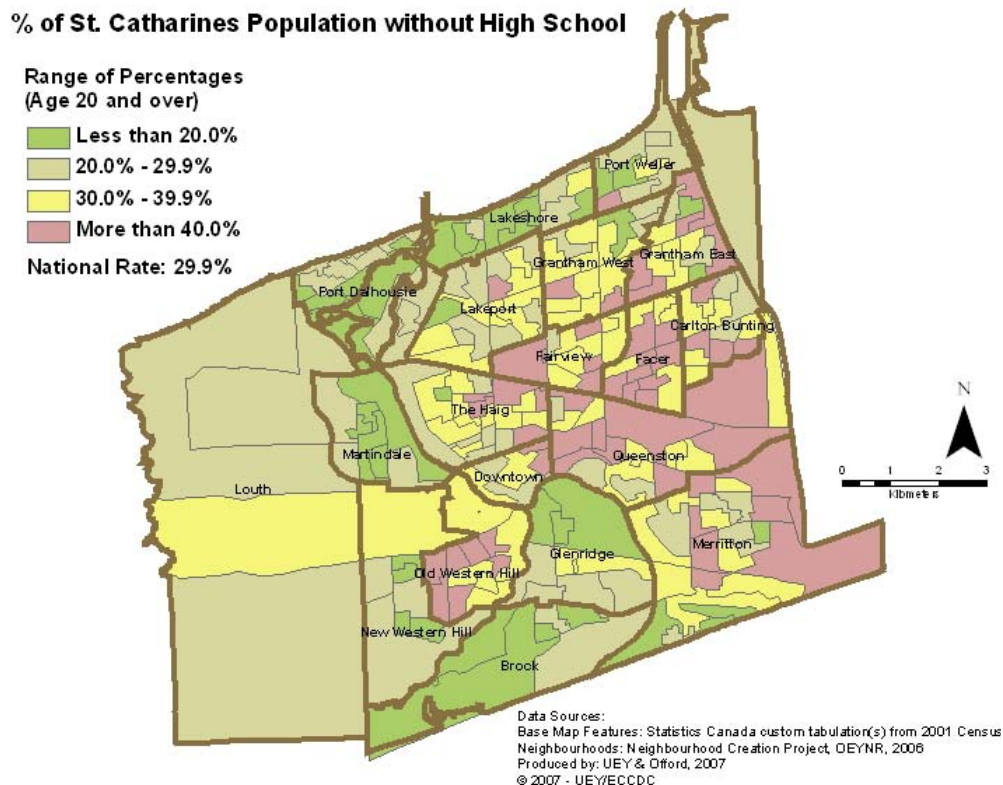
Socioeconomic Results in St. Catharines (continued)

Family status can also have many effects on children and their development. Often in neighbourhoods where high rates of lone parenting were observed along with other risk factors such as low income, residential instability, and reliance on social assistance, more children were found to be at risk or vulnerable and are, therefore, more likely to have difficulty in school (UEY & OEYNR, 2005). The national rate of the population that was comprised of single parent families in 2001 was 24.7%. Map 42 displays the percentages within each neighbourhood in St. Catharines that are comprised of single parent families. The majority of the Haig, Fairview, Facer, Old Western Hill, Queenston, and Merrittton neighbourhoods consisted of more than 24.8% single parent families in 2001 (shown in red and yellow on map). In the majority of the Lakeshore, Grantham East, Grantham West, Glenridge, Brock, and Martindale neighbourhoods, single parent families comprised less than 24.7% of their population.

Community Resource Results in St. Catharines

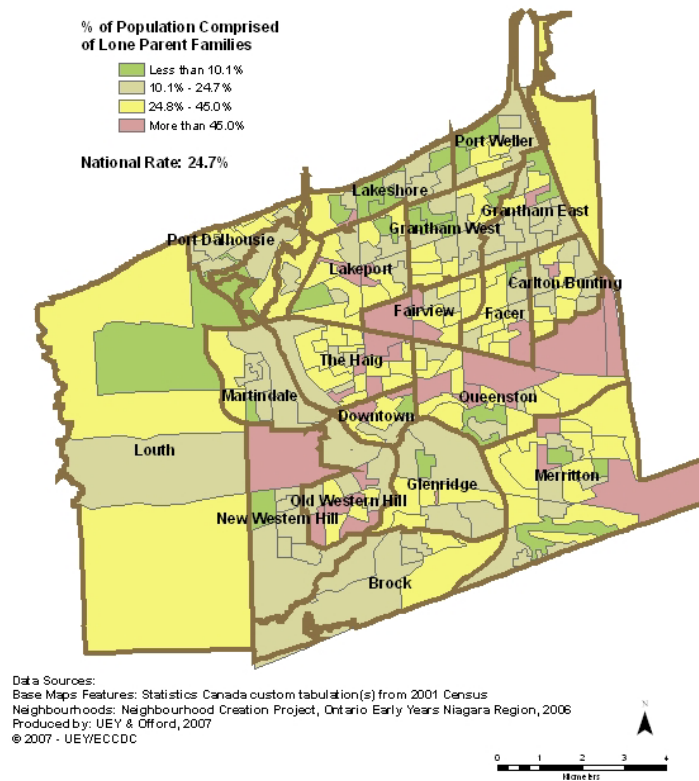
Considering St. Catharines is the largest city in the Niagara Region, it is no surprise that it contained the most resources for children 0-6 years and their parents/caregivers. There was an abundance of resources across the six categories throughout the city. As found regionally, the most resources in the city were in the special interest category and the least amount were of the social type. Map 43 shows that most of the social resources available were located in the downtown area.

Map 41. Percentage of the St. Catharines Population Aged 20 and Older Without a High School Diploma (2001 Census)



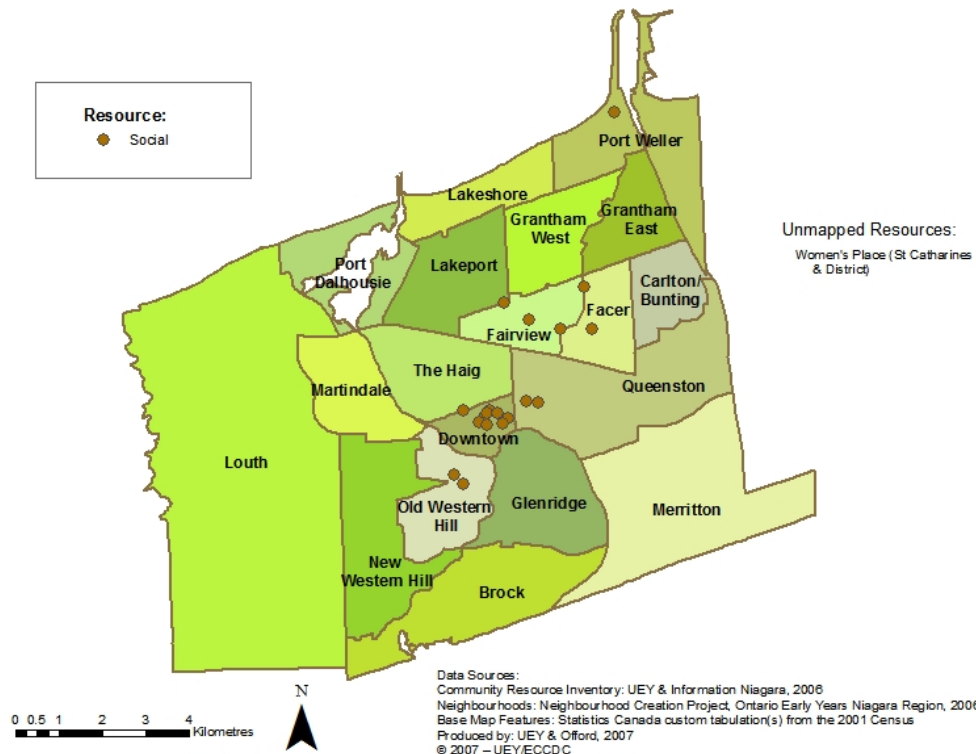
Map 42. Family Structure in St. Catharines (2001 Census)

Family Structure in St. Catharines



Map 43. Social Resources in St. Catharines (CRI 2007)

Social Resources in St. Catharines



Grimsby

"We live in a special place, nestled between beautiful Lake Ontario and the majestic Niagara Escarpment. From its roots as a service centre to Niagara's thriving agricultural industry, the town has developed to become the preferred place in which to live and do business in Niagara. Although less than an hour's drive from Toronto's world-class cultural milieu (catch a Blue Jay's game, perhaps a performance of Miss Saigon and home for midnight), Grimsby is the personification of a small town. Its quiet, tree-lined avenues, its rural area, the natural Niagara Escarpment which winds through the town's centre, the beaches on the shores of Lake Ontario, and its many parks define "home" to the town's 19,000 people."

Copyright © 2007 Town of Grimsby

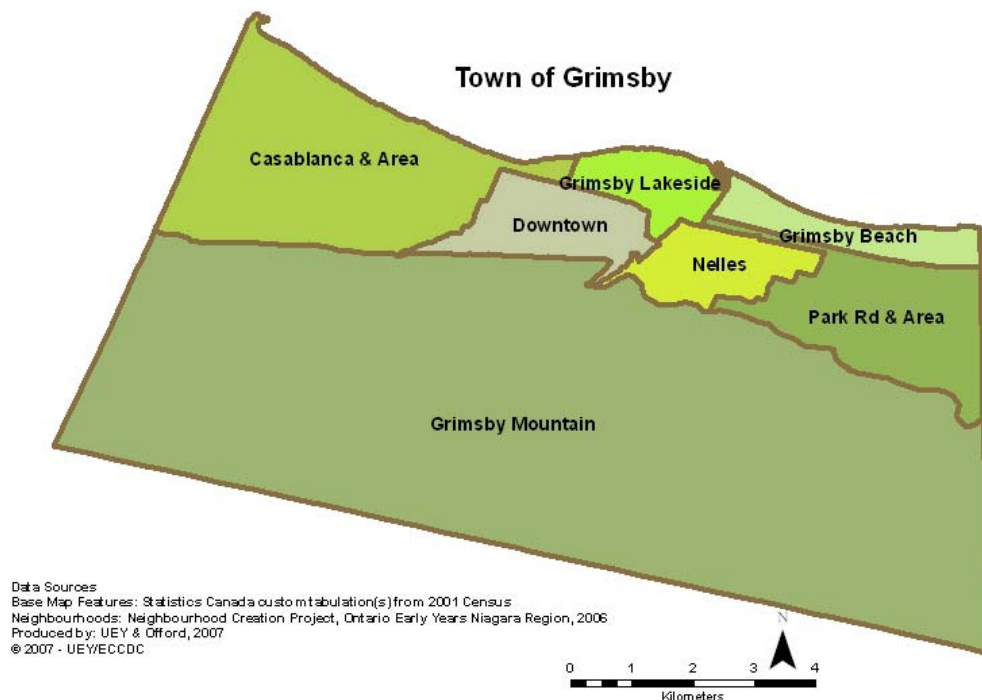
Six of the seven neighbourhoods in Grimsby were amalgamated in order to report on EDI data and create a long-term workable solution. Neighbourhoods were amalgamated based on geographic proximity and similar socioeconomic conditions. This map will only be used for reporting EDI results. Maps with the original neighbourhoods will be used to report on socioeconomic conditions and community resources and their names will be included in all maps - out of respect and appreciation for the work and wisdom of the community champions who participated in the Neighbourhood Creation Project. Maps 44 and 45 show the original and amalgamated neighbourhoods in the town.

EDI Results in Grimsby

A large percentage of children (85%) in Grimsby are on track for learning at school across the five domains.

Only 18.1% of the 158 children Senior Kindergarten students living in Grimsby scored in the vulnerable range. This is much lower than the regional and national averages. Looking deeper into EDI results at the

Map 44. Grimsby Neighbourhoods (2006)



neighbourhood level in Grimsby reveals that all three neighbourhoods had vulnerability scores below both the regional (30.1%) and national (25.9%) averages.

Comparing vulnerability rates between the five domains shows that children from Grimsby had the highest rate of vulnerability (9%) in Communication Skills and General Knowledge domain – however this was still far below the regional vulnerability average of 16% on this domain. On the rest of the domains, children in Grimsby did very well and had much lower vulnerability rates than were found, on average, regionally.

In fact, every neighbourhood had lower vulnerability rates compared to the regional averages across all five domains. Overall, the Park Road and Area neighbourhood had the lowest overall vulnerability rate of only 14.9%. The Grimsby Mountain, Casablanca Area, and Downtown neighbourhoods also showed very low vulnerability on the Social Competence and Language and Cognitive Development domains.

In examining all 20 sub-domains which make up the five EDI domains, students in Grimsby only showed weakness in one area:

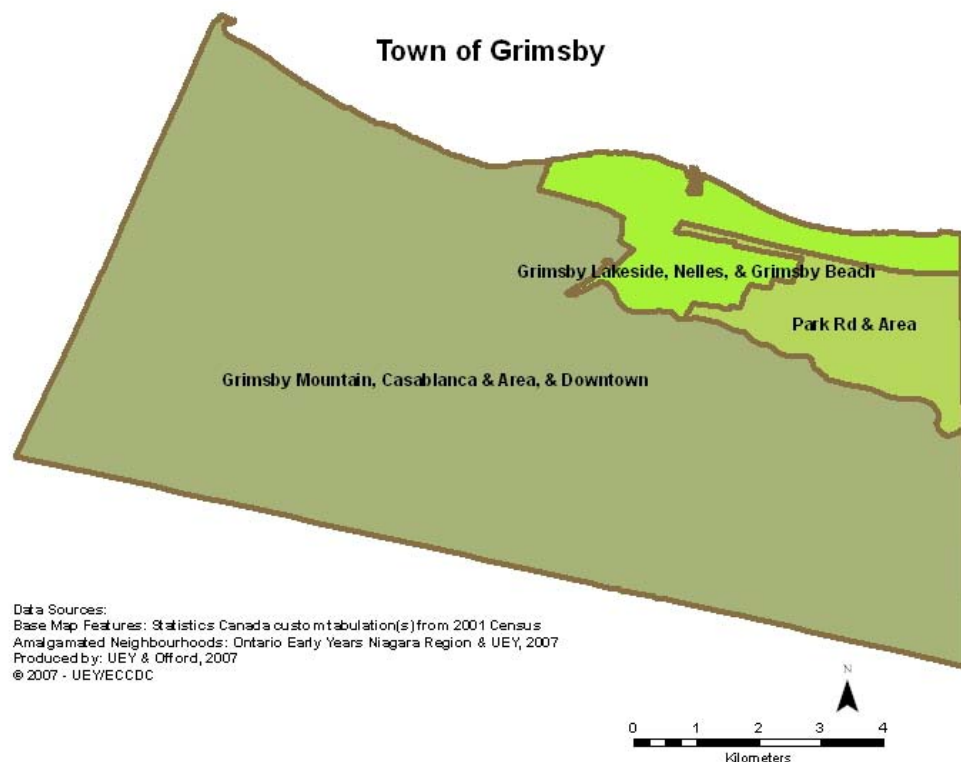
- Gross and fine motor skills (Physical Health and Well-being).

Given these excellent EDI scores, let's examine the socioeconomic conditions children in Grimsby were experiencing in 2001.

Socioeconomic Results in Grimsby

Map 46 (page 61) shows average household income in Grimsby. The majority of Grimsby has incomes above

Map 45. Amalgamated EDI Neighbourhoods in Grimsby (2007)



Socioeconomic Results in Grimsby (continued)

the national average of \$58,360. There was only one small pocket in the Downtown core where income was less than \$35,000 (shown in red). There was also a portion of the Grimsby Lakeside neighbourhood where average household income was below the national average (yellow on map).

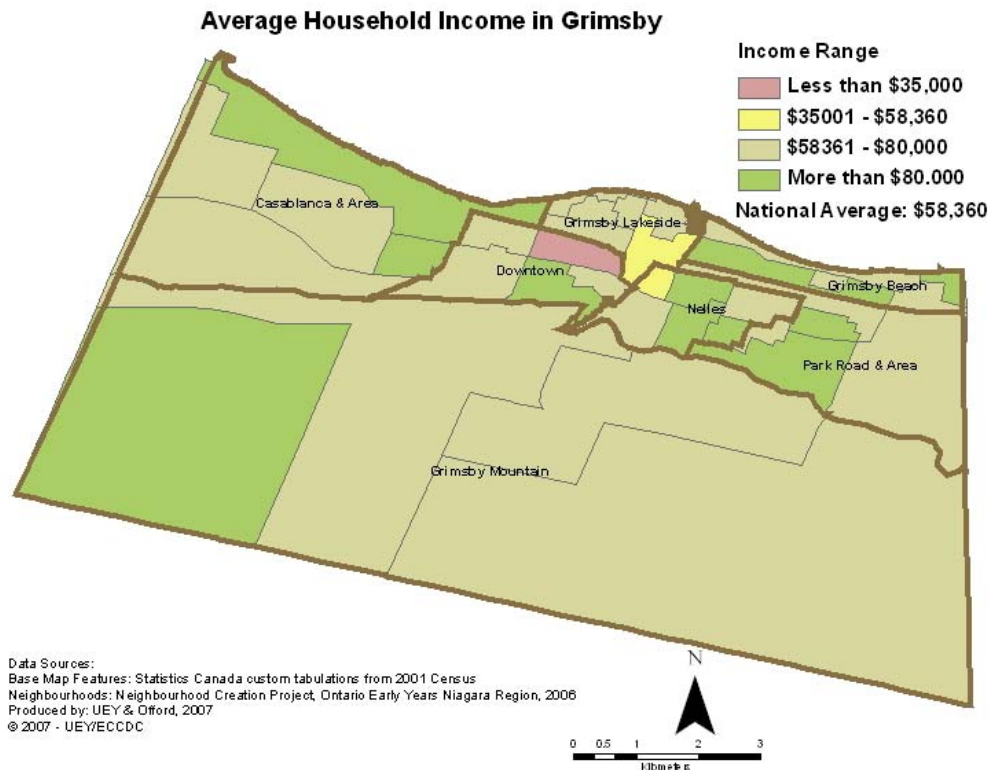
Map 47 shows the percentage of the population in Grimsby without a high school diploma in 2001. There are several areas in the town where more than 30% of the population had not obtained a high school diploma. In fact, only the Casablanca & Area and Grimsby Beach neighbourhoods had no pockets of average high school completion below the national average. The more urban area had a higher percentage of high school completion compared to the rural area within Grimsby.

Despite pockets of relative weakness in income and levels of adult education, children across Grimsby appear to be doing quite well. Are there other assets that are helping to mitigate these negative conditions? Let's now examine community resources in Grimsby.

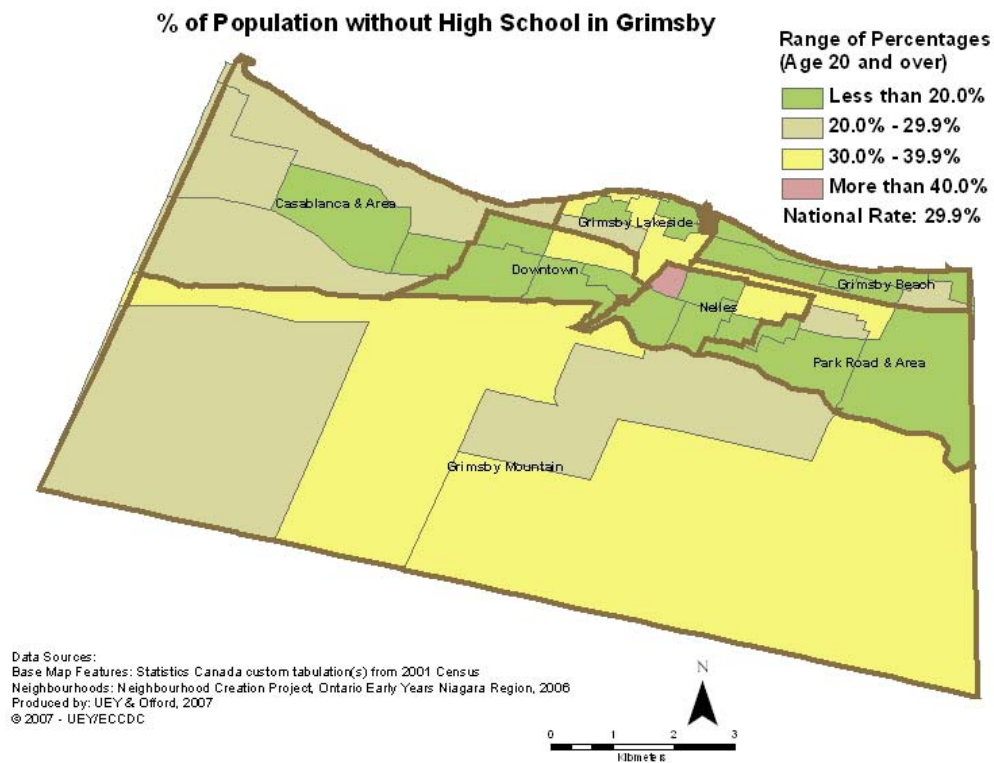
Community Resource Results in Grimsby

Overall, there were several community resources for young children and their parents/caregivers in Grimsby. However, there were only three social type resources (two in same location) in all of Grimsby (Map 48). Most of the resources were concentrated in the more populated neighbourhoods, as would be expected. The Nelles and Casablanca and Area neighbourhoods seemed to generally lack resources.

Map 46. Average Household Income in Grimsby (2001 Census)

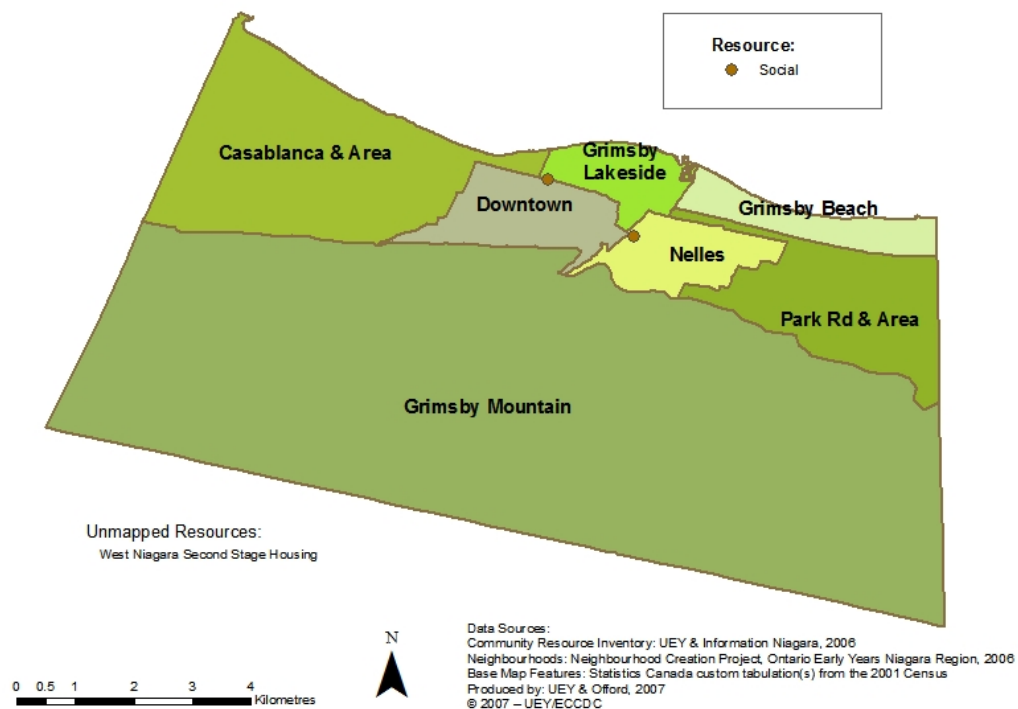


Map 47. Percent of the Population Without High School in Grimsby (2001 Census)



Map 48. Social Resources in St. Catharines (CRI 2007)

Social Resources in Grimsby



West Lincoln

"West Lincoln is located south of Lake Ontario and north of Lake Erie on the Niagara Escarpment. It is bordered by the City of Hamilton, the Town of Grimsby, the Town of Lincoln, the Town of Pelham, the Township of Wainfleet, the Town of Dunnville and the Town of Haldimand in the heart of the Niagara Region. West Lincoln is situated in close proximity to many major cities. The transportation linkages provide West Lincoln with direct access to large industrial, commercial and residential centers such as Buffalo, Niagara Falls, St. Catharines, Hamilton, Kitchener-Waterloo, Guelph, and the Greater Toronto Area."

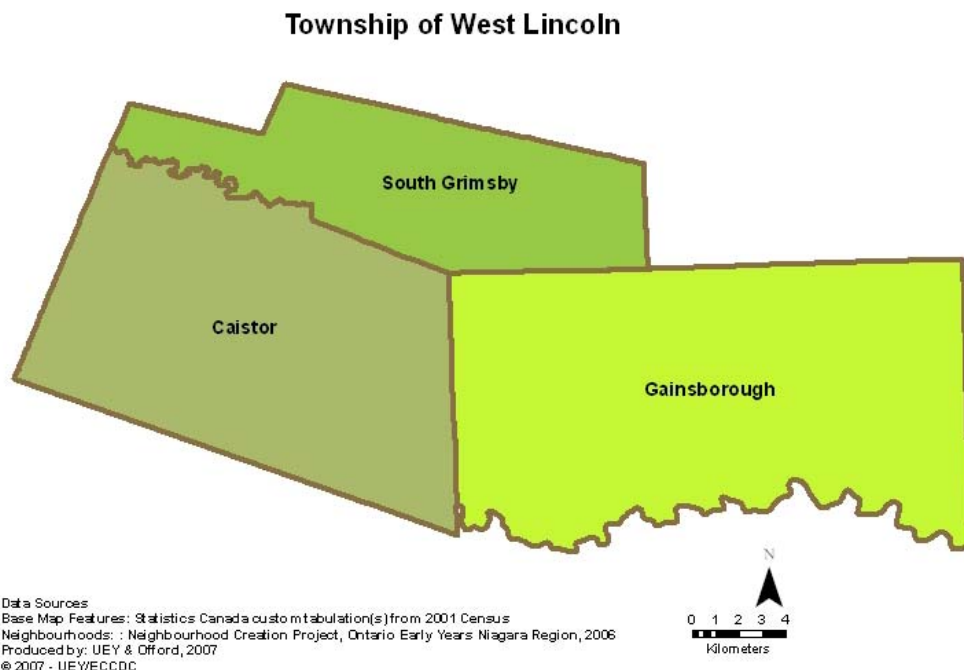
Copyright © 2007 Township of West Lincoln

All three of the neighbourhoods in West Lincoln were amalgamated in order to report on EDI data and create a long-term workable solution. Neighbourhoods were amalgamated based on geographic proximity and similar socioeconomic conditions. This map will only be used for reporting EDI results. Maps with the original neighbourhoods will be used to report on socioeconomic conditions and community resources and their names will be included in all maps - out of respect and appreciation for the work and wisdom of the community champions who participated in the Neighbourhood Creation Project. Maps 49 and 50 show the original and amalgamated neighbourhoods in West Lincoln.

EDI Results in West Lincoln

A large percentage of children in West Lincoln (82%) are on track for learning in school. Children in West Lincoln did well scoring above the national averages in all five readiness to learn domains of the EDI.

Map 49. West Lincoln Neighbourhoods (2006)



Out of the five domains, children living in West Lincoln showed the most vulnerability on Communication Skills and General Knowledge, with 15% of the 45 participating senior kindergarten students scoring in the lowest 10th percentile. Children from West Lincoln showed the least amount of vulnerability on the Social Competence domain (2%). In fact, overall vulnerability in West Lincoln was only 25% and vulnerability rates in each of the five domains were all far below regional vulnerability averages.

West Lincoln showed weakness on only two sub-domains:

- Articulates clearly (Communication Skills and General Knowledge); and
- Gross and fine motor skills (Physical Health and Well-being).

What are the socioeconomic conditions in this Township?

Socioeconomic Results in West Lincoln

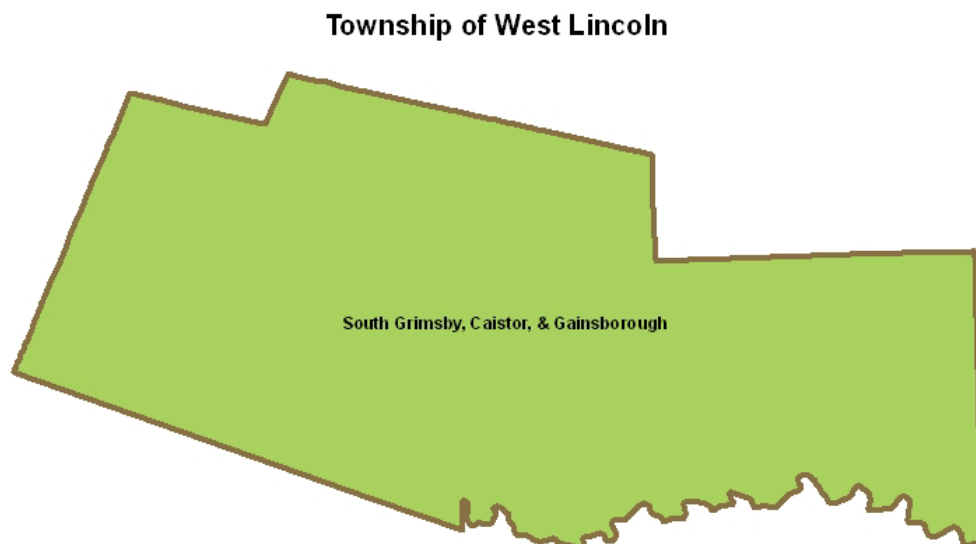
All of West Lincoln is one neighbourhood when reporting EDI, and thus no neighbourhood comparisons can be made to socioeconomic factors.

West Lincoln did show above regional average household income, with the vast majority of households making more than \$58,361 per year in 2001.

All of West Lincoln also showed less than 24.7% of their population being single parent families in 2001.

Educational attainment results were not as strong as income and family structure results; about half of West Lincoln showed that 30-40% of the population did not have a high school diploma.

Map 50. Amalgamated EDI Neighbourhoods in West Lincoln (2007)



Data Sources:
Base Map Features: Statistics Canada custom tabulation(s) from 2001 Census
Amalgamated Neighbourhoods: Ontario Early Years Niagara Region & UEY, 2007
Produced by: UEY & Offord, 2007
© 2007 - UEY/ECCDC



Socioeconomic Results in West Lincoln (continued)

The following section on West Lincoln will examine the community resources available in the community.

Community Resource Results in West Lincoln

West Lincoln community resources were quite sparse in some categories. There were no Arts, Entertainment or Multicultural type resources in West Lincoln (Map 51) and only one social resource, one health and wellness resource, two sports and recreation type resources and three special interest resources. Conversely, there were more educational type resources in West Lincoln (four).

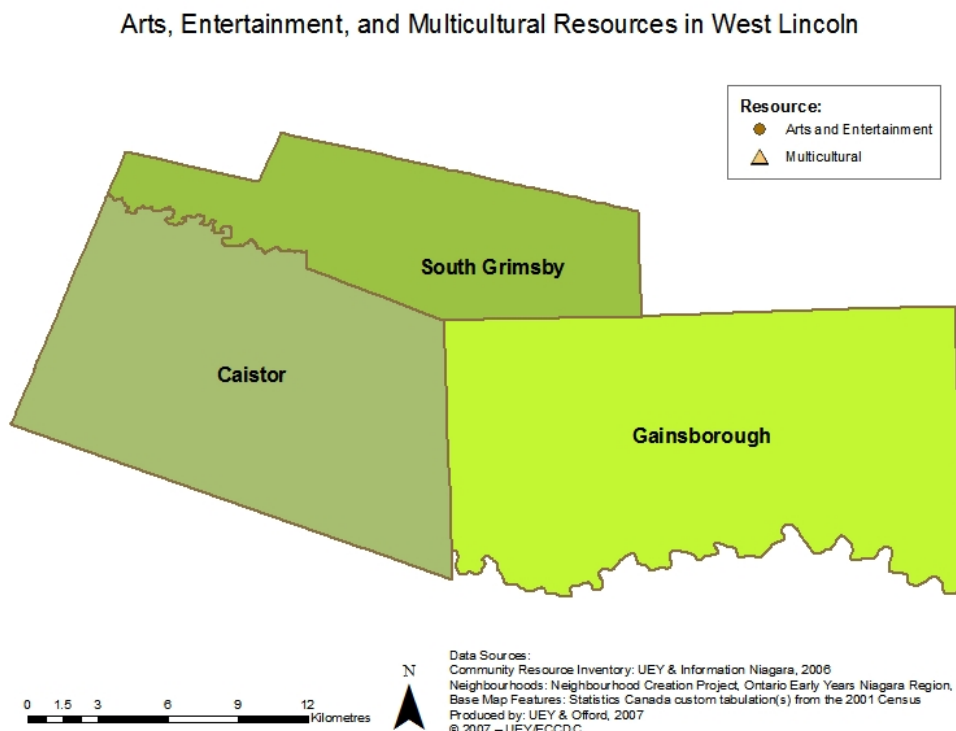
Wainfleet

"The Township is found on the northern shore of Lake Erie. There are three shopping areas in the Township of Wainfleet. They are located at Chamber's Corner, the Village of Wainfleet, and the Long Beach area. ... The Township of Wainfleet is approximately 217.40 square kilometres in size. It is best known for its agricultural productivity and Lakeshore area. The area is utilized for dairy, beef cattle, and cash crops."

Copyright © 2007 Township of Wainfleet

Through the Neighbourhood Creation Project (Ontario Early Years Niagara Region, Niagara Region Public Health Department, 2006), members of the Wainfleet community decided that there was only one neighbourhood in the Township, as outlined in Map 52.

Map 51. Arts, Entertainment and Multicultural Resources in West Lincoln (2007)



EDI Results in Wainfleet

A large percentage (82%) of children in Wainfleet are on track for learning at school across the five school readiness domains.

Overall vulnerability in Wainfleet was only 23.3%; well below the regional average of 30.1%. This means that 23.3% of the 33 students living in Wainfleet scored in the lowest 10th percentile on one or more readiness to learn domains. This is, however, a small sample of students.

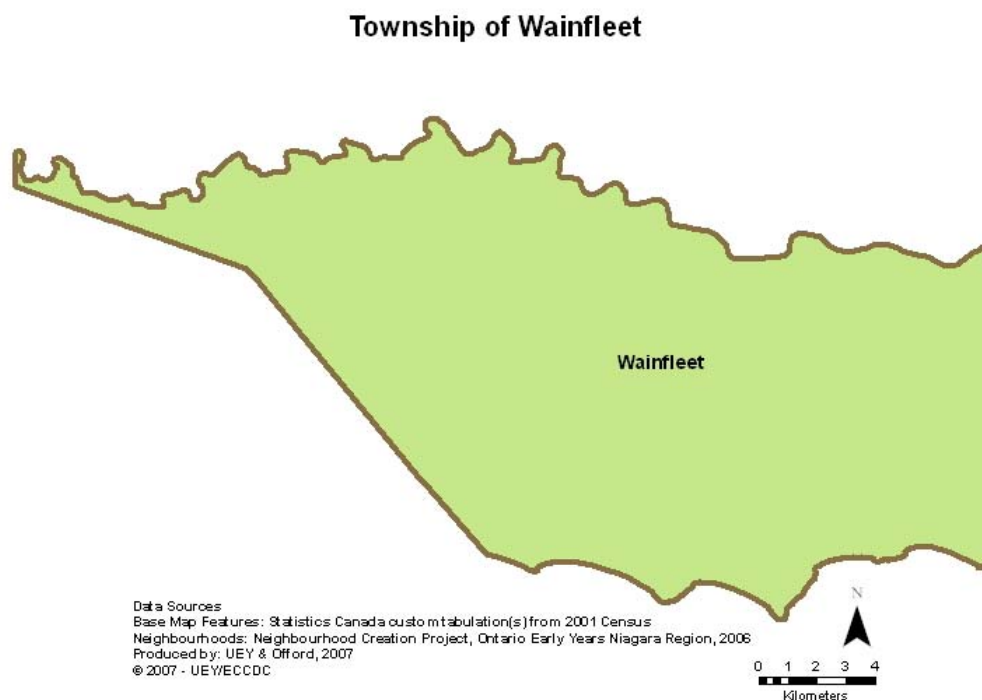
Students in Wainfleet showed the least percentage of vulnerability in the region. In the Social Competence and Emotional Maturity domains, only 6.7% of students scored in the lowest 10th percentile. However, this also means that there were only a few children scoring in the vulnerable range on both of these domains.

At the sub-domain level, however, senior kindergarten students living in Wainfleet did show weaknesses in the following areas:

- Shows adequate general knowledge (Communication Skills & General Knowledge);
- Communicates easily and effectively (Communication Skills & General Knowledge);
- Participates in storytelling or imaginative play (Communication Skills & General Knowledge);
- Gross and fine motor skills (Physical Health and Well-being);
- Basic numeracy (Language and Cognitive Development);
- Hyperactivity and inattention (Emotional Maturity); and
- Approach to learning, i.e. independence and adjustment (Social Competence).

What were the socioeconomic conditions this small group of high performing children were born into?

Map 52. Wainfleet and Sole Neighbourhood (2006)



Socioeconomic Results in Wainfleet

The following socioeconomic information for Wainfleet may be helpful to look at when considering EDI results in the municipality:

- Average household income is higher in Wainfleet compared to the national average.
- Home ownership is high - 90% of residents own their home. As then expected, mobility is quite low, with only 8% of residents having moved within the past year (2000).
- Similar to the regional average, 28% of residents aged 20 and older have not acquired their high school diploma.
- Only 9% of residents have received a university degree or higher. This is lower than the regional average.

The relatively lower levels of adult education in Wainfleet do not appear to be having a negative effect on EDI results. Could the relatively high averages in income and home ownership be mitigating these anticipated influences?

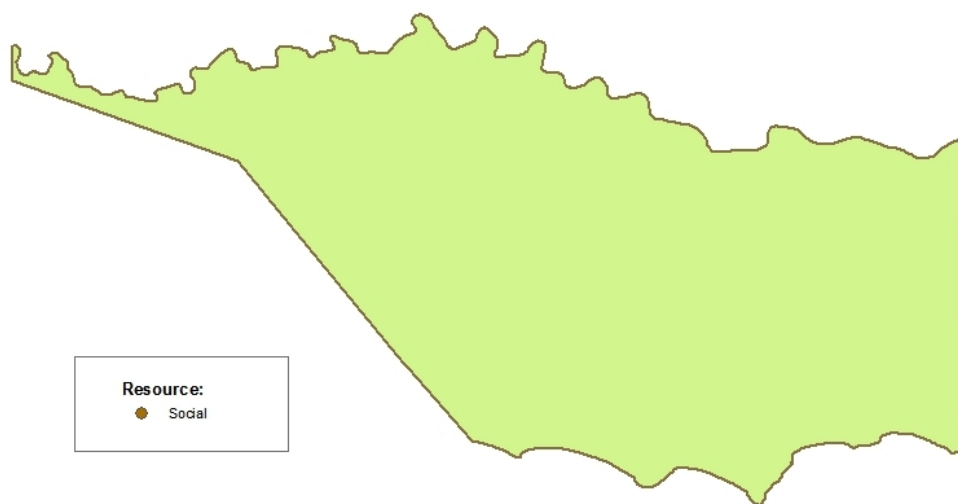
Given the overall strong showing in the municipality, further investigation into factors contributing to this success might be informative for the region as a whole. What other community conditions are present in Wainfleet?

Community Resource Results in Wainfleet

Wainfleet shows a marked lack of community resources available for children 0-6 years of age and their parents/caregivers, with only two resources for each of sports and recreation and special interest, and one for all other resource types except social where none were reported (Map 53).

Map 53. Social Resources in Wainfleet (CRI 2007)

Social Resources in Wainfleet



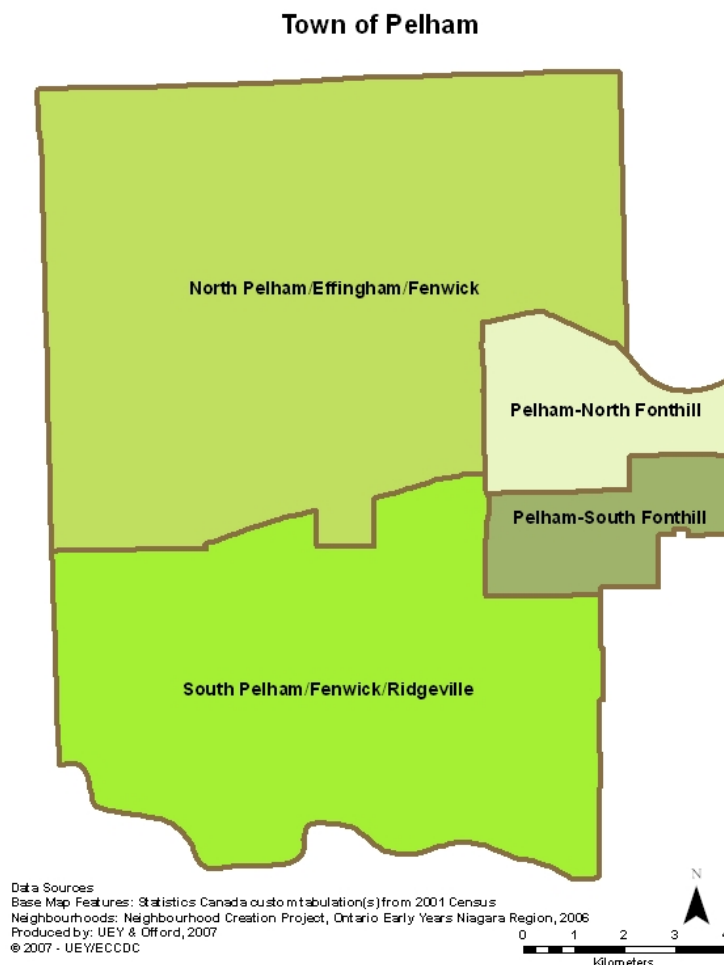
Pelham

"Nestled between two of the Great Lakes, Erie and Ontario; Pelham is the heart of the Niagara Region. In 1970, the Town of Pelham was created to unify five historical communities: Fonthill, Ridgeville, Effingham, North Pelham and Fenwick into a single blossoming town covering 126.42 square kilometres. This integration created a perfect blend of successful farming and growing commercialism. At first glance at a map, you will notice that Pelham is ideally located. It borders the big cities but is steadfast in remaining a peaceful, pleasant community. ... Our thriving town of 15,272 (2001 Canadian census) is adorned with the beauty and majesty of the Niagara Escarpment. In the heart of Pelham is the Fonthill Kame. The Kame gives Pelham a topographically unique formation and a resourceful and fruitful position in the Niagara Region."

Copyright © 2007 Town of Pelham

Two of the four neighbourhoods in Pelham were amalgamated in order to report on EDI data and create a sustainable reporting solution. Neighbourhoods were amalgamated based on geographic proximity, similar socioeconomic conditions, and need to meet minimum sample size of 30. The amalgamated neighbourhood map will only be used for reporting EDI results. Maps with the original neighbourhoods (Map 54) will be used to report on socioeconomic conditions and community resources and their names will be included in all maps - out

Map 54. Pelham Neighbourhoods (2006)



Pelham (continued)

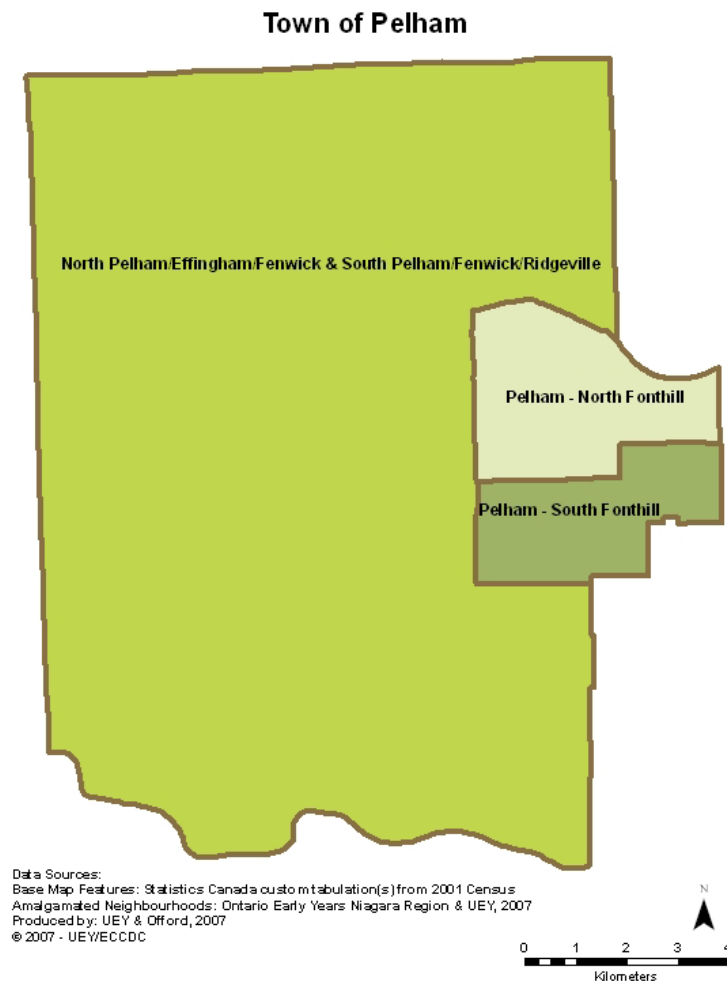
of respect and appreciation for the work and wisdom of the community champions who participated in the Neighbourhood Creation Project (amalgamated neighbourhoods are displayed in Map 55).

EDI Results in Pelham

A vast percentage of children (86%) living in Pelham are on track for school across the five domains. The overall vulnerability rate was 22.0% among the 121 children participating in Pelham. These children scored below the 10th percentile on one or more readiness to learn domains.

Examining the Pelham EDI results more closely at the neighbourhood level reveals that there was one neighbourhood that was not doing as well as the other two. The North Pelham/Effingham/Fenwick & South Pelham/Fenwick/Ridgeville neighbourhood had overall vulnerability results (30.4%) that were higher than the regional and national averages (30.1% and 25.9% respectively). This amalgamated neighbourhood represents the more rural areas of Pelham and seemed to experience the most challenges in the Emotional Maturity and Language and Cognitive Development domains.

Map 55. Amalgamated EDI Neighbourhoods in Pelham (2007)



For the other neighbourhoods, North Fonthill and South Fonthill, overall vulnerability rates were quite low (19.4% and 14.3% respectively). In fact, the South Fonthill neighbourhood had the lowest overall vulnerability (14.3%) compared to all other 50 neighbourhoods in the Niagara Region.

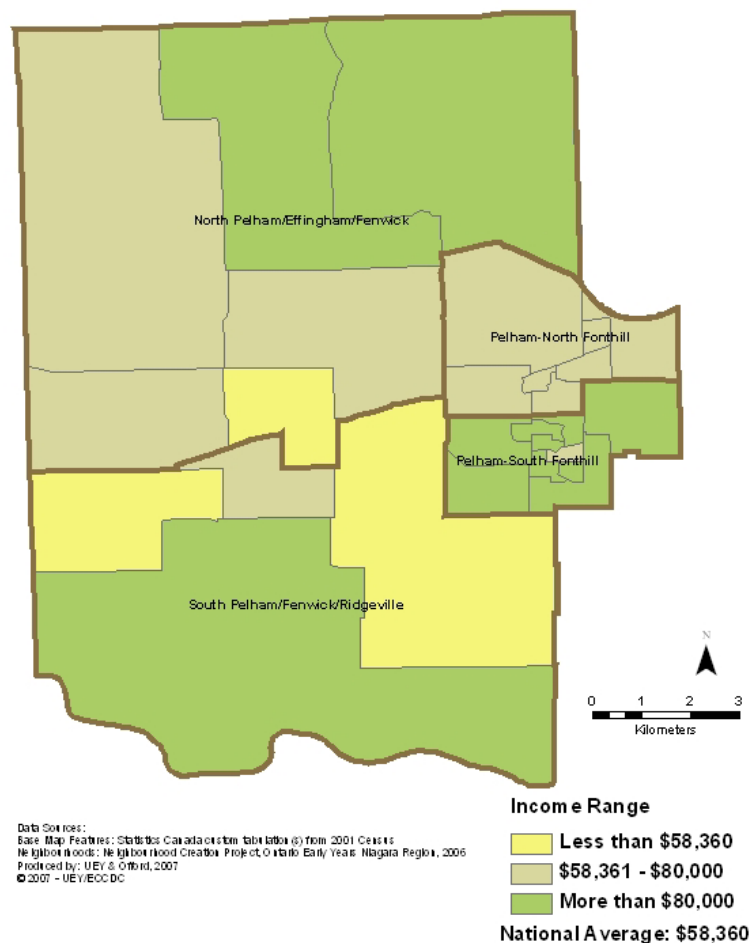
In South Fonthill, there were no students who scored in the vulnerable range in Communication Skills & General Knowledge. There was also very low vulnerability in the Language and Cognitive Development and Social Competence domains.

At the sub-domain level, however, senior kindergarten students in Pelham did show weaknesses in five of the twenty subdomains:

- Shows adequate general knowledge (Communication Skills and General Knowledge);
- Physical readiness for the school day (Physical Health and Well-being);
- Gross and fine motor skills (Physical Health and Well-being);

Map 56. Average Household Income in Pelham (2001 Census)

Average Household Income in Pelham



EDI Results in Pelham (continued)

- Interest in literacy/numeracy and memory (Language and Cognitive Development); and
- Prosocial and helping behaviour (Emotional Maturity).

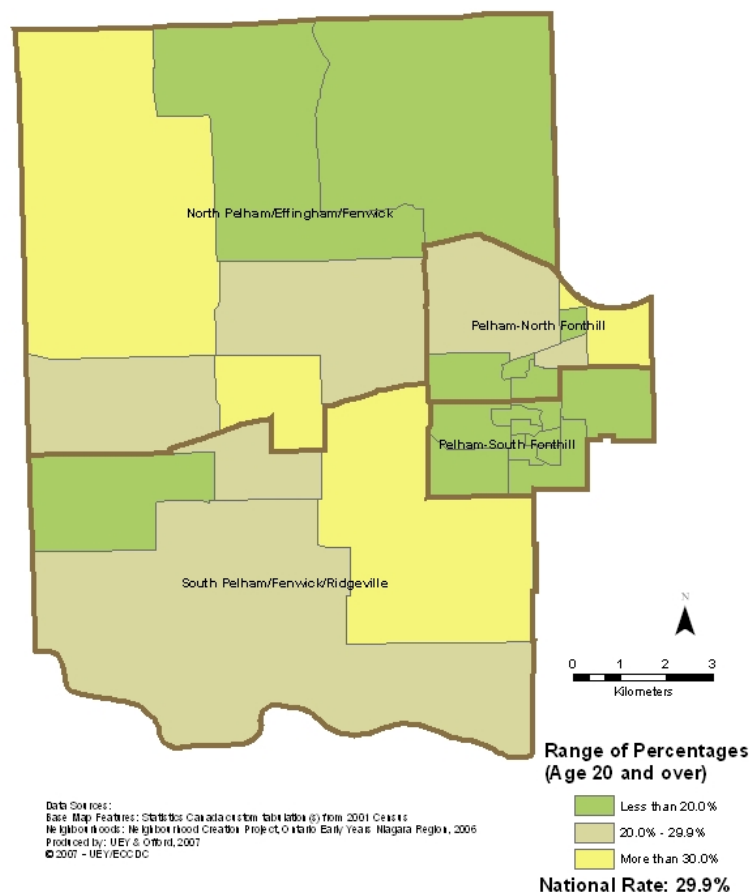
Considering the marked difference between neighbourhoods in Pelham, further examination of community conditions might be informative.

Socioeconomic Results in Pelham

Map 56 (page 70) displays average household income in Pelham in 2001 as compared to the national average (\$58,360). Somewhat surprisingly, there are pockets in the North Pelham/Effingham/Fenwick and South Pelham/Fenwick/Ridgeville neighbourhoods that show income below the national average.

Map 57. Percentage of the Pelham Population Aged 20 and Older Without a High School Diploma (2001 Census)

% of Pelham Population without High School



Similar to the income results for the municipality, there were pockets within Pelham where more than 30% of residents aged 20 and older did not have a high school diploma.

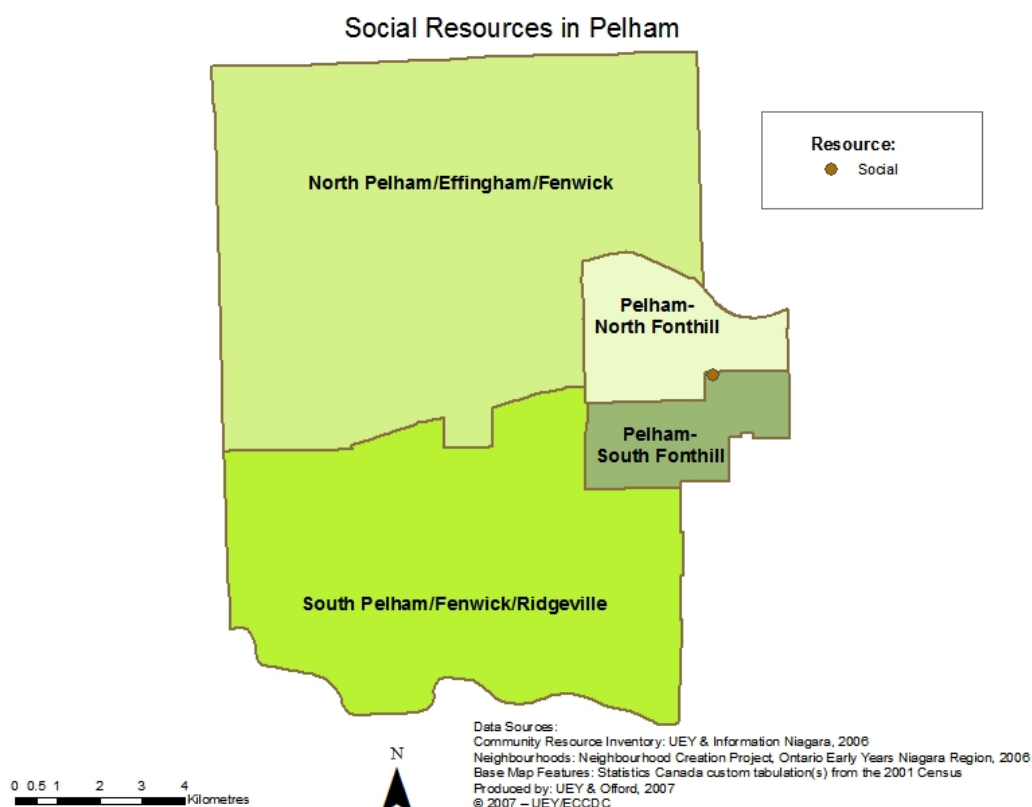
As shown in Map 57, the majority of these yellow coloured areas were concentrated in the North Pelham/Effingham/Fenwick and South Pelham/Fenwick/Ridgeville neighbourhood. The rest of Pelham shows that the majority (more than 70%) of the population has obtained their high school diploma.

There are also low levels of mobility and lone parent families in Pelham, as well as high rates of home ownership. Considering these relatively good socioeconomic conditions, it does seem puzzling that the North Pelham/Effingham/Fenwick and South Pelham/Ridgeville neighbourhood is showing much higher vulnerability rates, as compared to the North and South Fonthill neighbourhoods. What other community factors might be influencing these results?

Community Resource Results in Pelham

Pelham community resource maps indicate a lack of services in North Pelham/Effingham/Fenwick and South Pelham/Ridgeville neighbourhoods. There was only one (1) health & wellness and one (1) education resource found in the municipality, both of which were located in the South Pelham/Fenwick/Ridgeville neighbourhood. As shown in Map 58, there was only one social resource located in Pelham located in the South Fonthill neighbourhood.

Map 58. Social Resources in Pelham (CRI 2007)



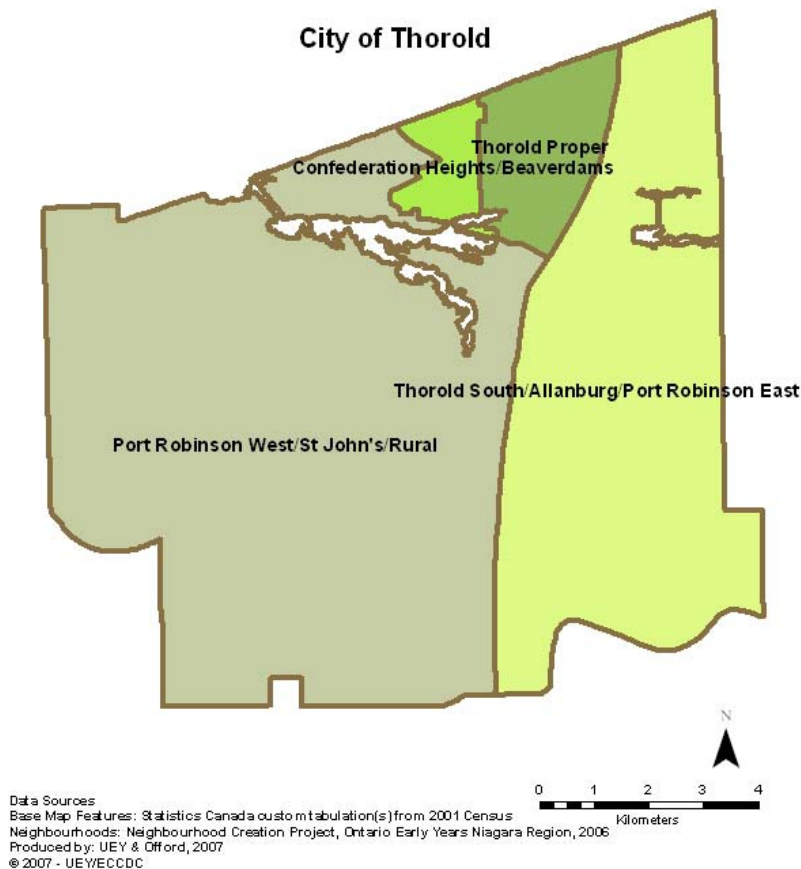
Thorold

"With a population of over 18,000 spread over approximately 8,490 hectares (21,000 acres) of agricultural, commercial, industrial and residential land, the City of Thorold has something for everyone. ...Thorold, which is centrally located within the Niagara Region, is also the centre of North America's profit zone, within one day's driving distance of 60% of the North American population. The City is conveniently located within a modern transportation hub and enjoys access to the Atlantic Ocean and the Great Lakes, via the St. Lawrence Seaway - Welland Canal, while convenient rail linkages provide access throughout the United States and Canada."

Copyright © 2007 City of Thorold

Two of the four neighbourhoods in Thorold were amalgamated in order to report on EDI data. Neighbourhoods were amalgamated based on geographic proximity, similarity of socioeconomic conditions, and minimum reporting numbers for the EDI. The amalgamated neighbourhood map will only be used for reporting EDI results. Maps with the original neighbourhoods will be used to report on socioeconomic conditions and community resources and their names will be included in all maps - out of respect and appreciation for the work and wisdom of the community champions who participated in the Neighbourhood Creation Project. Maps 59 and 60 show the original and amalgamated neighbourhoods in Thorold.

Map 59. Thorold Neighbourhoods (2006)



EDI Results in Thorold

More than three quarters of the children (76%) in Thorold are on track for learning in school across the five domains.

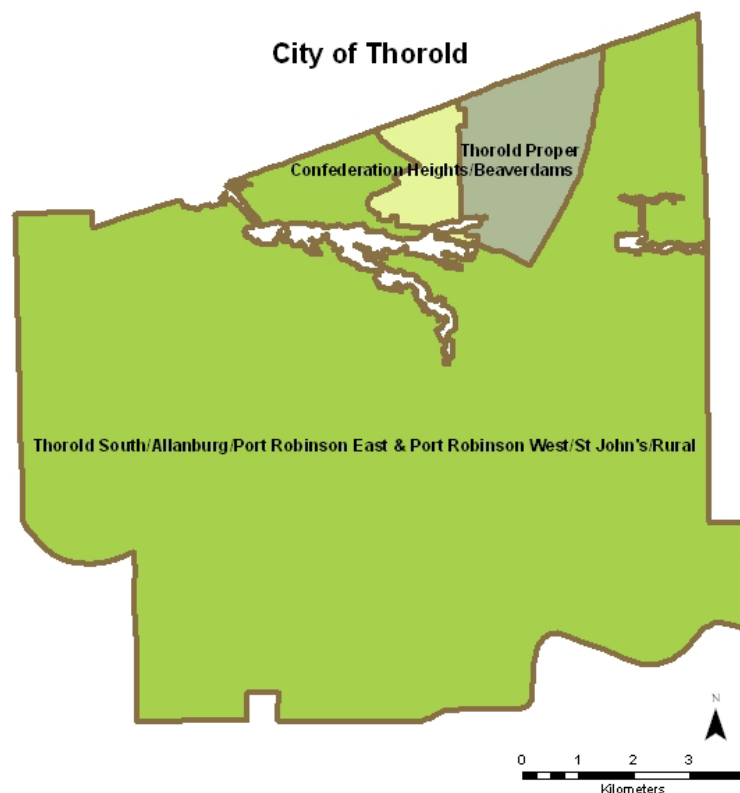
Overall, vulnerability in Thorold was 34.5% among the 136 participating children, which was higher than the regional and national averages (30.1% and 25.9% respectively). These children in Thorold scored in the lowest 10th percentile on one or more readiness to learn domains.

For Thorold overall, children showed weakness in 17 of the 20 subdomains. Students living in Thorold appeared to be experiencing some challenges with all five subdomains of the Communication Skills & General Knowledge domain, all four sub-domains of the Social Competence domain, and all four sub-domains of the Language & Cognitive Development domain.

Communication Skills & General Knowledge domain:

- Communicates easily and effectively;
- Participates in storytelling or imaginative play;
- Articulates clearly;
- Shows adequate general knowledge; and
- Has proficiency in their native language.

Map 60. Amalgamated EDI Neighbourhoods in Thorold (2007)



Data Sources:
Base Map Features: Statistics Canada custom tabulation(s) from 2001 Census
Amalgamated Neighbourhoods: Ontario Early Years Niagara Region & UEY, 2007
Produced by: UEY & Offord, 2007
© 2007 - UEY/ECDC

EDI Results in Thorold (continued)

Social Competence domain:

- Overall social competence;
- Responsibility and respect;
- Approach to learning; and
- Readiness to try new things.

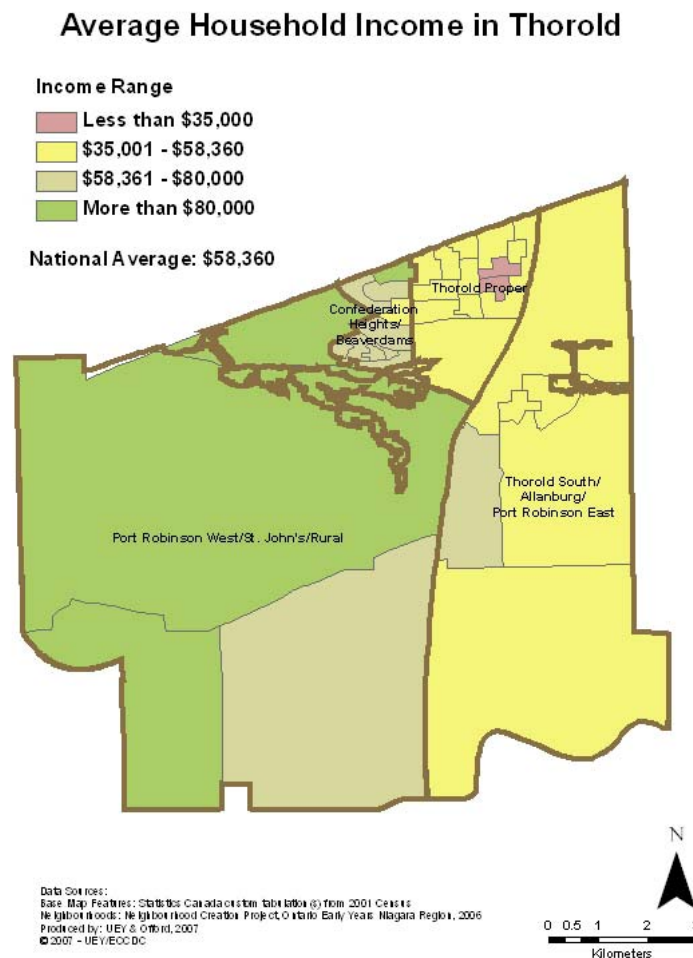
Language & Cognitive Development domain:

- Basic literacy;
- Interest in literacy/numeracy and memory;
- Advanced literacy; and
- Basic numeracy.

Additionally, students showed weakness in the following other sub-domains:

- Physical independence (Physical Health and Well-being);
- Gross and fine motor skills (Physical Health & Well-being);
- Aggressive behaviour (Emotional Maturity); and
- Hyperactivity and inattention (Emotional Maturity).

Map 61. Average Household Income in Thorold (2001 Census)



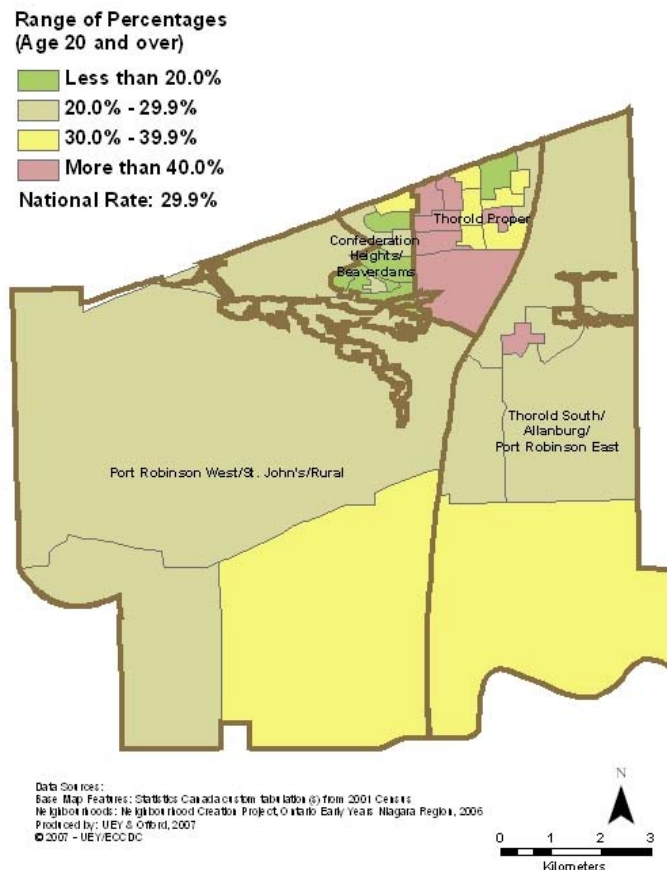
The Thorold Proper neighbourhood had the second highest overall vulnerability (47.4%) compared to the other 50 neighbourhoods in the Niagara Region. This means that almost half of the 60 children living in the Thorold Proper neighbourhood scored in the lowest 10th percentile on one or more of the school readiness domains. In fact, vulnerability was higher than the regional average across all five domains in this neighbourhood. Moreover, vulnerability was more than double the regional average in the Physical Health & Well-being and Language & Cognitive Development domains.

Overall vulnerability for the Thorold South/Allanburg/Port Robinson East & Port Robinson West/St. John's/Rural neighbourhood (21.2%) was lower than the regional and national average while overall vulnerability for the Confederation Heights/Beaverdams neighbourhood was higher than the national average but lower than the regional average at 27.0%. The Thorold South/Allanburg/Port Robinson East & Port Robinson West/St. John's/Rural neighbourhood had low vulnerability in each of the five domains while students living in the Confederation Heights/Beaverdams neighbourhood showed weakness in the Emotional Maturity and Language & Cognitive Development domains particularly.

What makes the Thorold Proper neighbourhood so different from the other two neighbourhoods in the city? Why was the vulnerability rate so high here? Let's investigate further to find reasons that may explain the difference in vulnerability.

Map 62. Percent of Thorold Population Without a High School Diploma (2001 Census)

% of Thorold Population without High School



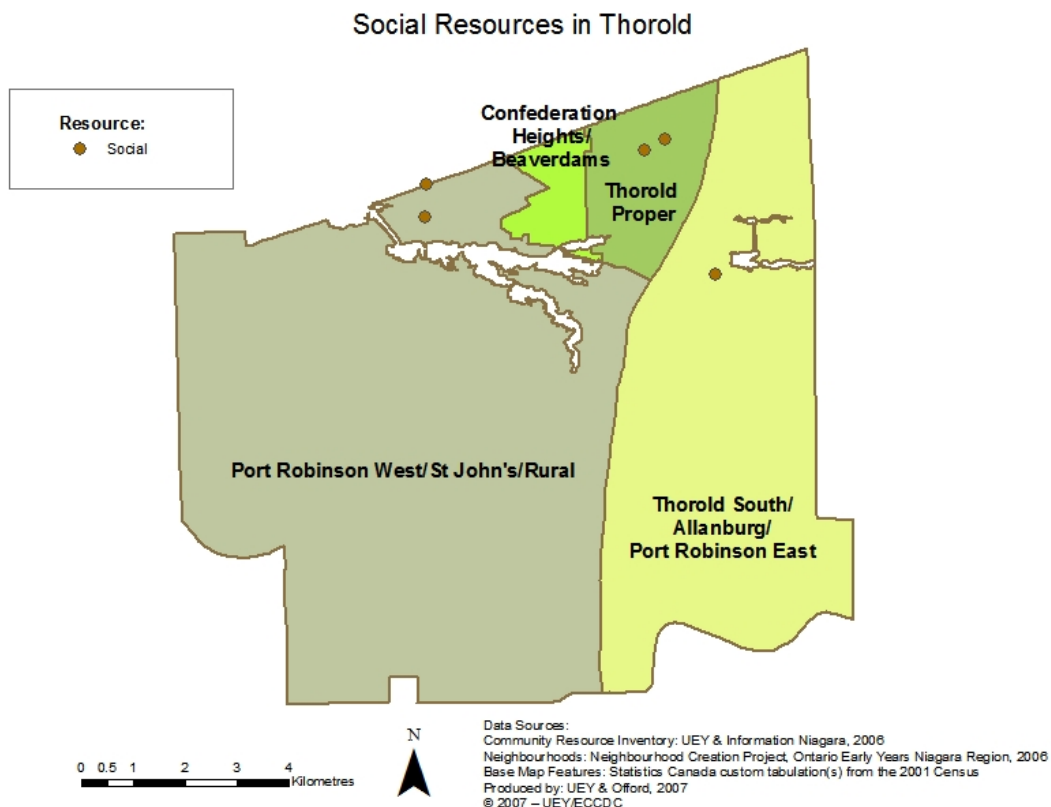
Socioeconomic Results in Thorold

Beginning with average household income, as shown in Map 61 (page 75), there was a pocket of low income (less than \$35,000) in Thorold Proper. The entire neighbourhood demonstrated income below the national average based on 2001 data. For the majority of the Port Robinson West/St. John's/Rural neighbourhood, their incomes were in the highest category, above \$80,000. The majority of Thorold South/Allanburg/Port Robinson East neighbourhood is coloured yellow, meaning that most families made between \$35,001 and \$58,360 in 2001.

As previously mentioned, children's educational attainment is associated with parental education attainment. As displayed on Map 62 (page 76), the majority of the Thorold Proper neighbourhood is coloured in red, meaning that more than 40% of residents aged 20 and older have not obtained their high school diploma. However, on the other hand, about half of Thorold is coloured in beige which means that only between 20-29.9% of residents have not finished high school, which is better than the national average of 29.9%.

Furthermore, only 8% of residents living in Thorold Proper had obtained a university degree. This was lower than the regional average of 13%. Mobility in Thorold Proper was also higher than the regional average. More specifically, 13% of residents living in Thorold Proper had moved within the past year. Similarly, the percentage of those living in this neighbourhood who owned their home was lower than the regional average. Only 67% of residents living in Thorold Proper owned their home in 2001. The percentage of single parent families was also higher in Thorold Proper compared to regional averages. In Thorold Proper, 20% of families were single parent families in 2001.

Map 63. Social Resources in Thorold (CRI 2007)

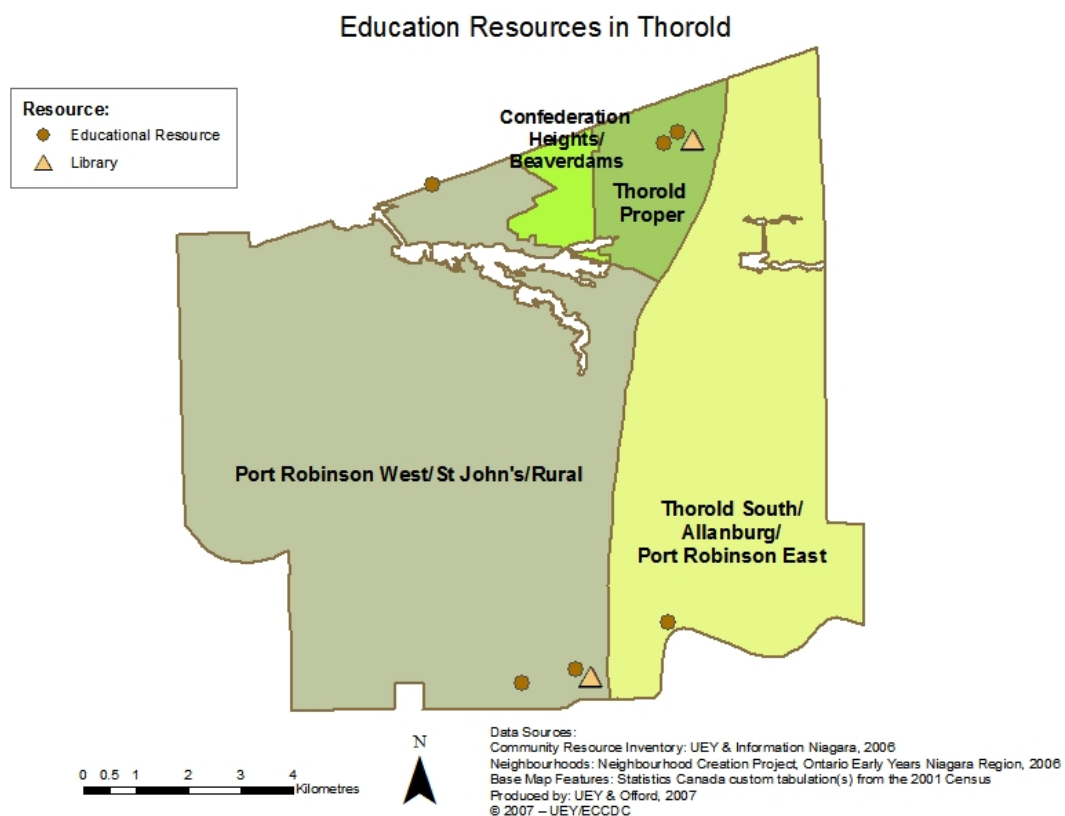


Considering the various socioeconomic factors of income, education, mobility, home ownership, and family status it is not surprising that EDI vulnerability percentages are the highest in the region in Thorold Proper. What other community factors might be at work in the city and, specifically, its Thorold Proper neighbourhood?

Community Resource Results in Thorold

Thorold does appear to have good levels of community resources and most are located in Thorold Proper. In fact, there were at least two community resources in each category. However, there were relatively less arts, entertainment and multicultural; social; and sports and recreation resources in the city than there were education, health and wellness; and special interest (faith-based) ones. Since Thorold Proper does appear to be well-resourced, it seems as though in this case socioeconomics may likely be having an effect on the overall development and readiness to learn at school. It might also be helpful to look at any barriers to accessing available services in this community and Thorold Proper neighbourhood; particularly for education resources, given the high rates of vulnerability in Communication Skills and General Knowledge and Language and Cognitive Development domains, and social resources given the overall socioeconomic conditions. Maps 63 and 64 show social and education resources for children 0-6 and their parents and caregivers in Thorold.

Map 64. Education Resources in Thorold (CRI 2007)



Welland

"Located in the heart of the Niagara Peninsula, Welland's weather is tempered by two Great Lakes, Erie and Ontario. The result being a moderate climate, not too hot, not too cold, not too wet and not too dry. Being central in the Niagara Region it has easy access to all major transportation corridors. Everything from rural tranquility to urban excitement is within easy reach. "Where Rails and Water Meet" has long been the slogan for this City. ... Of all the cities in the Niagara Peninsula perhaps Welland best represents the cultural mosaic that truly is Canada, a fact that is celebrated annually with its Folklore Festival, just one of many festivals the City hosts. With a high French-Canadian population the City is also home to a significant Italian community and over the past 10 years has become the port of call for immigrants from South America, Africa, Asia and Russia."

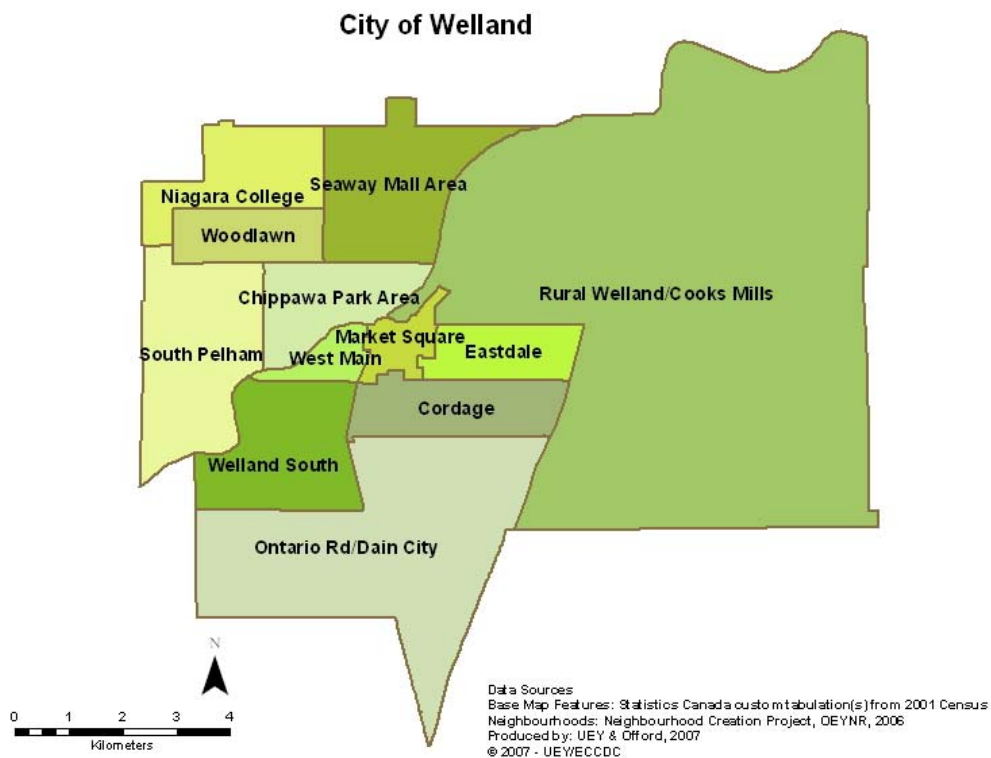
Copyright © 2007 City of Welland

Ten of the twelve neighbourhoods in Welland were amalgamated in order to report on EDI data and create a long-term workable solution. Neighbourhoods were amalgamated based minimum required sample sizes, geographic proximity, and similar socioeconomic conditions. This amalgamated map will only be used for reporting EDI results. Maps with the original neighbourhoods will be used to report on socioeconomic conditions and community resources and their names will be included in all maps - out of respect and appreciation for the work and wisdom of the community champions who participated in the Neighbourhood Creation Project. Maps 65 and 66 show the original and amalgamated neighbourhood maps in Welland.

EDI Results in Welland

More than three quarters of the children (76%) living in Welland are on track for learning across the five domains.

Map 65. Welland Neighbourhoods (2006)



Overall, EDI vulnerability rates in Welland were quite high with over 33.3% of students scoring in the lowest 10th percentile on one or more of the readiness to learn domains (n=318).

At the neighbourhood level, the Cordage and West Main area showed almost half of students (48.9%) scored in the vulnerable range (n=50) on the EDI overall. This is the highest vulnerability rate in the entire Niagara Region.

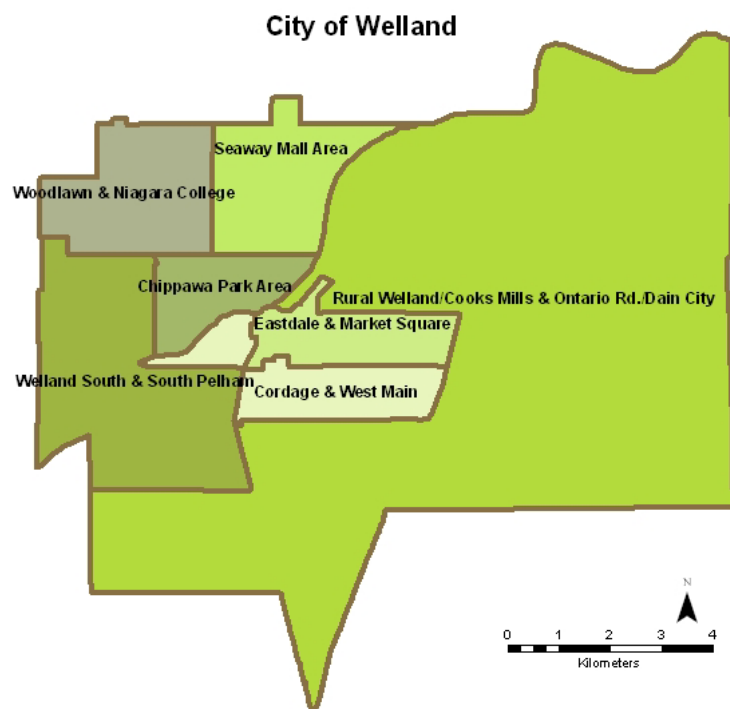
At the domain level, Cordage and West Main also had the highest vulnerability rate (36.4%) on the Physical Health and Well-being, Emotional Maturity (20.0%), and Communication Skills & General Knowledge (31.1%) domains. Similarly, the Rural Welland/Cooks Mills and Ontario Rd/Dain City neighbourhood also showed very high vulnerability overall (42.1%). In fact, vulnerability rates in this amalgamated neighbourhood were above the regional averages in each of the five domains of the EDI.

In contrast, the Chippawa Park neighbourhood showed relatively low vulnerability, with only 17.1% of students scoring in the lowest 10th percentile on one or more of the domains (n=35).

At the sub-domain level for all of Welland, there were above regional average scores of risk or vulnerability for 13 out of 20 areas, as follows:

- Communicates easily and effectively (Communication Skills and General Knowledge);
- Participates in storytelling or imaginative play (Communication Skills and General Knowledge);
- Articulates clearly (Communication Skills and General Knowledge);
- Has proficiency in their native language (Communication Skills and General Knowledge);
- Physical readiness for the school day (Physical Health and Well-being);
- Gross and fine motor skills (Physical Health and Well-being);
- Interest in literacy/numeracy and memory (Language and Cognitive Development);
- Advanced literacy (Language and Cognitive Development);

Map 66. Amalgamated EDI Neighbourhoods in Welland (2007)



Data Sources:
Base Map Features: Statistics Canada custom tabulation(s) from 2001 Census
Amalgamated Neighbourhoods: Ontario Early Years Niagara Region & UEY, 2007
Produced by: UEY & Offord, 2007
© 2007 - UEY/ECCDC

EDI Results in Welland (continued)

- Aggressive behaviour (Emotional Maturity);
- Hyperactivity and inattention (Emotional Maturity);
- Overall social competence (Social Competence);
- Approach to learning (Social Competence); and
- Readiness to explore new things (Social Competence).

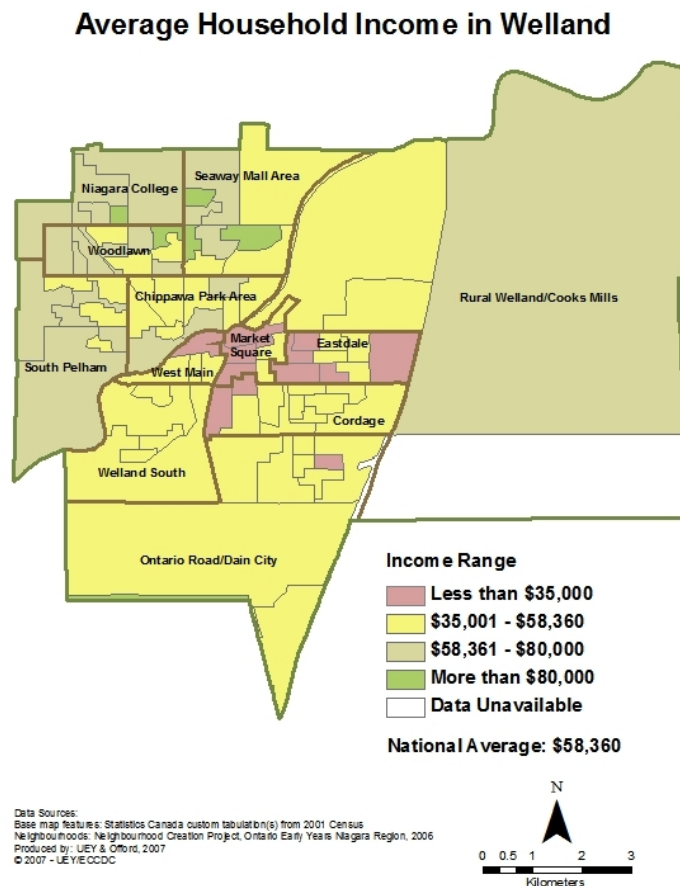
Considering the variation between neighbourhood EDI scores in Welland, it is important to explore socioeconomic data, as well as how the community is supporting children with resources before they are school age in Welland.

Socioeconomic Results in Welland

In general, the majority of Welland had income below the national average. As shown in Map 67, all of Market Square, Eastdale, Cordage, Welland South, and Ontario Rd/Dain City had incomes below the national average of \$58,360. There were also concentrated pockets where income was less than \$35,000 in Market Square, Eastdale, and Ontario Rd/Dain City in 2001.

Map 68 displays family structure in Welland in 2001 and shows that more than 45% of the majority of neighbourhoods in West Main, Market Square, Cordage, and pockets within Eastdale and South Pelham were

Map 67. Average Household Income in Welland (2001 Census)



single parent families. Rural Welland/Cooks Mills and Niagara College neighbourhoods showed low to moderate rates of single parent families (shown in beige and green on map).

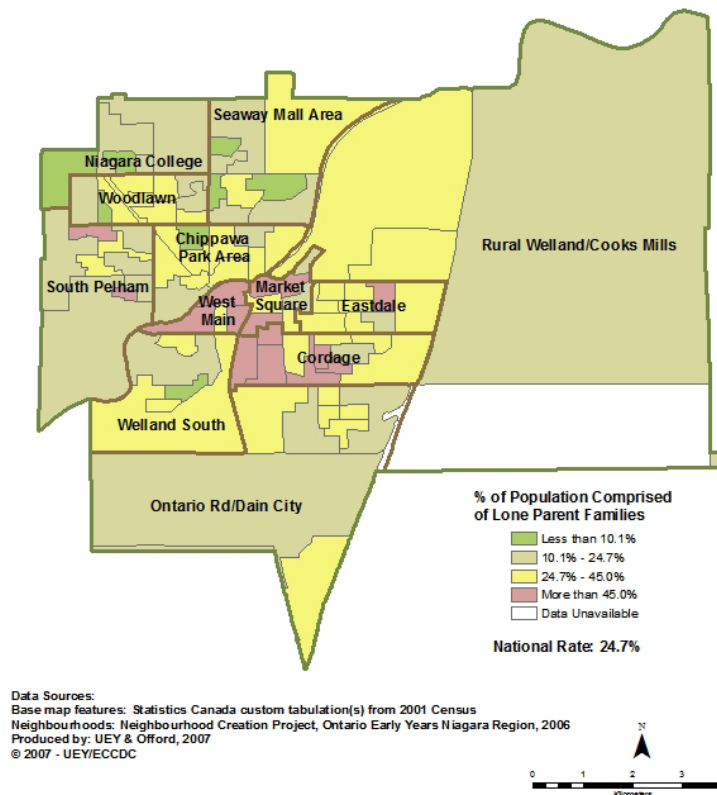
In terms of education, an overwhelming amount of Welland showed more than 40% of the population aged 20 and over had not completed high school (as shown in red on Map 69 – page 83). The majority of Seaway Mall, Niagara College, and Woodlawn neighbourhoods showed lower than national rates of not completing high school.

Another important indicator is the housing stress index (the percent of the population spending 30% or more of their income on shelter). Map 70 (page 84) outlines the housing stress index results for Welland neighbourhoods. About half of the Eastdale, Market Square, and West Main neighbourhoods showed that more than 40% of residents were spending 30% or more of their income on shelter. There were also red pockets in Seaway Mall, Chippawa Park and Area, Woodlawn, and South Pelham. In the more rural/outlying areas of Welland, we see that the 7% to 22.95% of the population spends more than 30% of their income on shelter.

Given the poor socioeconomic conditions in much of Welland, it would appear that the connection to high rates of vulnerability on the EDI overall and its domains is clear in many areas of the city. At the same time, the Eastdale and Market Square and Chippawa Park Area neighbourhoods appear to have similar challenges, socioeconomically, as other Welland neighbourhoods such as Cordage and West Main, yet show relatively stronger EDI scores. What might be making the difference in these Welland neighbourhoods? It should be noted that there are also pockets of immigrant and Aboriginal population rates which are higher than the national average within these neighbourhoods.

Map 68. Family Structure in Welland (2001 Census)

Family Structure in Welland



Socioeconomic Results in Welland (continued)

To find out more we'll now turn to an examination of community resources for children 0-6 years of age and their parents/caregivers in the city.

Community Resource Results in Welland

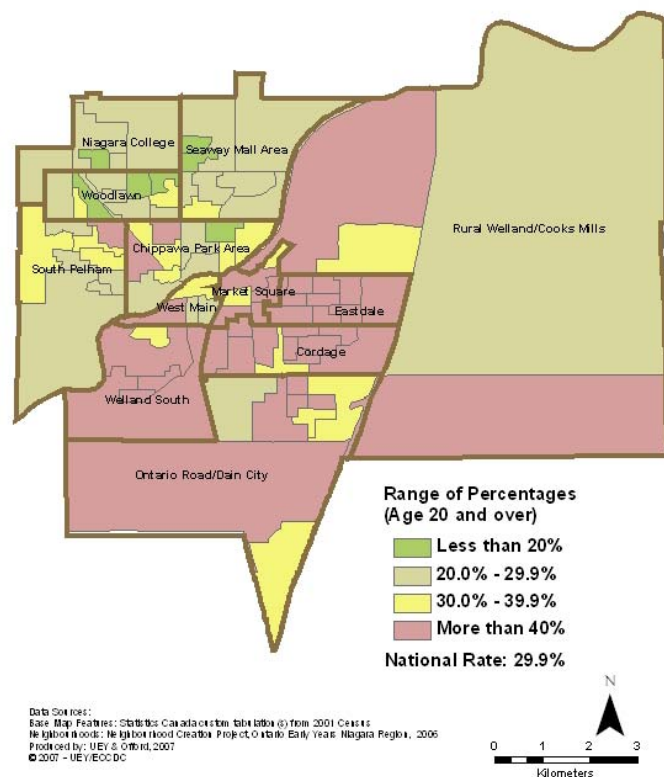
A lack of resources may be cause for concern in the Rural Welland/Cooks Mills & Ontario Rd/Dain City neighbourhoods, as socioeconomic conditions appear quite good, but EDI vulnerability was high and resources were generally scarcer in these areas.

However, this is not the case for central Welland. In fact, the neighbourhoods in the downtown core have many resources. At the same time, the most resources seem to be found in the Eastdale and Market Square and College Park Area neighbourhoods which have similar community conditions to neighbourhoods such as Cordage and West Main yet show stronger EDI scores. Is there a difference between the types or accessibility of services in these two areas? Are there other community factors affecting the wide variance on EDI scores, despite similar socioeconomic conditions?

There were relatively fewer arts, entertainment and multicultural resources in Welland, compared to the other types of programs and services for children 0-6 years of age and their parents/caregivers. As map 71 shows, the majority of those available are located in the surprisingly strong performing Eastdale and Market Square amalgamated EDI neighbourhood. In addition, Eastdale & Market Square neighbourhood had many more social and educational resources compared to the rest of the neighbourhoods in Welland.

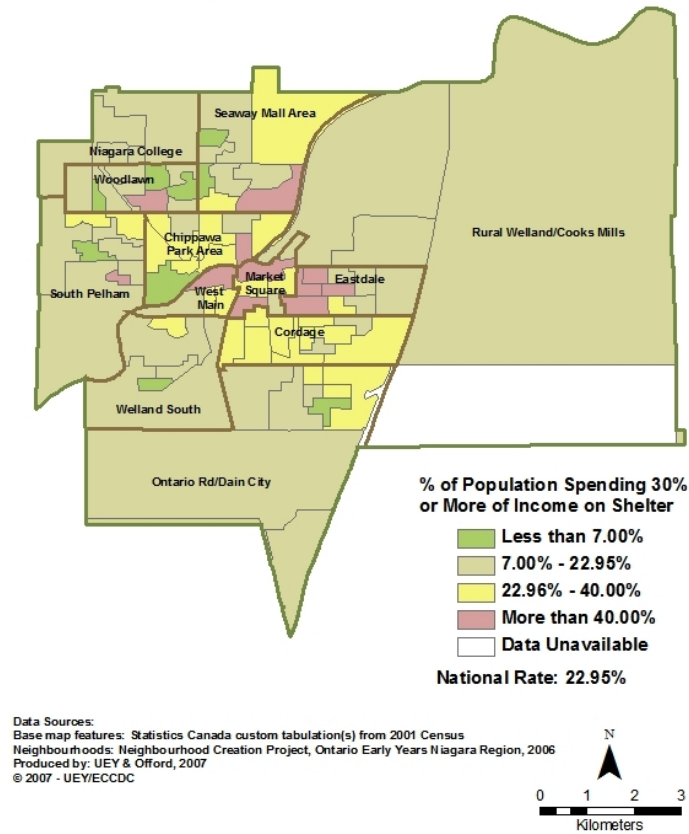
Map 69. Percent of Welland Population Aged 20 and Older Without a High School Diploma (2001 Census)

% of Welland Population without High School



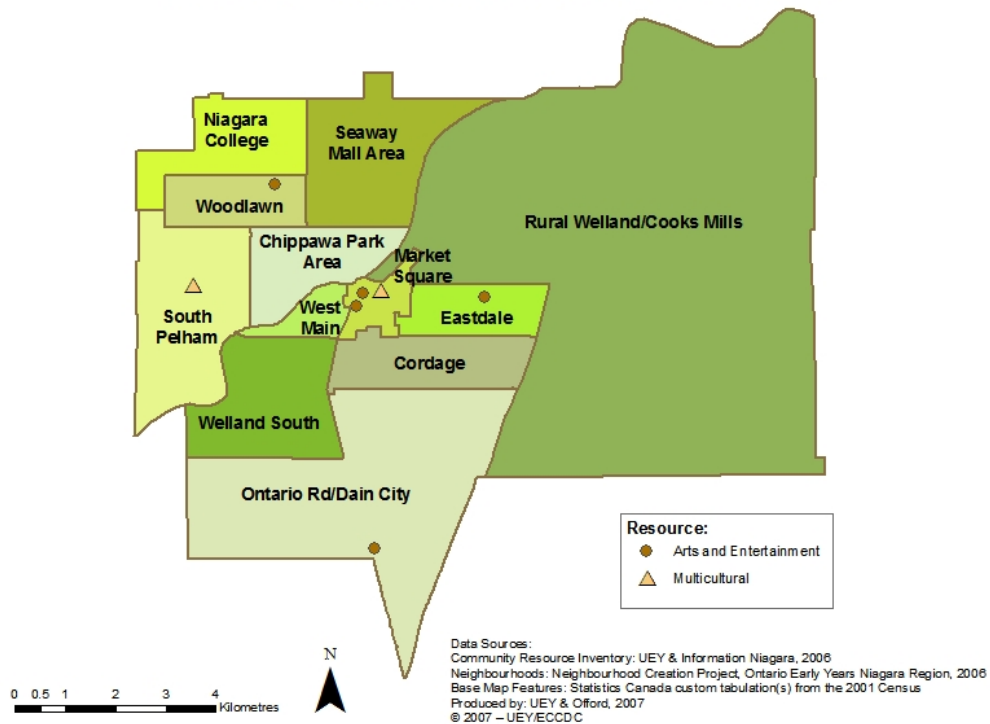
Map 70. Housing Stress Index in Welland (2001 Census)

Housing Stress Index in Welland



Map 71. Arts, Entertainment, and Multicultural Resources in Welland (2007)

Arts, Entertainment, and Multicultural Resources in Welland



Port Colborne

"Port Colborne is a dynamic city with a great sense of community. You can see it in the assortment of volunteer organizations servicing the city. You can see the pride our residents display in their homes and businesses. And you will know it by the friendly welcome you will receive from everyone who calls Port Colborne home. ... Our city has it all! We have excellent recreational facilities for our residents and visitors to enjoy. We have Provincially and Nationally acclaimed cultural and entertainment venues. We have shops and services for every request and desire. All of this is set in our beautiful lakeside city!"

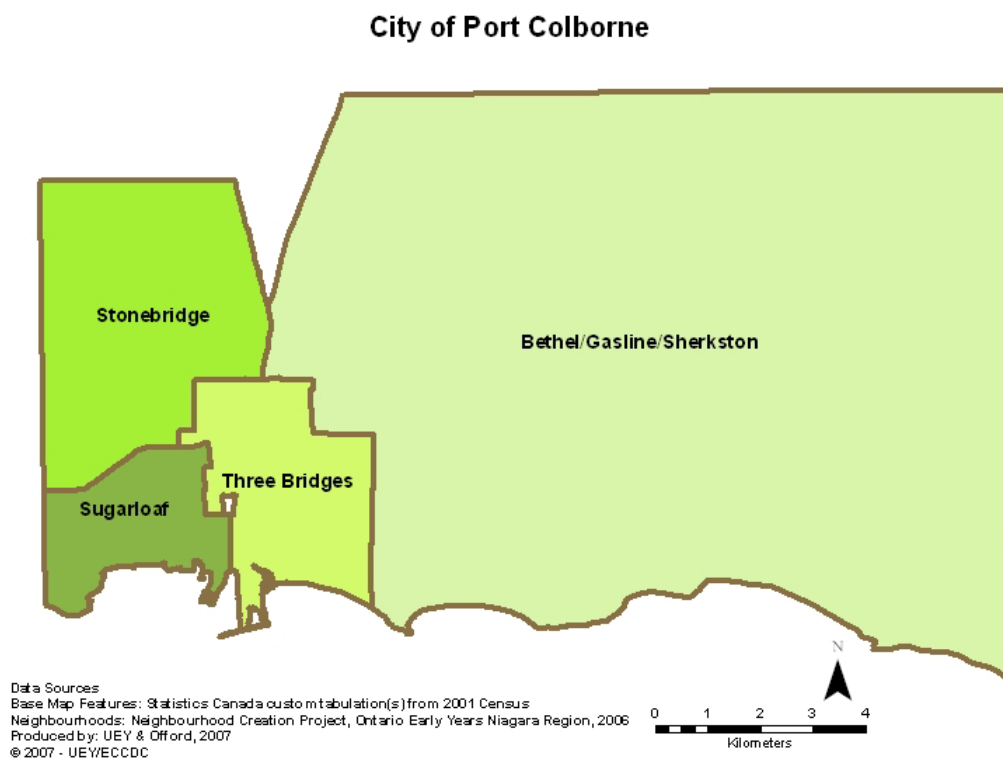
Copyright © 2007 City of Port Colborne

Two of the four neighbourhoods in Port Colborne were amalgamated in order to report on EDI data and create a long-term workable solution for reporting over time. Neighbourhoods were amalgamated based on sample size requirements, geographic proximity, and similar socioeconomic conditions. This map will only be used for reporting EDI results. Maps with the original neighbourhoods will be used to report on socioeconomic conditions and community resources and their names will be included in all maps - out of respect and appreciation for the work and wisdom of the community champions who participated in the Neighbourhood Creation Project. Maps 72 and 73 show original and amalgamated neighbourhoods in Port Colborne.

EDI Results in Port Colborne

Based on the EDI, more than three quarters (76%) of the 111 participating children in Port Colborne were considered ready to learn across the five domains in 2006.

Map 72. Port Colborne Neighbourhoods (2006)



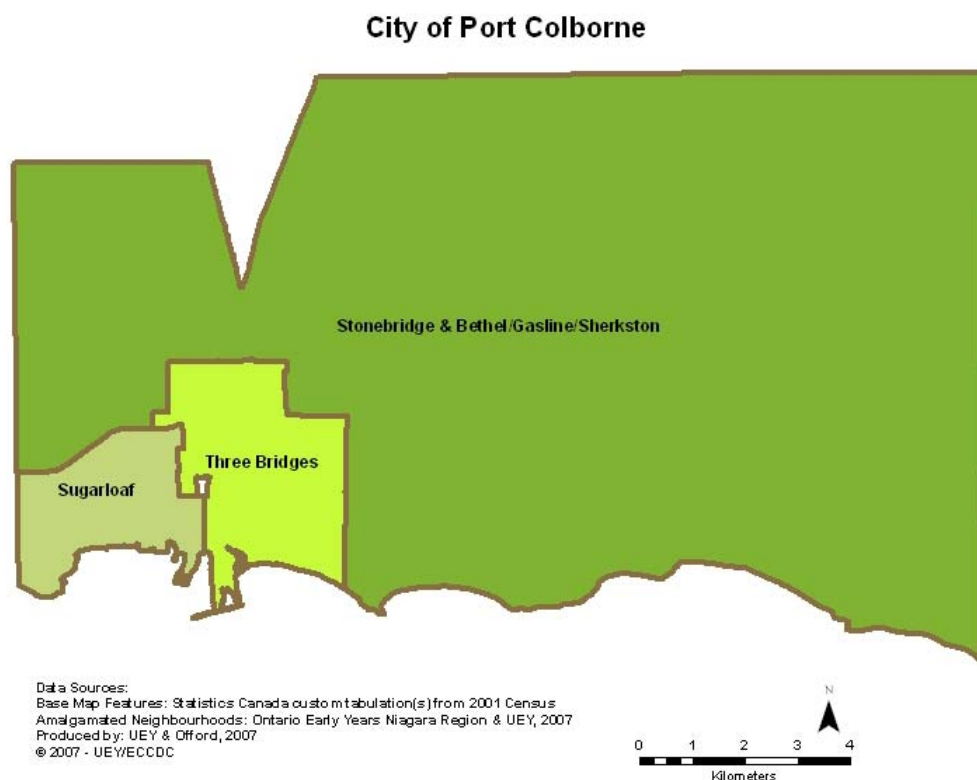
Overall, EDI vulnerability for Port Colborne (30.5%) was slightly higher than the regional vulnerability average of 30.1% and the national average (25.9%).

However, at the neighbourhood level in Port Colborne there was quite a bit of variability. For instance, in the Stonebridge & Bethel/Gasline/Sherkston (n=42) neighbourhood, overall vulnerability was 27.0%. Children in this neighbourhood had high rates of vulnerability in the Communication Skills & General Knowledge and Physical Health & Well-being domains.

The Sugarloaf neighbourhood (n= 34) had an overall vulnerability rate of 27.3%, but had very high and very low domain vulnerability rates. In fact, there was 0% vulnerability in the Language & Cognitive domain (the lowest of all 50 neighbourhoods), but the vulnerability in the Communication Skills & General Knowledge domain was very high (24.3%) in the Sugarloaf neighbourhood. Scoring below the 10th percentile in Communication Skills & General Knowledge domain means that a child has poor communication skills and articulation, limited command of English, has difficulty talking to others, problems understanding and being understood, and has poor general knowledge (McCain, Mustard & Shanker, 2007). Sugarloaf also experienced low vulnerability in the Physical Health & Well-being, Social Competence, and Emotional Maturity domains (3.0%, 6.1%, and 9.4% respectively). This means that, for some reason, children in the Sugarloaf neighbourhood are struggling in terms of Communication Skills & General Knowledge only and not in the other readiness to learn domains. Further analysis into this surprising finding is needed.

The Three Bridges neighbourhood had very high overall vulnerability (37.9% of the sample of 35) and also had above regional average vulnerability percentages in four out of the five domains. A particularly high level of vulnerability was found in the Social Competence and Emotional Maturity domains (both were 20.7% which was more than double the regional averages).

Map 73. Amalgamated EDI Neighbourhoods in Port Colborne (2007)



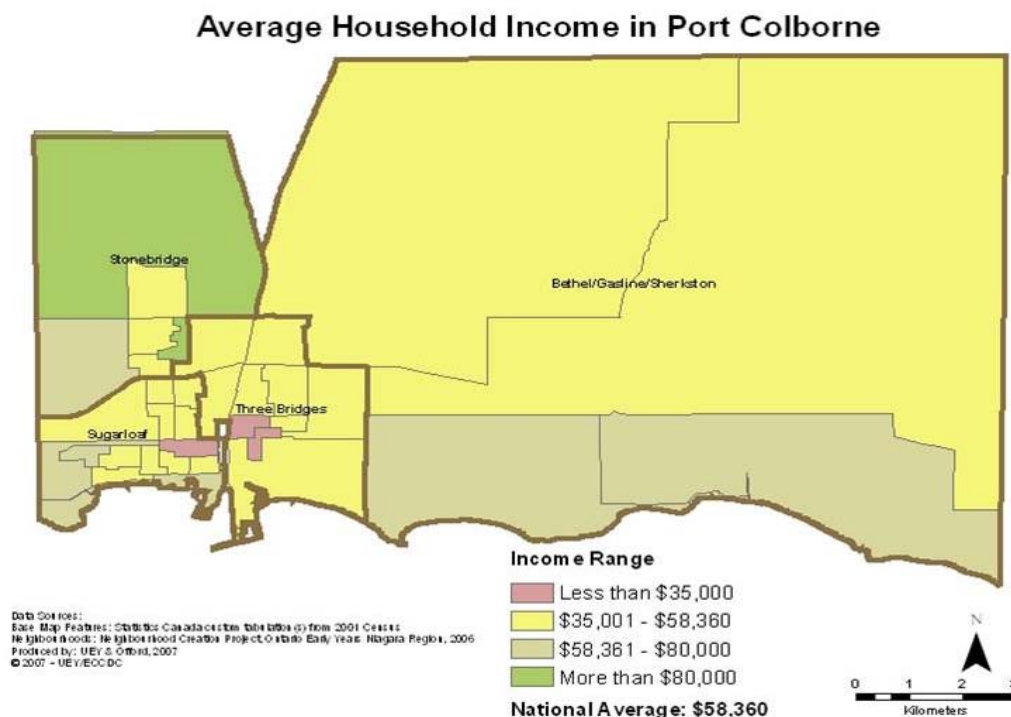
EDI Results in Port Colborne (continued)

All three neighbourhoods in Port Colborne had higher overall vulnerability percentages when compared to the national cohort. Both the Stonebridge/Bethel/Gasline/Sherkston and Sugarloaf EDI neighbourhoods had vulnerability rates above the national, yet below the regional, averages. The Three Bridges neighbourhood displayed EDI vulnerability rates above both the national and regional averages.

The sub-domain analysis reveals that Port Colborne overall showed weakness in all of the sub-domains of the Emotional Maturity and Social Competence domains. Furthermore, there were specific weaknesses in other sub-domains. The full list of sub-domains in which students seemed to be experiencing challenges on the EDI in 2006 included:

- Communicates easily and effectively (Communication Skills and General Knowledge);
- Participates in storytelling or imaginative play (Communication Skills & General Knowledge);
- Articulates clearly (Communication Skills and General Knowledge);
- Has proficiency in their native language (Communication Skills and General Knowledge);
- Physical readiness for the school day (Physical Health and Well-being);
- Gross and fine motor skills (Physical Health and Well-being);
- Interest in literacy/numeracy and memory (Language and Cognitive Development);
- Prosocial and helping behaviour (Emotional Maturity);
- Anxious and fearful behaviour (Emotional Maturity);
- Aggressive behaviour (Emotional Maturity);
- Hyperactivity and inattention (Emotional Maturity);
- Overall social competence (Social Competence);
- Responsibility and respect (Social Competence);
- Approach to learning (Social Competence); and
- Readiness to explore new things (Social Competence).

Map 74. Average Household Income in Port Colborne (2001 Census)



Given the apparent need in Port Colborne in the Emotional Maturity and Social Competence domains, and specific concerns within the community's neighbourhoods, further examination of the city's socioeconomic conditions might prove helpful.

Socioeconomic Results in Port Colborne

Map 74 compares average household income in Port Colborne in 2001 to the national average. EDI vulnerability rates were above national averages in Port Colborne and incomes were quite low in Port Colborne overall.

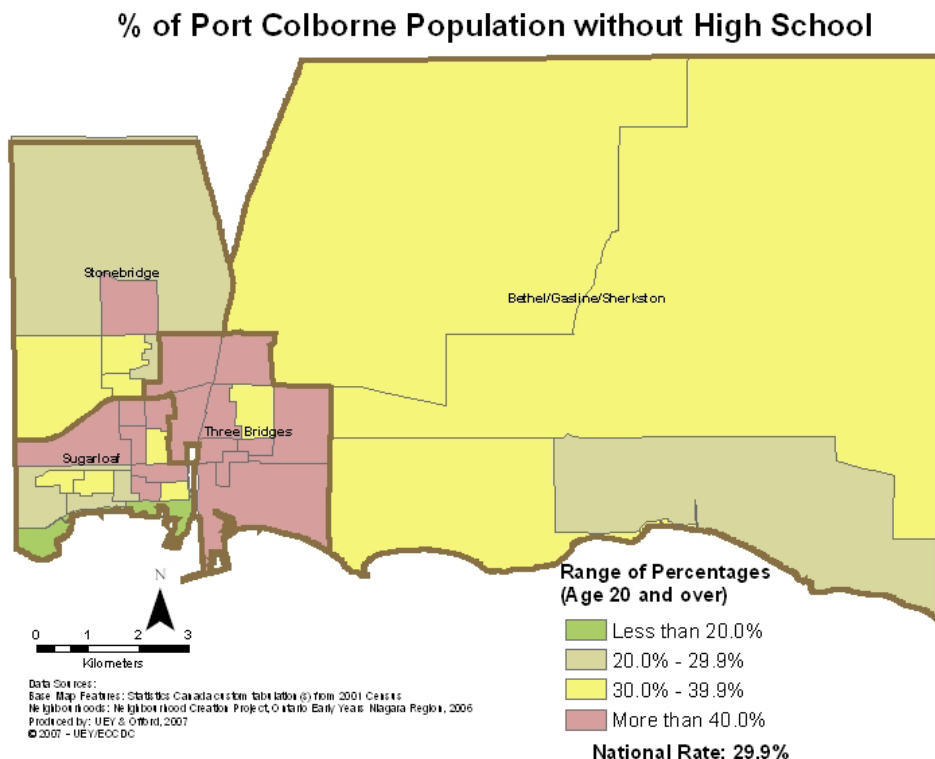
There were a few pockets of very low household income (less than \$35,000) in the Sugarloaf and Three Bridges neighbourhoods. The majority of Port Colborne is coloured in yellow, meaning that the majority of the population made between \$35,001 and \$58,361 in 2001, slightly below the national average. However there were pockets of high income (over \$80,000 – green on map) in the Stonebridge neighbourhood.

These results seem to be in marked variance with what would be expected in terms of EDI scores; with lowest income in pockets in Sugarloaf we would expect poorer EDI results and with higher income in Stonebridge we might anticipate stronger EDI results than were found in the 2006 EDI.

What other factors might be influencing child outcomes in Port Colborne?

Map 75 displays the percentage of Port Colborne residents aged 20 and older who had not received their high school diploma at time of the Census in 2001.

Map 75. Percentage of Port Colborne Residents Without a High School Diploma (2001 Census)



Socioeconomic Results in Port Colborne (continued)

The majority of the Three Bridges neighbourhood is coloured red, indicating that most of the neighbourhood showed more than 40% of the adult population living there did not have their high school diploma. Also, about half of the Sugarloaf neighbourhood and a pocket in Stonebridge showed more than 40% of residents without a high school education. Conversely, there were also areas within Sugarloaf and Stonebridge showing above national rates of high school completion. The majority of the more rural portion of Port Colborne, the Bethel/Gasline/Sherkston neighbourhood, had 30% to 39.9% of residents not obtaining a high school education (shown in yellow).

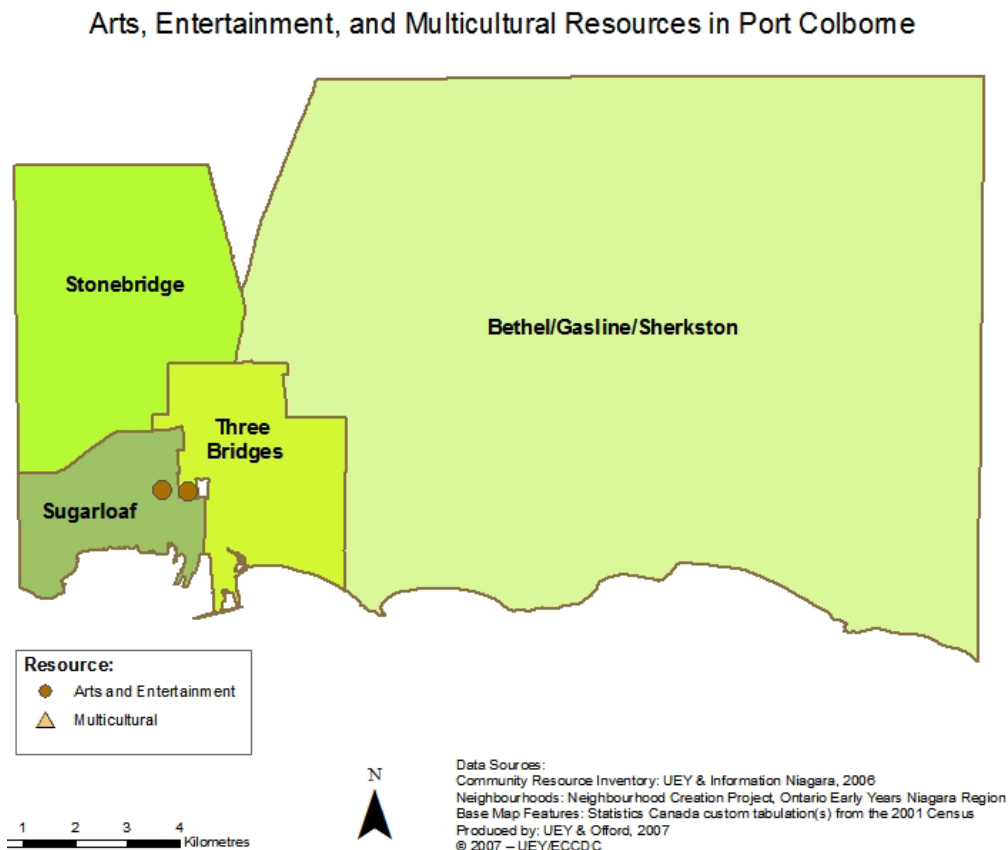
The Three Bridges neighbourhood did have the highest EDI vulnerability rates in Port Colborne and does show that adult education was also the lowest in the city.

Given that all three neighbourhoods in Port Colborne had higher than national average EDI vulnerability rates and several socioeconomic challenges, what types of resources are available in Port Colborne neighbourhoods?

Community Resource Results in Port Colborne

In examining community resources and their distribution across Port Colborne, the majority of resources were concentrated in the Sugarloaf neighbourhood, where some comparatively stronger scores on the EDI were found (i.e. Communication Skills and General Knowledge). However there was at least one resource per category in the

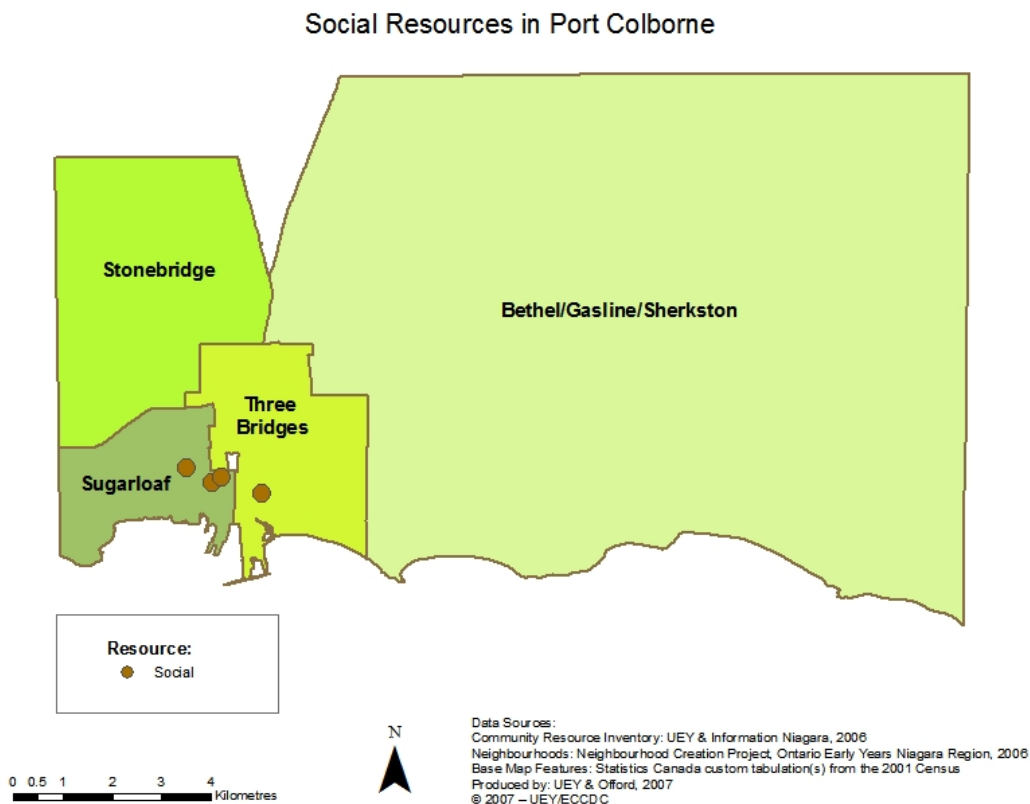
Map 76. Arts, Entertainment, and Multicultural Resources in Port Colborne (2007)



Three Bridges neighbourhood. It would seem that socioeconomics could play a role in the high EDI vulnerability in Sugarloaf and Three Bridges; considering the amount of resources for children aged 0-6 years of age and their parents/caregivers.

There was a distinct lack of resources in the Stonebridge and Bethel/Gasline/Sherkston neighbourhoods. The implementation of more resources in the more rural neighbourhoods in Port Colborne could have a positive impact on EDI scores. The least reported types of resources in the city were in the arts, entertainment and multicultural; and social categories. These are displayed in maps 76 and 77.

Map 77. Social Resources in Port Colborne (2007)



Niagara-on-the-Lake

"The Town of Niagara-on-the-Lake is located in the northeast corner of the Regional Municipality of Niagara bounded by the Niagara River, Lake Ontario, the City of St. Catharines, and the City of Niagara Falls and occupies 31,131 acres (or 12,599 hectares). Niagara-on-the-Lake was formed as a result of the introduction of regional government to the area on January 1, 1970. It comprises the whole of the former Town of Niagara and the former Township of Niagara including the district heritage communities of Virgil, St. David's, Queenston, Homer and McNab. ... Strategically located on the 43rd parallel, the Town of Niagara-on-the-Lake lies on the same latitude as Florence and Cannes and is the tourism heart of the Ontario wine region which stretches along the south shore of Lake Ontario from Stoney Creek to Niagara Falls."

Copyright © 2007 Town of Niagara-on-the-Lake

Niagara-on-the-Lake (continued)

All four of the neighbourhoods in Niagara-on-the-Lake were amalgamated in order to report on EDI data and create a long-term workable solution for future comparable reporting. Neighbourhoods were amalgamated based on required EDI sample sizes, geographic proximity, and similar socioeconomic conditions. This map will only be used for reporting EDI results. Maps with the original neighbourhoods will be used to report on socioeconomic conditions and community resources and their names will be included in all maps - out of respect and appreciation for the work and wisdom of the community champions who participated in the Neighbourhood Creation Project. These original and amalgamated neighbourhoods for the town are shown in Maps 78 and 79.

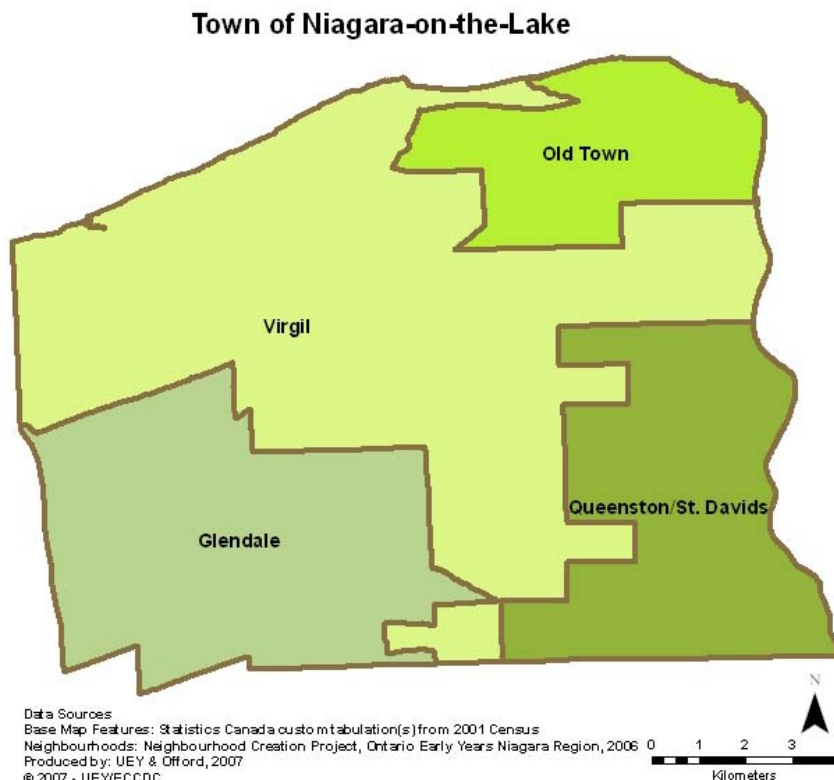
EDI Results in Niagara-on-the-Lake

A large majority of children in Niagara-on-the-Lake (79%) are on track for learning at school across the five domains.

Overall vulnerability in Niagara-on-the-Lake was 31.2% (n=78) which was higher than both the regional and national vulnerability averages.

Niagara-on-the-Lake also displayed higher than regional average vulnerability rates on three of the five domains: Social Competence, Emotional Maturity, and Language & Cognitive Development (14.3%, 13.0%, and 13.0% respectively).

Map 78. Niagara-on-the-Lake Neighbourhoods (2006)



At the sub-domain level, Niagara-on-the-Lake senior kindergarten students showed weakness in ten out of the twenty sub-domains, as follows:

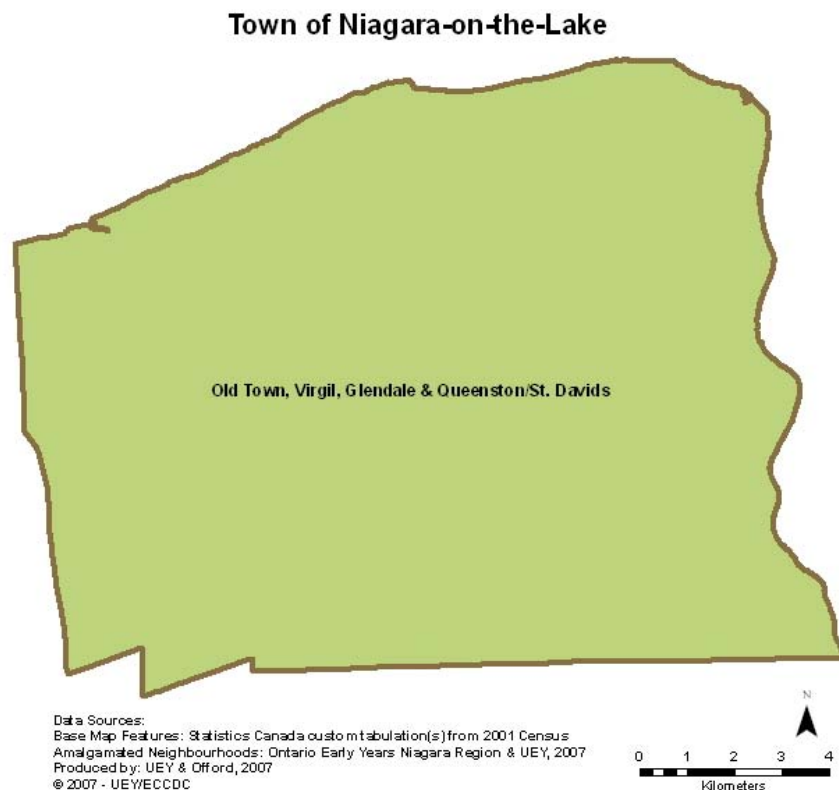
- Communicates easily and effectively (Communication Skills and General Knowledge);
- Articulates clearly (Communications Skills and General Knowledge);
- Has proficiency in their native language (Communication Skills and General Knowledge);
- Gross and fine motor skills (Physical Health and Well-being);
- Basic literacy (Language and Cognitive Development);
- Anxious and fearful behaviour (Emotional Maturity);
- Aggressive behaviour (Emotional Maturity);
- Overall social competence (Social Competence);
- Responsibility and respect (Social Competence); and
- Approach to learning (Social Competence).

These results seem surprising given the good socioeconomic conditions the town is generally considered to have.

Socioeconomic Results in Niagara-on-the-Lake

Overall, Niagara-on-the-Lake did display higher than national average household incomes. The majority of Niagara-on-the-Lake's households made more than \$80,000 in 2001. The majority of Niagara-on-the-Lake also had less than 10% of single parent families, which were much lower percentages compared to regional and national averages. While Niagara-on-the-Lake specific socioeconomic maps are not available, a quick referencing of section 2.2 (Regional Socioeconomic Factors) in this report shows that average income and family structure (lone parent status) results for the town are quite mixed. The Old Town neighbourhood did have a pocket where average household income fell below the national average, as did Virgil with regard to family structure.

Map 79. Amalgamated EDI Neighbourhood in Niagara-on-the-Lake (2007)



Socioeconomic Results in Niagara-on-the-Lake (continued)

For the most part, people living in Niagara-on-the-Lake also own their homes (all areas in Niagara-on-the-Lake had higher than 66.9% home ownership). However, there were also large areas in the community with missing data on home ownership rates and some areas with higher than national rates on the Residential Stability (moved within last year, 2000) measure in the Old Town and Virgil neighbourhoods.

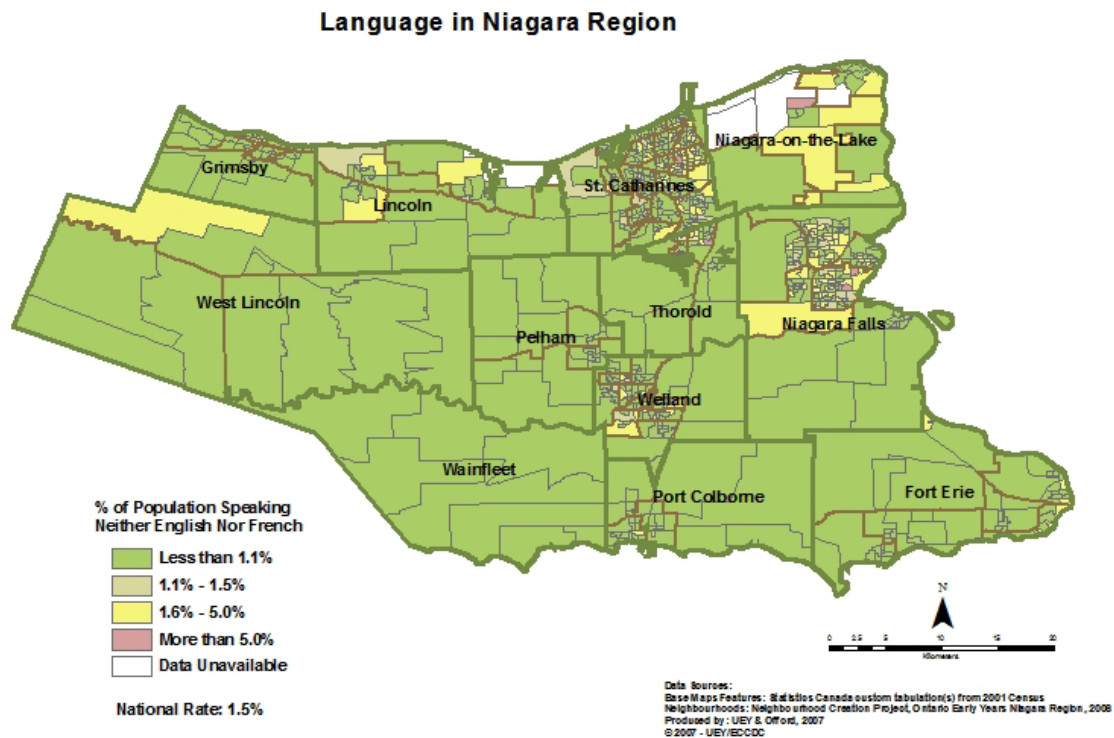
On the Housing Stress Index measure, there were pockets within all four Niagara-on-the-Lake neighbourhoods where residents spent disproportionately more of their income on housing than on average nationally (30% or more of their gross income on shelter costs).

There was also quite a large area of Niagara-on-the-Lake that showed a high percentage of the population that had not completed high school. A pocket in Virgil shows that more than 40% of the population had not obtained their high school diploma. About half of the town appears to have had 30%-40% of the population who had not completed high school in 2001 and this was found in all neighbourhoods except Old Town. However, it should also be noted that there was missing data in the measure in the Virgil and Old Town neighbourhoods.

Another surprising finding was that there were pockets within Niagara-on-the-Lake where there were higher than national percentages of people who could not speak English or French. There was a pocket in the Virgil neighbourhood where more than 5% of the population could not speak either of the two official Canadian languages. This can be seen in Map 80.

Given the mixed socioeconomic and EDI results in the town, an examination of resources in the community might be helpful.

Map 80. Percent of Population Speaking Neither English nor French in Niagara Region (2001 Census)



Community Resource Results in Niagara-on-the-Lake

There were relatively more arts, entertainment and multicultural; special interest (faith-based); and sports and recreation resources in the town than there were education; social and health; and wellness resources.

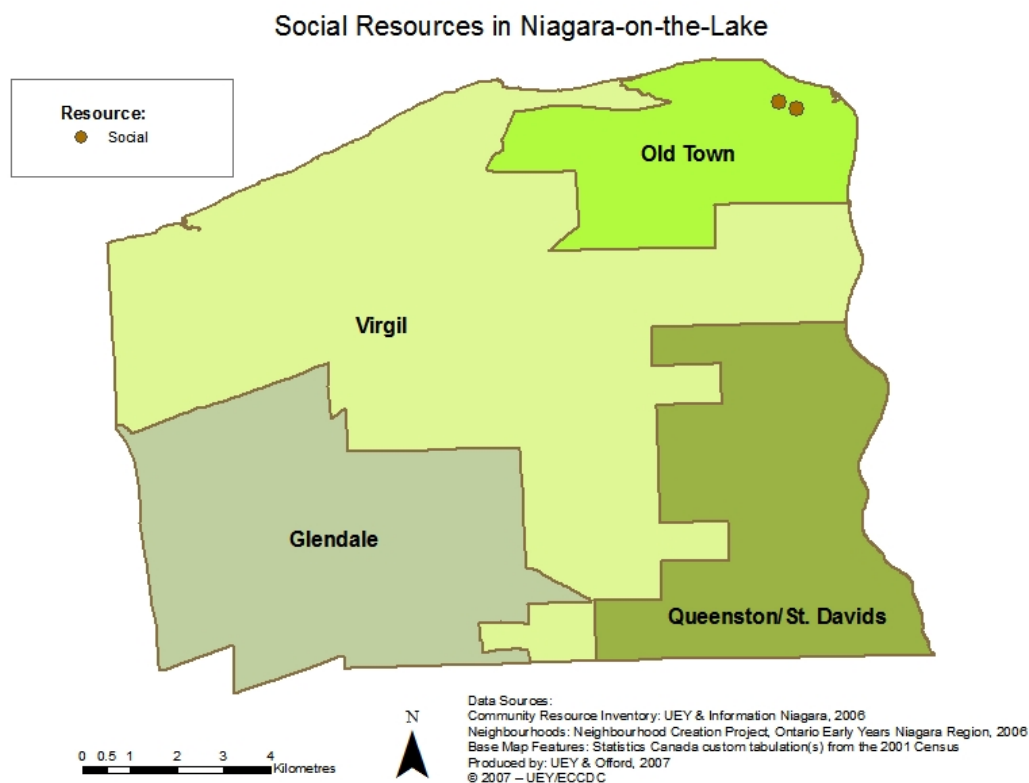
The majority of resources to support children under the age of six are concentrated in the Old Town neighbourhood, with minimal resources in the Virgil and Glendale neighbourhoods - except for the sports and recreation type, which appear to be well distributed. The Queenston/St. David's neighbourhood lacks many resources, especially arts, entertainment & multicultural; health & wellness; social; and sports & recreation type supports for children 0-6 years of age and their parents/caregivers.

The least found type of resource was in the social programs and services category (two), as shown in Map 81.

As previously described briefly in this report, there are two distinct groups of scores in Niagara-on-the-Lake. There are many children doing well and extremely well and there are also several students scoring in the lowest 10th percentile on one or more of the readiness to learn domains.

When only looking at vulnerability rates, it does paint the picture of students not doing very well, especially when socioeconomics are generally quite good in Niagara-on-the-Lake. However, it should be reiterated that while overall vulnerability was 31.2% this accounts for less than 30 actual children's scores. Unfortunately, since we cannot report on the four neighbourhoods of Niagara-on-the-Lake when describing EDI scores due to inadequate sample sizes, we cannot tell if the children with high vulnerability rates all come from the same area or are evenly distributed across the municipality. Further investigation into neighbourhood conditions is likely necessary, and it would also be useful to examine whether high EDI vulnerability rates will be found in 2008 EDI results as well (2008 results are currently being collected by the Ontario Early Years Niagara Region Data Analysis Coordinator).

Map 81. Social Resources in Niagara-on-the-Lake (2007)



Fort Erie

"The Town of Fort Erie possesses a uniquely rich community heritage and natural environment, and an unprecedented combination of pre-historic, historic and contemporary landscape features."

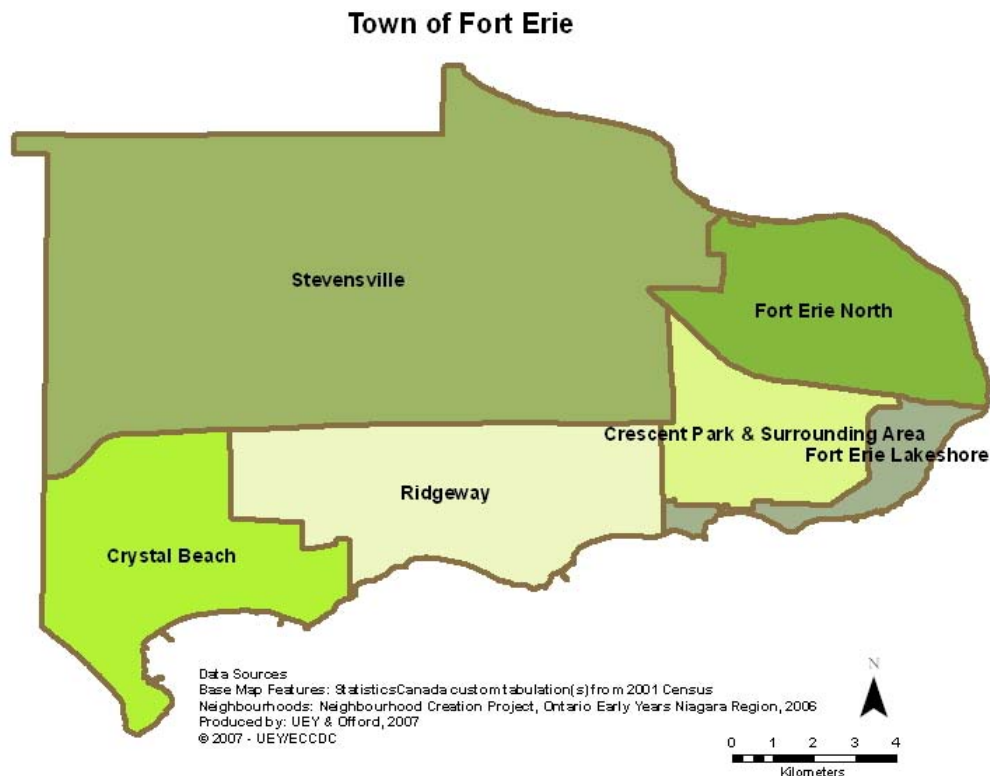
Copyright © 2007 Town of Fort Erie

Four of the six neighbourhoods in Fort Erie were amalgamated in order to report on EDI data and create a sustainable reporting solution. Neighbourhoods were amalgamated based on required EDI sample sizes, geographic proximity, and similar socioeconomic conditions. This map will only be used for reporting EDI results. Maps with the original neighbourhoods will be used to report on socioeconomic conditions and community resources and their names will be included in all maps - out of respect and appreciation for the work and wisdom of the community champions who participated in the Neighbourhood Creation Project. These original and amalgamated neighbourhoods are shown in Maps 82 and 83.

EDI Results in Fort Erie

Slightly less than three quarters (74%) of the children who participated in the EDI in 2006 in Fort Erie are on track for learning at school across the five domains (n=210).

Map 82. Fort Erie Neighbourhoods (2006)

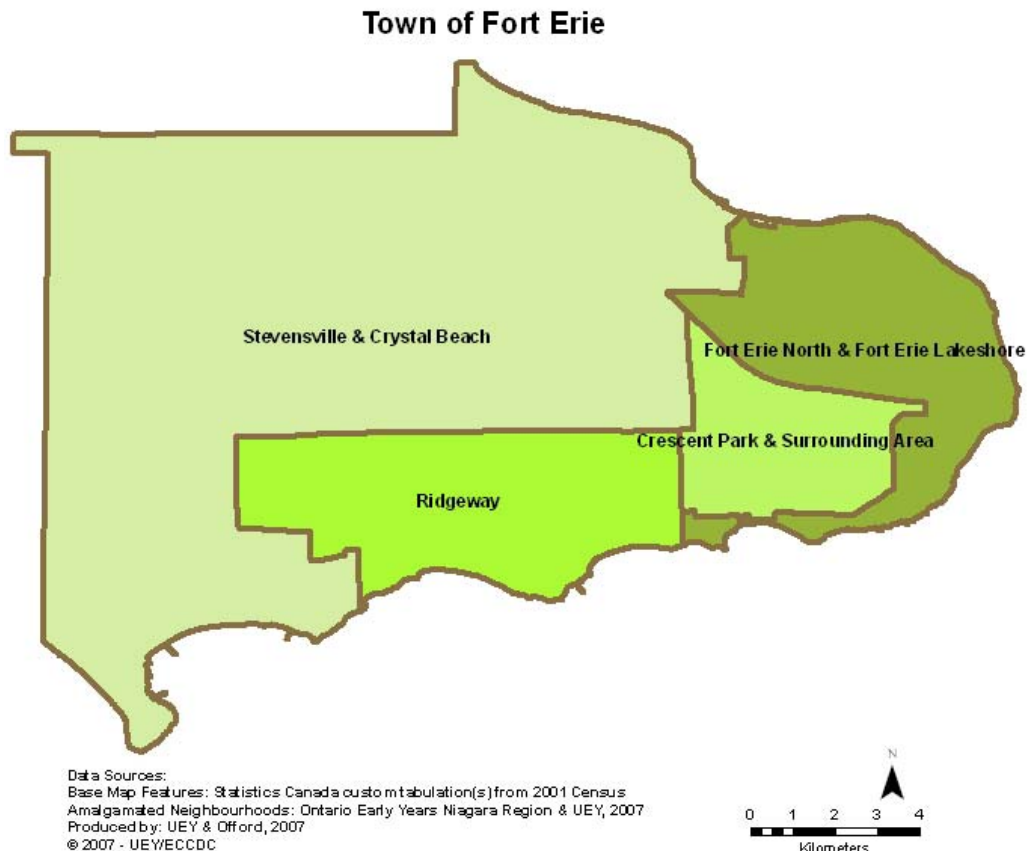


Overall vulnerability in Fort Erie was 33.9%, which was higher than both the regional and national averages. Of the four Fort Erie neighbourhoods, three had overall vulnerability rates higher than the regional average (30.1%). The only neighbourhood that had an overall vulnerability rate lower than the national rate of 25.9% was Ridgeway, with 24.6%.

At the neighbourhood level, the vulnerability scores across domains were quite varied and diverse. For example, the Stevensville & Crystal Beach neighbourhood had the highest overall vulnerability of all four neighbourhoods with 44.4%. However, when looking at domain vulnerability, this neighbourhood displayed very high vulnerability in the Physical Health & Well-being and Communication Skills & General Knowledge domains (both 25.0%). For the other three domains, vulnerability rates were fairly low (5.6% vulnerability for all three domains).

The Fort Erie North & Fort Erie Lakeshore neighbourhood had an overall vulnerability rate of 38.7%; showing above regional vulnerability averages in four out of five domains. The highest vulnerability rate was found in the Physical Health and Well-being domain (27.4%); almost double the regional average. Communication Skills and General Knowledge was the only domain in this neighbourhood that did not have vulnerability percentages above regional average. The Ridgeway neighbourhood had lower than regional average domain vulnerability scores on all but one domain (Emotional Maturity was just slightly above average at 10.2%). Similarly, the Crescent Park & Area neighbourhood had low vulnerability in four out of the five domains. The only domain

Map 83. Amalgamated EDI Neighbourhoods in Fort Erie (2007)



EDI Results in Fort Erie (continued)

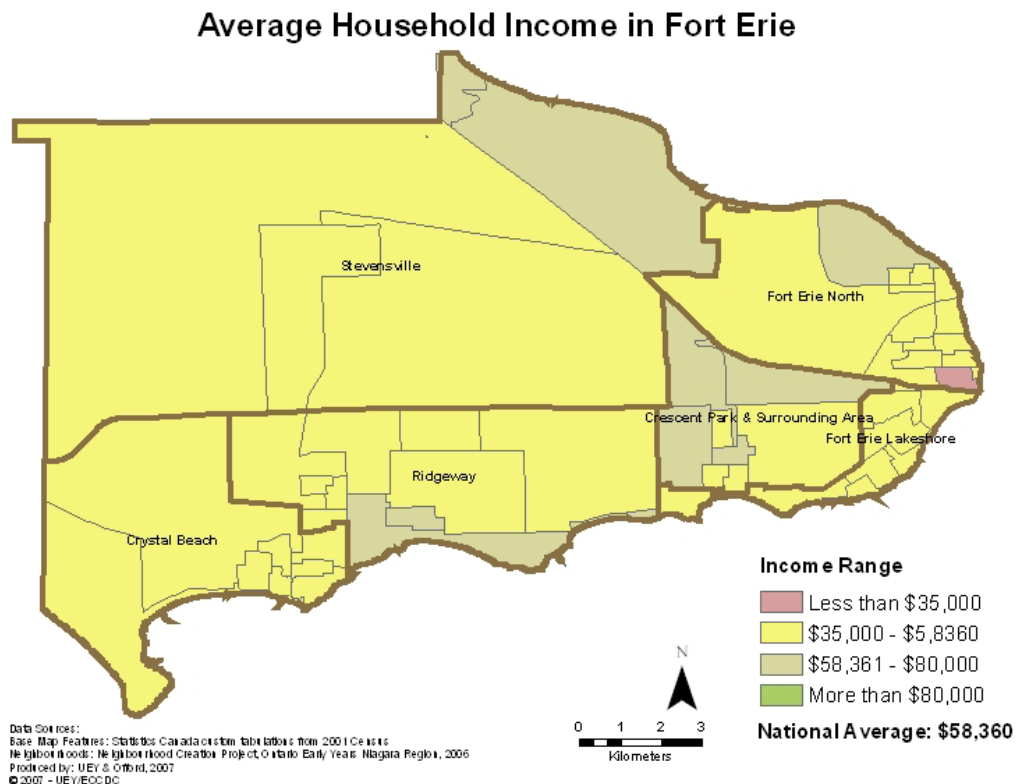
where children scored above the regional average was the Communication Skills & General Knowledge domain.

At the sub-domain level Fort Erie showed weakness in 12 out of the 20 sub-domains:

- Communicates easily and effectively (Communication Skills and General Knowledge);
- Participates in storytelling or imaginative play (Communication Skills and General Knowledge);
- Articulates clearly (Communication Skills and General Knowledge);
- Has proficiency in their native language (Communication Skills and General Knowledge);
- Physical independence (Physical Health and Well-being);
- Gross and fine motor skills (Physical Health and Well-being);
- Interest in literacy/numeracy and memory (Language and Cognitive Development);
- Prosocial and helping behaviour (Emotional Maturity);
- Anxious and fearful behaviour (Emotional Maturity);
- Aggressive behaviour (Emotional Maturity);
- Hyperactivity and inattention (Emotional Maturity); and
- Responsibility and respect (Social Competence).

Looking at social and economic maps may provide a little more context for the 2006 EDI results in Fort Erie.

Map 84. Average Household Income in Fort Erie (2001 Census)



Socioeconomic Results in Fort Erie

Map 84 displays Average Household Income in Fort Erie in 2001. The majority of Fort Erie had household incomes below the national average of \$58,360.

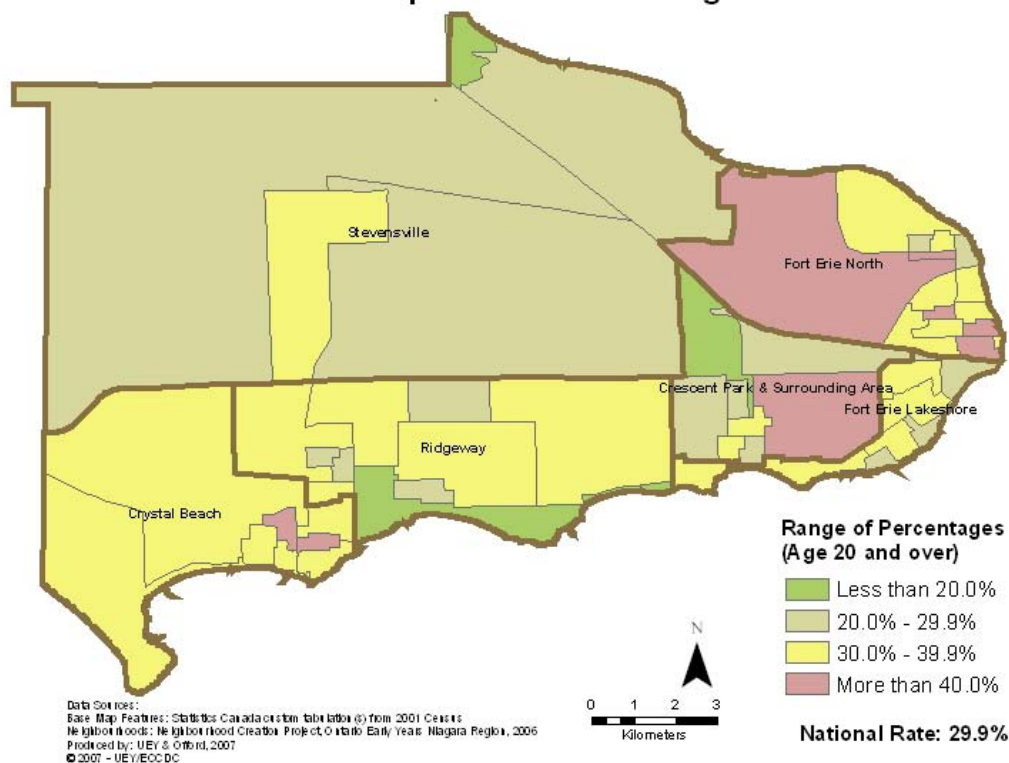
As shown in red, there was a small pocket of very low household income (less than \$35,000) in Fort Erie North. The rest of town primarily had a household income somewhere between \$35,001 and \$58,360. However, there were a few areas that had household incomes of between \$58,361 and \$80,000.

There were also several pockets in Fort Erie where there were higher than national average percentages of the population that had not obtained a high school diploma. Shown in red on Map 85, the majority of Fort Erie North, a large chunk of Crescent Park & Surrounding Area and a small pocket in Crystal Beach showed that more than 40% of adults aged 20 and older had not yet graduated high school. There was also a pocket throughout the town's neighbourhoods, and the majority of Stevensville, where 20% to 29.9% of the population had not obtained a high school diploma. However for the majority of the more urban areas of Fort Erie, high school graduation rates were quite low.

Fort Erie is a major point of entry for immigrants and refugees coming to Canada, so it is not surprising that there were some high levels of immigration reported for the town in 2001. Based on the percentage of the population who immigrated between 1996 and 2001, there were pockets in the Fort Erie North, Ridgeway, and Fort Erie

Map 85. Percent of the Fort Erie Population Without a High School Education (2001 Census)

% of Fort Erie Population without High School



Socioeconomic Results in Fort Erie (continued)

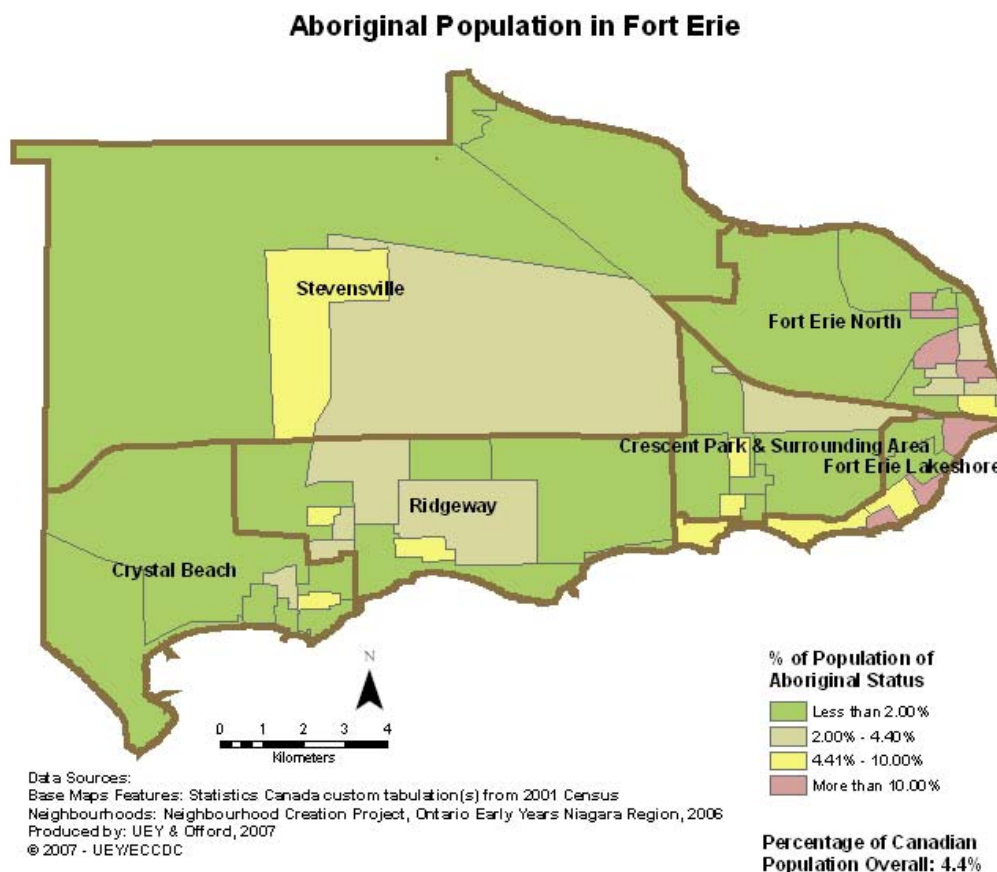
Lakeshore neighbourhoods where immigration rates were higher than the national average (more than 3.4% immigration). The National Council of Welfare (2004) reported that immigrants who are visible minorities are especially vulnerable to high rates of poverty, as well as deep and persistent poverty.

There were pockets of high residential instability throughout many neighbourhoods of Fort Erie. Fort Erie North, Crystal Beach, and Ridgeway all had pockets where 14.4% to 25% of the population moved in the previous years (national average was 14.3%).

There were also higher than national average rates of lone parent families found in all the Fort Erie neighbourhoods in 2001. Crystal Beach, Ridgeway, and Crescent Park and Area also showed areas where the unemployment rate was higher than the national average.

Map 86 shows the percentages of the population of Aboriginal descent in the town. There are pockets with higher rates than found on average nationally across all four Fort Erie neighbourhoods.

Map 86. Percent of the Fort Erie Population With Aboriginal Status (2001 Census)



Finally, Fort Erie appeared to also have a disproportionate percentage of male senior kindergarten students in the 2006 EDI sample; all neighbourhoods showed more than 50% male students. This is shown in map 87. Gender (male) has been found to be related with a greater risk of scoring poorly on the EDI (Janus, 2006).

Given these complex socioeconomic conditions, an examination of the resources available for children 0-6 years of age and their parents/caregivers in the Fort Erie community might prove helpful.

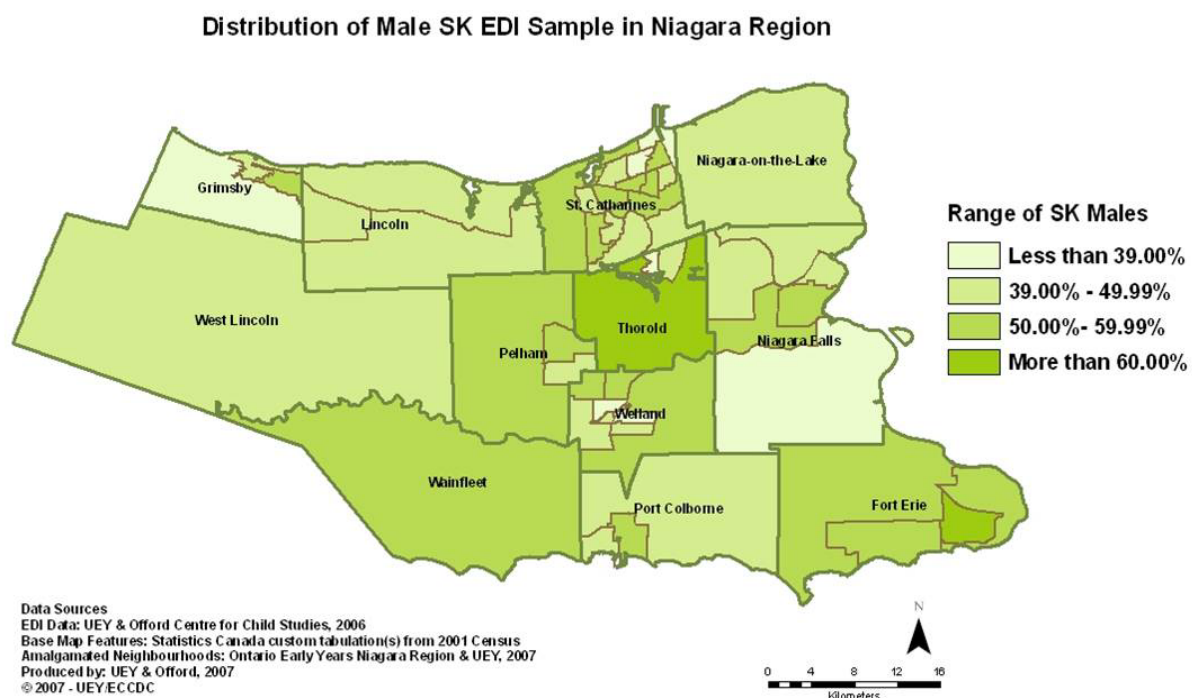
Community Resource Results in Fort Erie

There was a noticeable lack of resources in Crystal Beach. In fact, there were only three resources (one church and two sports and recreation types) in this neighbourhood, which is particularly concerning given its high rate of vulnerability on the EDI. Ridgeway also showed no social resources and only one each of the health and wellness and sports and recreation types.

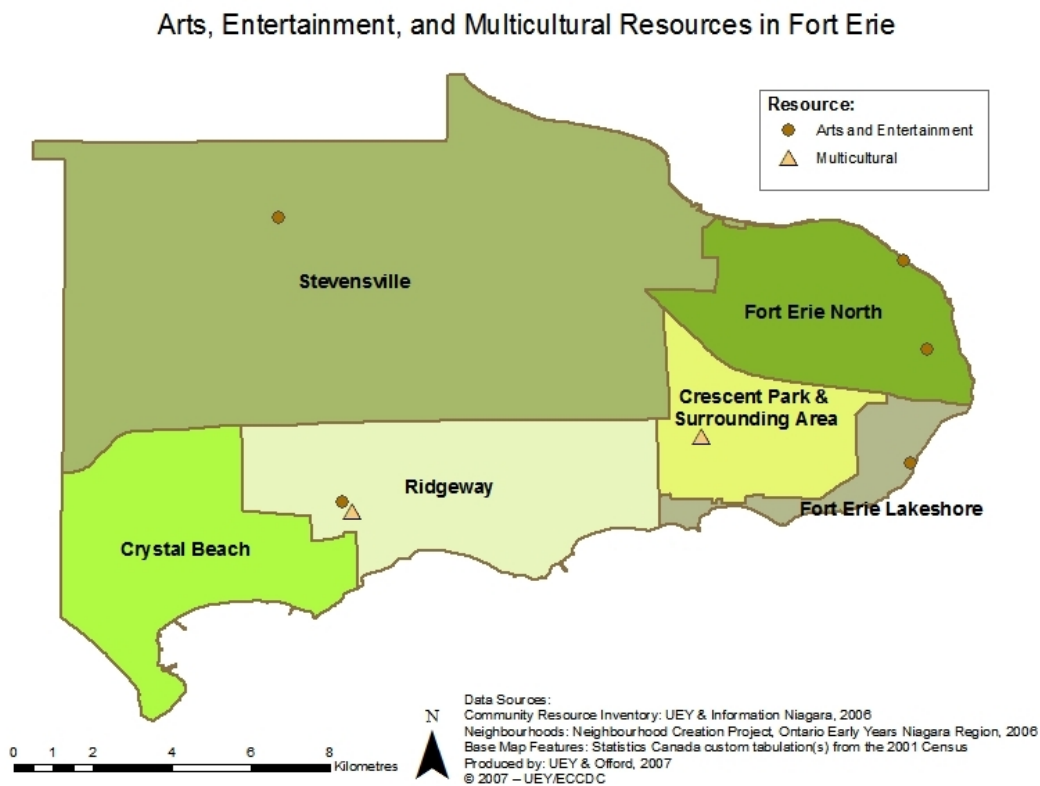
Stevensville also lacked any social resources. It is also interesting to note that the Crystal Beach and Stevensville neighbourhoods had the highest overall vulnerability in Fort Erie.

Fort Erie Lakeshore did not show any education or health and wellness resources. The vast majority of resources are located in Fort Erie North and the most prevalent type overall in Fort Erie were special interest (faith-based) and education. The fewest number of resources, across the whole of the town, were found in the arts, entertainment and multicultural and social categories, as displayed in Maps 88 and 89 (page 101).

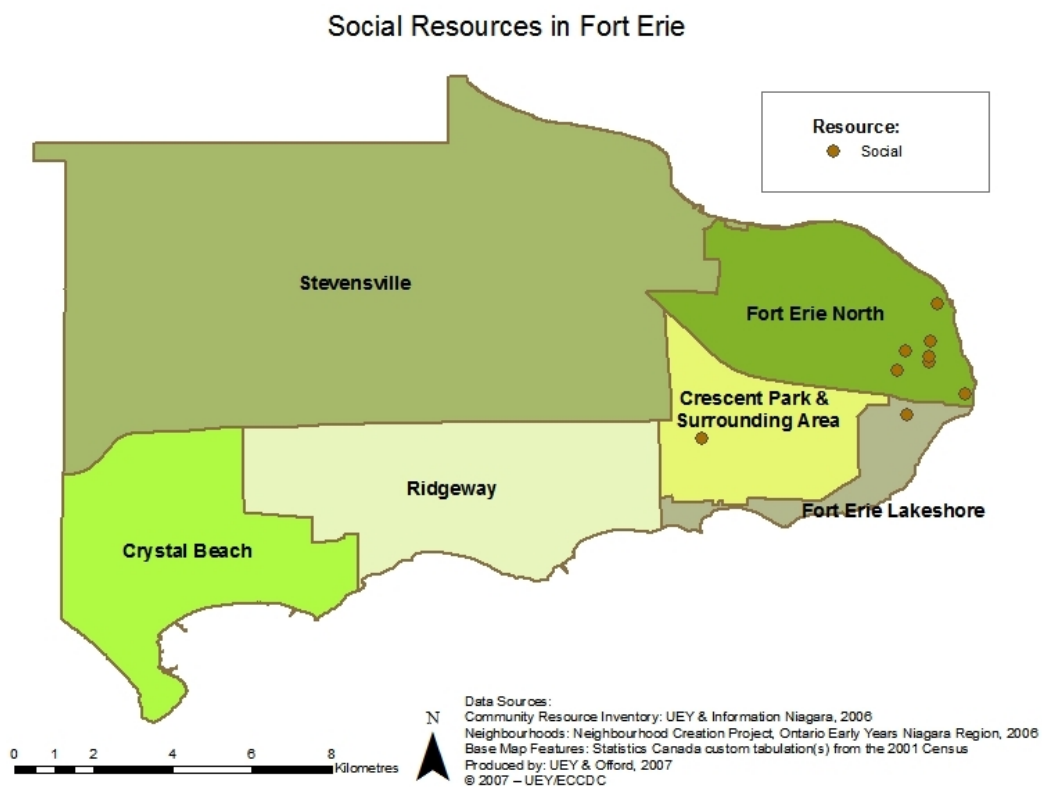
Map 87. Distribution of Male Senior Kindergarten Sample in Niagara Region (EDI 2006)



Map 88. Arts, Entertainment and Multicultural Resources in Fort Erie (2007)



Map 89. Social Resources in Fort Erie (2007)



Lincoln

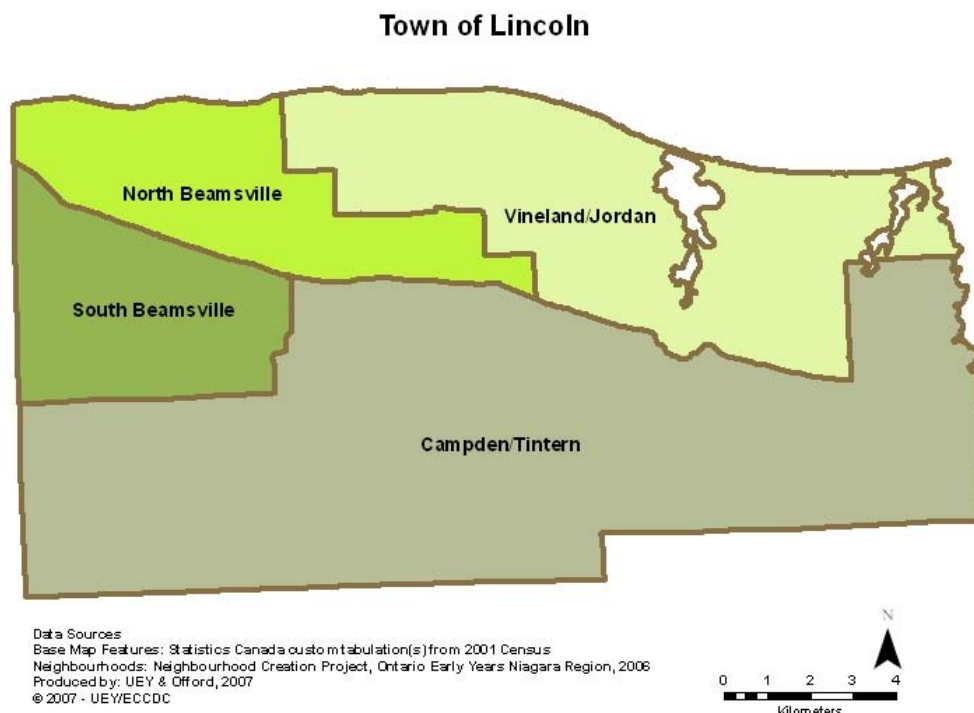
"Surrounded by vineyards and orchards, Lincoln is an easy drive from Toronto or Buffalo. Located on the Queen Elizabeth Way in the Niagara Region, and adjacent to the south shore of Lake Ontario, Lincoln is within the major populated areas of central Canada and near the eastern United States. Our small towns and villages, filled with wineries, antique shops, historical sites and natural attractions, make Lincoln a unique place to live, work, and call home."

Copyright © 2007 Town of Lincoln

Two of the four neighbourhoods in Fort Erie were amalgamated in order to report on EDI data and create a sustainable reporting solution, thus creating three EDI neighbourhoods. Neighbourhoods were amalgamated based on required EDI sample sizes, geographic proximity, and similar socioeconomic conditions. This map will only be used for reporting EDI results. Maps with the original neighbourhoods will be used to report on socioeconomic conditions and community resources and their names will be included in all maps - out of respect and appreciation for the work and wisdom of the community champions who participated in the Neighbourhood Creation Project.

Maps 90 and 91 (page 103) show the original and amalgamated neighbourhoods of Lincoln.

Map 90. Lincoln Neighbourhoods (2006)



EDI Results in Lincoln

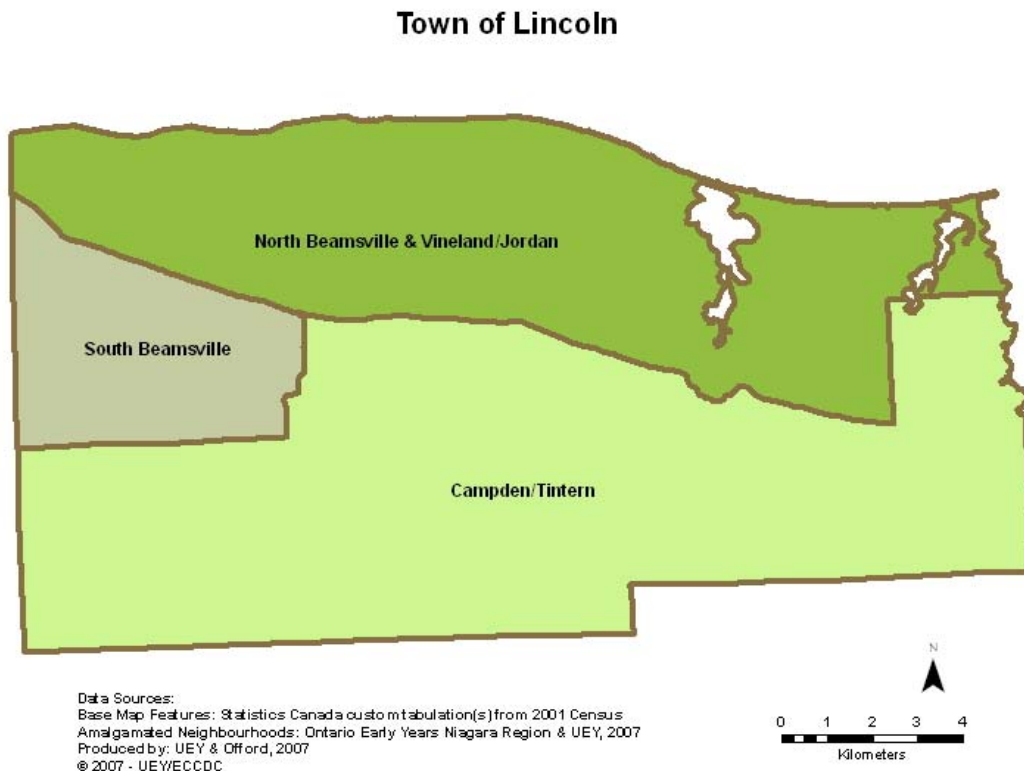
A large majority of children in Lincoln (76%) are on track for learning at school across the five domains (n=260).

Overall, vulnerability (scored in the lowest 10th percentile on one or more readiness to learn domains) in Lincoln was 30.7%, which was higher than both the regional and national vulnerability averages.

Two of the three neighbourhoods had overall vulnerability averages above those found regionally and nationally. One neighbourhood (South Beamsville) had overall vulnerability rates lower than regional and national averages (25.7%). Converse to general findings in the Niagara Region on this domain, all three neighbourhoods of Lincoln did well and had below regional average vulnerability rates in Communication Skills and General Knowledge.

Across the three neighbourhoods, domain vulnerability scores varied significantly. The North Beamsville & Vineland/Jordan neighbourhood had higher than regional average vulnerability rates in Physical Health and Well-being (17.4%), Social Competence (12.2%), and Language and Cognitive Development (18.4%). In the South Beamsville neighbourhood, above regional vulnerability was seen in the Social Competence (17.1%) and Emotional Maturity domains (11.4%). In the Campden/Tintern neighbourhood, above regional vulnerability rates were observed in the Physical Health and Well-being (18.6%) domain as well as on the Emotional Maturity (11.5%) domain.

Map 91. Amalgamated EDI Neighbourhoods in Lincoln (2007)



At the sub-domain level, senior kindergarten students showed weakness in nine out of twenty sub-domains:

- Communicates easily and effectively (Communication Skills & General Knowledge);
- Physical readiness for the school day (Physical Health & Wellbeing);
- Gross & fine motor skills (Physical Health & Well-being);
- Basic literacy (Language & Cognitive Development);
- Advanced literacy (Language & Cognitive Development);
- Basic numeracy (Language & Cognitive Development);
- Prosocial & helping behaviour (Emotional Maturity);
- Aggressive behaviour (Emotional Maturity); and
- Hyperactivity and inattention (Emotional Maturity).

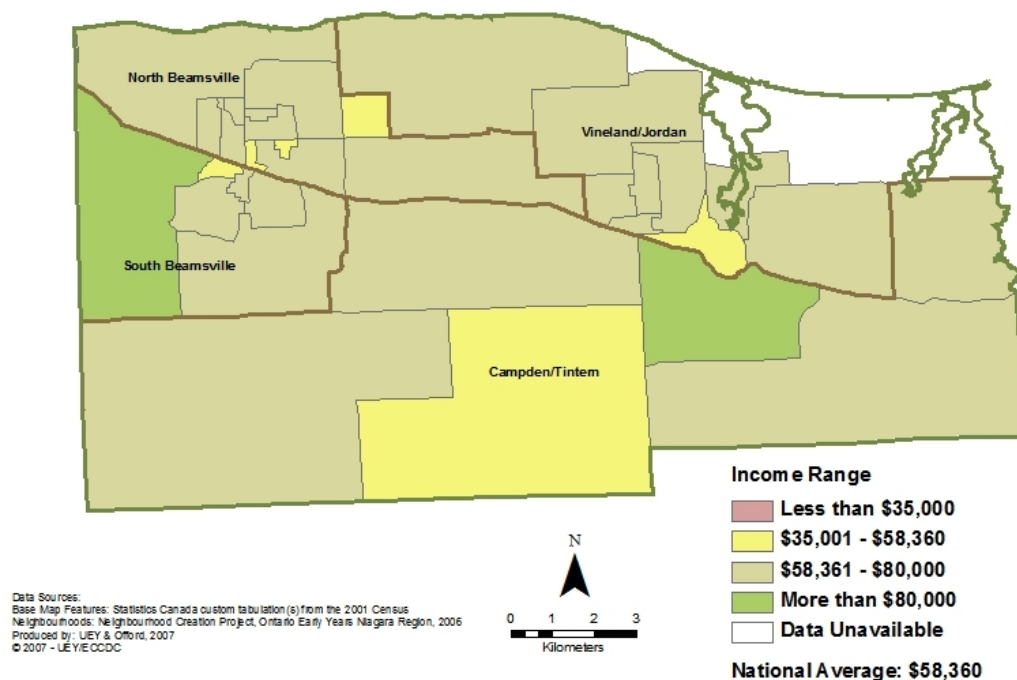
The high vulnerability rates in North Beamsville & Vineland/Jordan and Campden/Tintern neighbourhoods are somewhat concerning given the fairly good socioeconomic conditions. A closer observation of socioeconomic conditions may provide additional information.

Socioeconomic Results in Lincoln

Generally, average household income was above the national average of \$58,360 in Lincoln in 2001. As shown in Map 92, there were some pockets in all neighbourhoods of Lincoln where income was \$35,001 to \$58,360.

Map 92. Average Household Income in Lincoln (2001 Census)

Average Household Income in Lincoln



Socioeconomic Results in Lincoln (continued)

However, there was an especially large area in the Campden/Tintern neighbourhood.

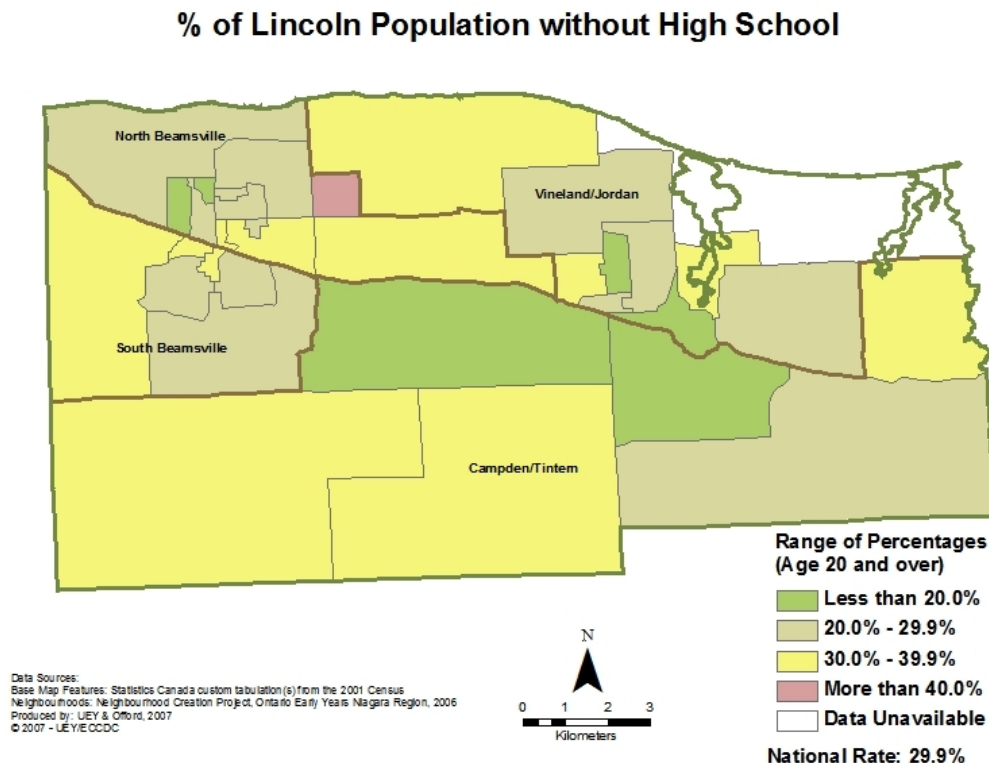
At the same time, Lincoln had fairly high percentages of its population not completing high school in 2001 (as shown on Map 93).

Approximately 50% of Lincoln showed that more than 30% of its adult population did not obtain a high school diploma. About half of the Campden/Tintern neighbourhood had between 30.0-39.9% of the population without high school and yet the other half of the area had high completion rates (more than 80% completion – shown in green on map). North Beamsville had fairly high levels of high school completion (majority was above national average – beige and green on map).

In terms of family structure, the majority of Lincoln had lower percentages of single parent families than the national rate of 24.7% in 2001. However, there were some large pockets in the North Beamsville and Vineland/Jordan neighbourhoods where the percentage of lone parent families was between 24.8% and 45%.

The majority of Lincoln also showed that more than 65.8% of residents owned their home. This is higher than the national average. There were a few pockets in North and South Beamsville where there was between 40.1% and 65.8% home ownership, which is below the national average (see Regional maps in Section 2.2 to view these findings for Lincoln).

Map 93. Percentage of Lincoln Population Without High School Education (2001 Census)

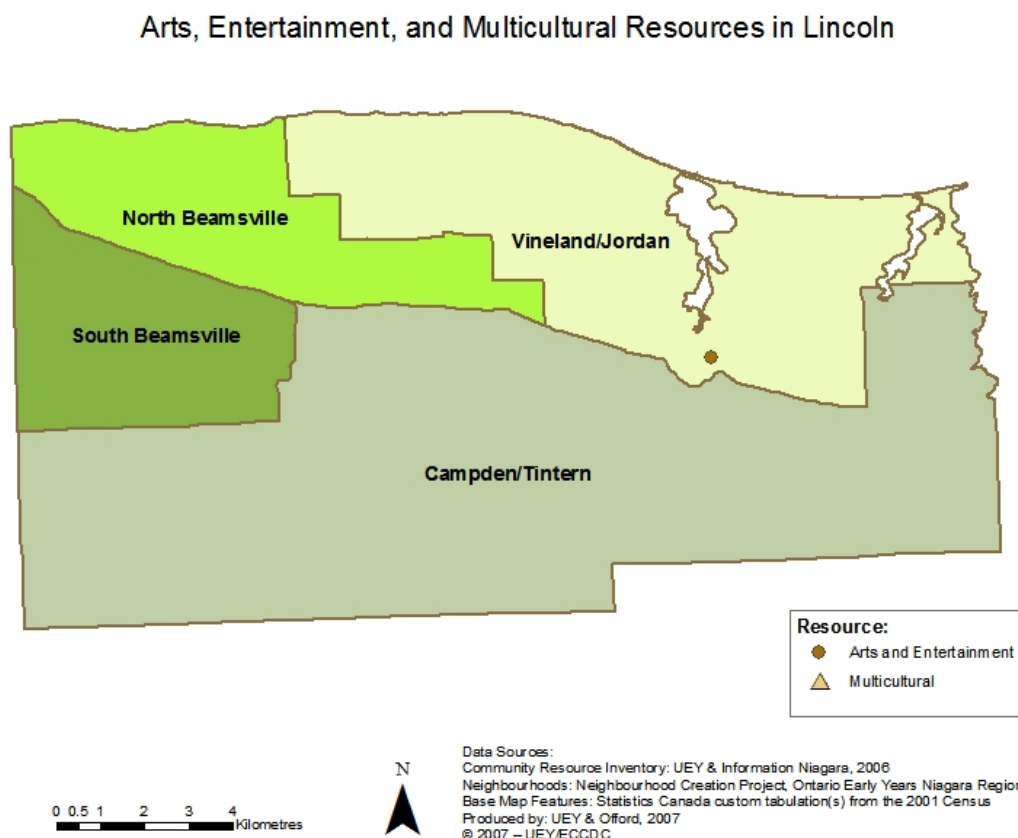


Overall, the majority of Lincoln also had below national averages of mobility (percentage of residents moving in 2000), low income cut-off percentages, and immigration and aboriginal populations.

Community Resources in Lincoln

There were several resources in each category type found in Lincoln, except for arts, entertainment and multicultural where there was only one (as displayed on Map 94). The most prevalent resources were in the special interest (churches, temples, mosques, etc) category. The majority of resources in Lincoln are concentrated in the North and South Beamsville neighbourhoods. The Vineland/Jordan and Campden/Tintern neighbourhoods seemingly lacked many resources, especially the educational, health and wellness, and social types. More specifically, Campden/Tintern also lacked arts, entertainment & multicultural resources, as well as sports & recreational type resources.

Map 94. Arts, Entertainment, and Multicultural Resources in Lincoln (2007)



4. Conclusion and Next Steps

Communities need to know what is working well and what is not working well for children 0-6 years of age and the parents/caregivers living, growing, working, and playing in their neighbourhoods. When using EDI data, socioeconomic factors present in neighbourhoods as well as community resources should also be considered. This Mapping Study and related reports can also be found online at: www.uey.eccdc.org/reports.php.

It should also be noted that the 2006 EDI sample did not include the senior kindergarten population in Francophone schools in the region, nor did it capture those children who were home-schooled, or those who were being educated in private schools. Furthermore, teachers had to receive signed permission from their students' parents in order to complete an EDI on their child. At the same time, with a geographically representational sample size of 3,016, it is sufficiently robust to report on with confidence.

The results outlined in this report and study are, therefore, best used in conjunction with additional local early years research and program/service data, such as the preliminary results from the Parent Interviews and Direct Assessment Survey (UEY, 2008), Kindergarten Parent Survey (KPS) data currently being collected by the Ontario Early Years Niagara Data Analysis Coordinator, and information from other EDI years. Additional relevant local knowledge, which is gathered by the Regional Municipality of Niagara's Community Services, Children's Services (child care) and Public Health (births and mothers) departments, Niagara Children and Youth Services (mental health), Speech Services Niagara (speech and language), and school boards (EQAO scores) can also be used for making decisions and plans. Further information on local research into early learning and development is outlined in the Niagara Region Early Years Research Inventory (2008) which is available at: www.uey.eccdc.org/PDF.php/NR_Research_Inventory_2007_08.pdf.

Also look forward to a comprehensive Community Report scheduled to be released by the Early Years Niagara Research Advisory Group in late 2008 entitled, "Children's Rights Enacted: A 2008 Report on how the Niagara Region is doing in supporting children 0-6 and their families." This report will detail statistics and neighbourhood profiles for the entire Niagara Region.

The Niagara Region appears to have generally good overall results and community conditions. However, a deeper examination of the data reveals that there are clearly both geographic and early learning and development areas where conditions and children's outcomes could, and perhaps should, be improved. There are also, on the other hand, neighbourhoods with surprising resilience or unanticipated challenges. These findings can act as signposts for further investigation or provide examples of best practices and effective strategies.

There are also several other factors which were not presented in this report which may impact early child development. Research has found family violence, maternal substance abuse, and depression has a strong and negative impact on children regardless of the family's socioeconomic status (McCain, Mustard, Shanker, 2007). Parenting styles have also been found to produce impact outcomes. Children living in punitive home environments were more likely to be aggressive at two to three years of age and at eight to nine years (Mustard, McCain & Shanker, 2007).

Preliminary results from the 2007 Parent Interviews and Direct Assessments of Children Survey (PIDACS) do show that overall average rates of maternal depression and poor family functioning (9% and 6% respectively) in the region are lower than found in the national PIDACS sample (11% and 10%). In the case of poor family

functioning, results from the 637 respondents were statistically significantly lower than the national average. These parents also had better overall scores on measures associated with positive parenting (PIDACS Briefs are available online at: www.uey.eccdc.org/reports.php). However, more information is needed in these areas and particularly also for children with special needs of all types, including violence at home, aggression, attention, developmental, and health challenges.

While the highest percentages of vulnerable children do come from low income families, it is important to remember that the highest numbers of vulnerable children are from the middle and upper socioeconomic categories. This key finding is central to understanding that we need universal rather than targeted approaches if we would like to improve school readiness and set optimal, life-long, positive trajectories for the largest group of children. In fact, 70% of five year olds lacking readiness for school live in middle and upper class families and these children would have been ineligible for targeted approaches (Doherty, 2007). At the same time, we need to also ensure maximum access to the resources for those children who experience the most barriers.

The good news is that improving community socioeconomic conditions, and providing neighbourhood resources and quality programs and services for young children and their parents and caregivers have the potential to benefit everyone! This provides the case for investing in the early years. James Heckman (2002) calculates the return on investment in early childhood programs at 8:1, compared to 3:1 return for primary and secondary education and 1:1 for adult training. Furthermore, benefits are most pronounced for disadvantaged children.

Look for updates on the Uey Niagara Region Action Plan, which will assist the community in using the knowledge gained to make evidence-based decisions and plans. Additionally, the project is currently doing additional analysis on the 2006 EDI and 2007 PIDACS raw data. Results will be released in the fall of 2008 and all reports will be available at www.uey.eccdc.org/reports/php.

The City of Toronto has used the EDI to identify vulnerable communities and, based on the findings, has adopted child outcome “benchmarks” that represent what it wants and expects to achieve for its children (McCain, Mustard, Shanker, 2007). We enthusiastically invite local planning councils, government bodies, and municipal service managers to do the same; as a next step in enacting the Niagara Children’s Rights Charter. We also encourage the early learning and care community in Niagara to continue its efforts in collecting and using local knowledge in their planning, reporting, and proposal writing activities. Uey thanks all of them for their support of its activities and the work they’ve undertaken on behalf of young children and their families to date.

The children of Niagara are depending on us to make the best evidence-based decisions possible, as these will affect their future academic and employment success and general well-being for some time to come!

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