# COMMUNITY KNOWLEDGE:
## Readiness to Learn in Niagara

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

~ Fraser Mustard, Founder & Chair Emeritus, Council for Early Child Development


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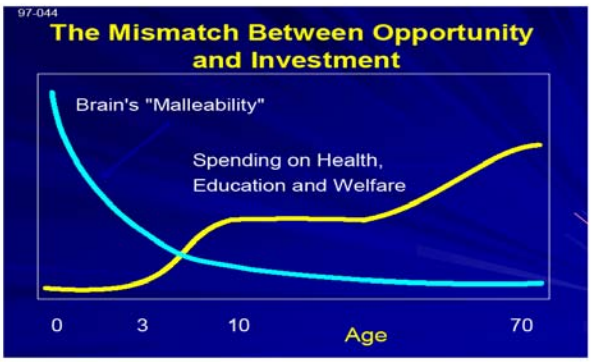
Petite enfance

Human Resources and Social Development Canada
Ressources humaines et Développement social Canada


The Understanding the Early Years initiative is funded by Human Resources and Social Development Canada. For further information, visit www.hrsdc.gc.ca

## The case for, and levels of, investment

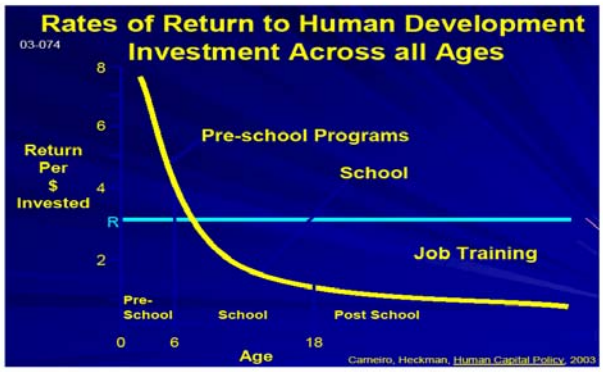



This chart (The Mismatch Between Opportunity and Investment) shows how it's easier to change our brains (and, therefore, the behaviours, attitude and abilities it controls) when we are younger but spending doesn't reflect this (Heckman, 2002)!

Population health trajectories are set early (prenatal to 6 yrs) and are harder, and more expensive, to change the longer we wait. Furthermore, these early indicators are related to socioeconomic and neighbourhood conditions and have been shown to be strong predictors of future success in education, employment and general well-being. By extension, they are also related to long-term community prosperity (i.e. the development, attraction and retention of investment and skilled HR).

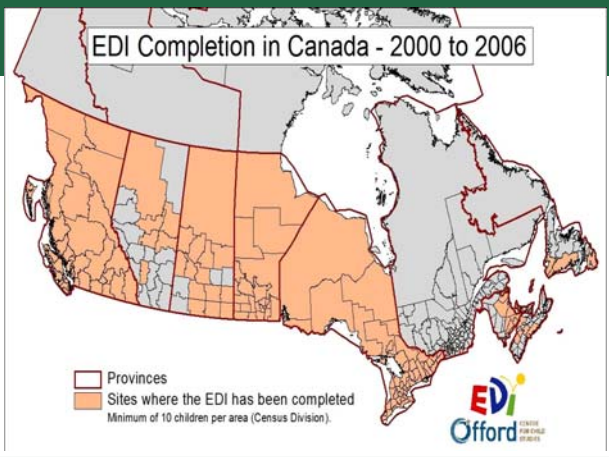
> "The later you attempt to change a developmental trajectory the more effort required."
>
> (Shanker, 2007)

## Makes good economic sense…




This chart (Rates of Return to Human Development Investment Across all Ages) shows rates of return to human capital investment initially setting investment to be equal across all ages. It was developed by Nobel Prize winner Economics, James Heckman (2002). Heckman calculates the return on investment in early childhood programs at 8:1, compared to a 3:1 return for primary and secondary education and 1:1 for adult training. Benefits are most pronounced for disadvantaged children.

> "Among developed countries Canada comes dead last in spending on early childhood programs."
>
> (Early Years Study 2, 2007)




Content on the EDI and its analysis was adapted from a presentation by Dr. Magdalena Janus, McMaster University, Offord Centre for Child Studies.

The Early Development Instrument, or EDI, was developed by Drs. Dan Offord and Magdalena Janus from McMaster University's Offord Centre for Child Studies.

It is an important part of the 'readiness to learn in school' picture for the community, and the information it provides has proven extremely useful to early years service providers and local decision makers.

The EDI itself, and related materials, can be found online at: www.offordcentre.com.

You can view EDI results in Niagara at: www.uey.eccdc.org.

All communities within BC, Manitoba and Ontario participate in its implementation, along with a large portion of Saskatchewan and Alberta. Eastern Canada has primarily implemented the EDI through its Understanding the Early Years sites, where the knowledge generated has led to local community action aimed at improving early learning and development outcomes in young children.

The EDI is grounded in the science of early childhood development and has links to community factors, literacy levels, school performance, health outcomes, and curriculum. It is also referred to in the Early Years Studies (Hon. Margaret Norrie McCain, J. Fraser Mustard and Dr. Stuart Shanker, 1999, 2002, 2007).

## Purpose of the Early Development Instrument (EDI)

- Measure 'readiness to learn in school'
- Report on groups of children
- Monitor groups over time
- Predict elementary school success

Senior kindergarten teachers complete a survey on each of their students. They answer questions in five developmental areas, based on their observations of the children. Results are then analyzed and shared at a population, or group level, rather than by individual child.

### EDI is:

- a survey
- a mobilisation tool
- a monitoring tool

EDI
EARLY DEVELOPMENT INSTRUMENT
a population-based measure for communities

### EDI is not:

- an individual assessment
- a prescription for action
- perfect

Example:
EDI results account for 33.8% of variance in grade 1 achievement (Offord Centre for Child Studies, 2007).

The Toronto District School Board first implemented the EDI in 1999. Their results have been most extensively analyzed, as these children have already completed their grade 6 EQAO (Education Quality and Accountability Office) standardized testing for reading, writing and math. Toronto has found that EDI scores are also predictive of grade 6 test scores.

What, exactly, does the EDI involve? What areas do Senior Kindergarten teachers consider and report on?

## Domains of School Readiness

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

Chart 1 (on page 4) provides additional information at the sub-domain levels.

Chart 1: Description of EDI Sub-domains

| Physical Health & Well-being | Social Competence | Emotional Maturity | Language & Cognitive Development | Communication Skills & General Knowledge |
|---|---|---|---|---|
| **Physical readiness for school day**<br>Being dressed inappropriately for school activities, being rested, prompt and adequately fed.<br><br>**Physical independence**<br>Looks after own needs, has an established hand preference, is well coordinated, and does not suck a thumb/finger.<br><br>**Gross and fine motor skills**<br>Able to physically tackle the school day and has gross and fine motor skills (i.e. good overall energy levels and physical skills). | **Overall social competence**<br>Able to get along with other children and plays with various children, usually cooperative and self-confident.<br><br>**Responsibility and respect**<br>Shows respect for others, and for property, follows rules and takes care of materials, accepts responsibility for actions, and shows self-control.<br><br>**Approaches to learning**<br>Works neatly, independently, and solves problems, follows instructions and class routines, easily adjusts to changes.<br><br>**Readiness to explore new things**<br>Has curiosity about the surrounding world and eagerness to explore new books, toys and games. | **Prosocial and helping behaviour**<br>Helps someone hurt, sick or upset, offers to help spontaneously, invites bystanders to join in.<br><br>**Anxious and fearful behaviour**<br>Is happy and able to enjoy school (i.e. not worried, unhappy, nervous, sad or excessively shy, indecisive), and comfortable being left at school by caregivers.<br><br>**Aggressive behaviour**<br>Does not use aggression as means of solving conflicts (i.e. does not get into physical fights, kick or bite others, take other people's things), does not have temper tantrums, and is not mean to others.<br><br>**Hyperactivity and inattention**<br>Able to concentrate (i.e. not restless, distractible, impulsive or fidgeting), settle with chosen activities, waits their turn, and mostly thinks before doing something. | **Basic literacy**<br>Knows how to handle a book, can identify some letters and attach sounds to some letters, shows awareness of rhyming words, knows the writing directions, and is able to write their own name.<br><br>**Interest in literacy/ numeracy and memory**<br>Shows interest in books and reading, math and numbers, and has no difficulty with remembering things.<br><br>**Advanced literacy**<br>Reading simple, complex words or sentences, writing voluntarily, writing simple words or sentences.<br><br>**Basic numeracy**<br>Can count to 20 and recognizes shapes and numbers, compares numbers, sorts and classifies, uses one-to-one correspondence, and understands simple time concepts. | • **Communicates easily and effectively** (i.e. is understandable and understands others)<br><br>• **Participates in story-telling or imaginative play**<br><br>• **Articulates clearly**<br><br>• **Shows adequate general knowledge**<br><br>• **Has proficiency in their native language** |

## Limitations

- One-time data point
- Small number in neighbourhood samples
- Only one part of the whole picture
- Data can only tell us so much
- Doesn't answer 'why?'
- Best used with other reliable data

When looking at neighbourhood data, small sample sizes need to be considered because sometimes a small number of children can bring down the overall scores. When this occurs, examination of other local community factors is strongly recommended.

At the same time, the Offord Centre for Child Studies has advised that sample sizes of 30 or more are valid and also protect the individual identities of participating children.

When minimum sample sizes are adhered to, the EDI is a reliable indicator of readiness to learn in school and a signpost for community action, whether that be gathering and examining more information and/or making program and service delivery decisions.

Various articles examining the reliability and validity of the EDI can be found online at: www.offordcentre.com/readiness/pubs/publications.html

'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)

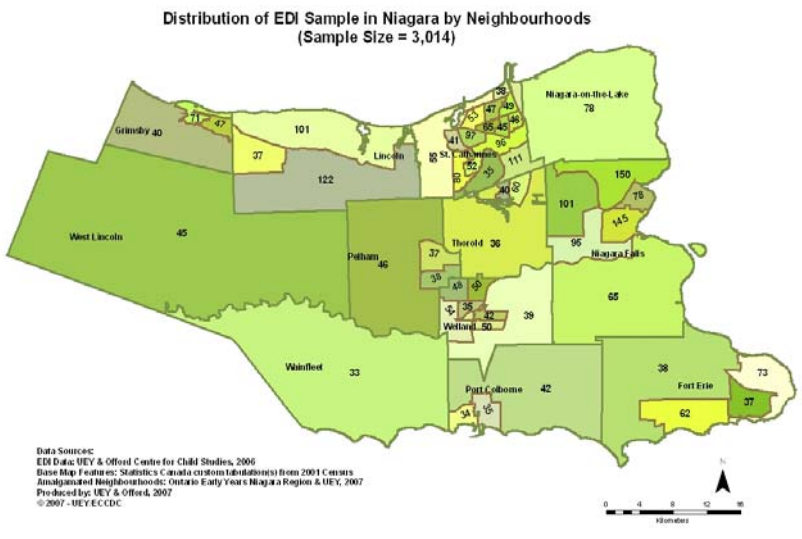
"If Canada is to succeed in forging a creative economy; we cannot afford to waste the talents of a single Canadian."

~ Thomas D'Aquino, President, Canadian Council of Chief Executives

Analysis of EDI results and a population health perspective both suggest that the largest percentages of children with vulnerabilities are found among low income families. However, the largest numbers of children with vulnerabilities are found among middle/upper income families.

This would then infer that population based programs or interventions, rather than targeted ones, would deliver the most impact. At the same time, we cannot forget about our most vulnerable children.

## 2006 EDI Sample




This map visually displays the EDI sample sizes in 2006 by neighbourhoods in the Niagara Region. The overall sample size was 3,014. Neighbourhood sample sizes are found within the respective neighbourhoods and municipalities. The colours differentiate municipal and neighbourhood boundaries. All neighbourhoods have sample sizes greater than 30 children.

In order to meet the minimum number required for EDI reporting purposes,

some neighbourhoods on this map were amalgamated (Ontario Early Years Niagara).

The EDI in Niagara

2001 – Understanding the Early Years (Niagara Falls data only)

2002 – Understanding the Early Years & Ontario Early Years Niagara Region

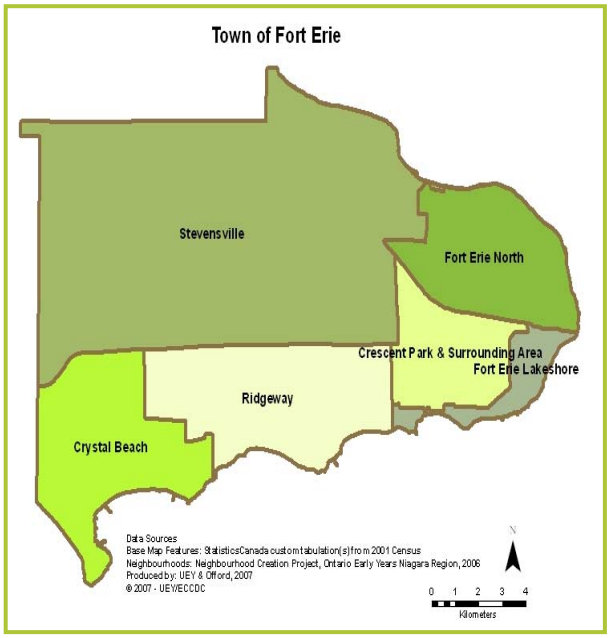
2003 – Understanding the Early Years (Niagara Falls data only)

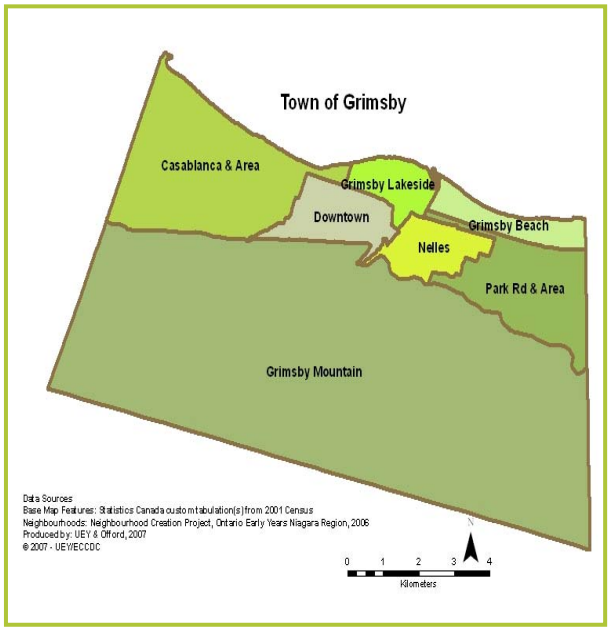
2005 – Understanding the Early Years & Ontario Early Years Niagara Region

2006 – Understanding the Early Years

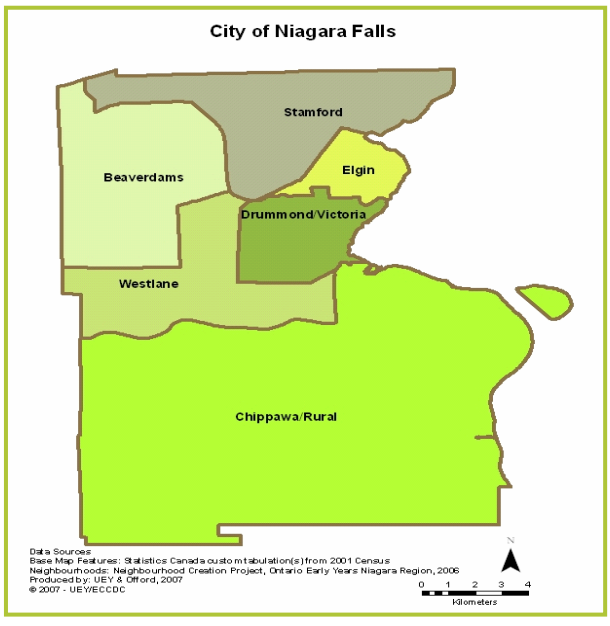
2008 – Ontario Early Years Niagara Region

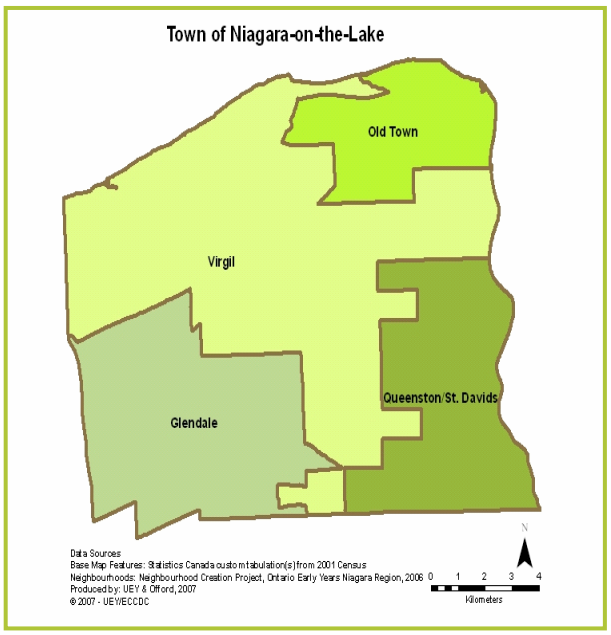
Region & Understanding the Early Years, 2007). The original neighbourhoods were identified through the "Neighbourhood Creation Project" completed in 2006 by Ontario Early Years Niagara Region, in consultation with local community members. To view the original neighbourhoods, please refer to the 12 municipal maps (pages 6 – 8).

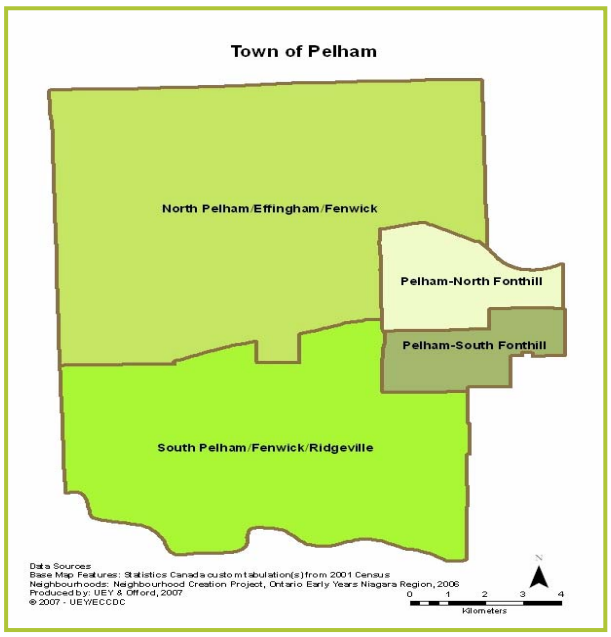







Town of Niagara-on-the-Lake
Old Town
Virgil
Glendale
Queenston/St. Davids
Data Sources
Base Map Features: Statistics Canada custom tabulation(s) from 2001 Census
Neighbourhoods: Neighbourhood Creation Project, Ontario Early Years Niagara Region, 2006
Produced by: UEY & Offord, 2007
© 2007 - UEY/ECCDC
0 1 2 3 4
Kilometers
N


Town of Pelham
North Pelham/Effingham/Fenwick
Pelham-North Fonthill
Pelham-South Fonthill
South Pelham/Fenwick/Ridgeville
Data Sources
Base Map Features: Statistics Canada custom tabulation(s) from 2001 Census
Neighbourhoods: Neighbourhood Creation Project, Ontario Early Years Niagara Region, 2006
Produced by: UEY & Offord, 2007
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0 1 2 3 4
Kilometers
N


City of Port Colborne
Stonebridge
Bethel/Gasline/Sherkston
Three Bridges
Sugarloaf
Data Sources
Base Map Features: Statistics Canada custom tabulation(s) from 2001 Census
Neighbourhoods: Neighbourhood Creation Project, Ontario Early Years Niagara Region, 2006
Produced by: UEY & Offord, 2007
© 2007 - UEY/ECCDC
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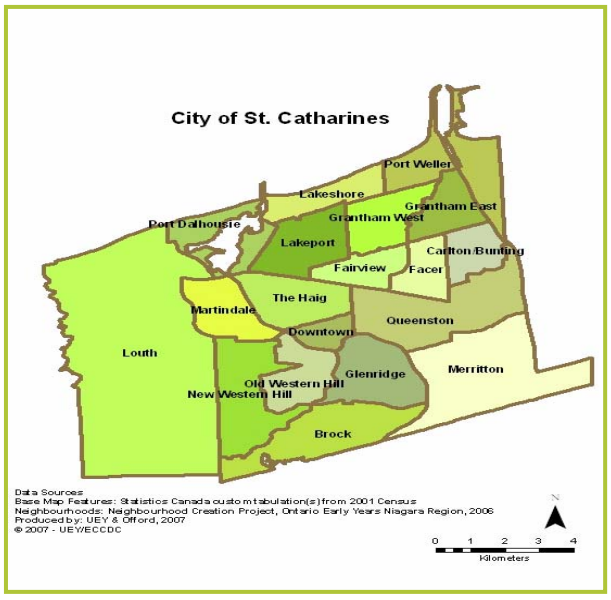
City of St. Catharines
Port Weller
Lakeshore
Grantham East
Grantham West
Port Dalhousie
Lakeport
Carlton/Bunting
Fairview
Facer
The Haig
Martindale
Queenston
Downtown
Louth
Glenridge
Merritton
Old Western Hill
New Western Hill
Brock
Data Sources
Base Map Features: Statistics Canada custom tabulation(s) from 2001 Census
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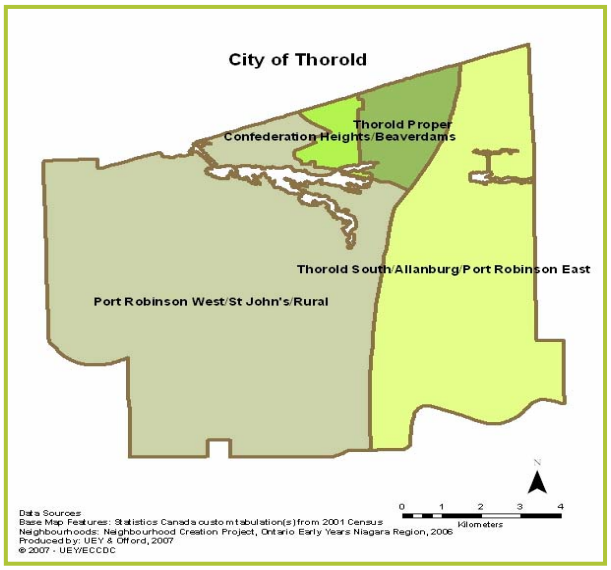
City of Thorold
Thorold Proper
Confederation Heights/Beaverdams
Thorold South/Allanburg/Port Robinson East
Port Robinson West/St John's/Rural
Data Sources
Base Map Features: Statistics Canada custom tabulation(s) from 2001 Census
Neighbourhoods: Neighbourhood Creation Project, Ontario Early Years Niagara Region, 2006
Produced by: UEY & Offord, 2007
© 2007 - UEY/ECCDC
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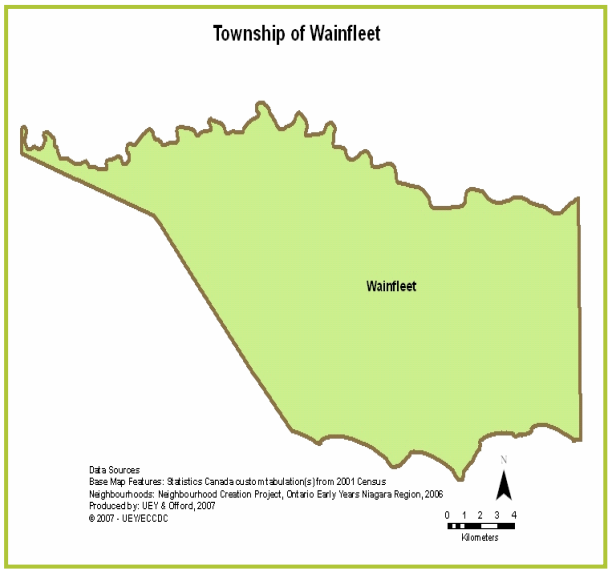
Kilometers
N


Township of Wainfleet
Wainfleet
Data Sources
Base Map Features: Statistics Canada custom tabulation(s) from 2001 Census
Neighbourhoods: Neighbourhood Creation Project, Ontario Early Years Niagara Region, 2006
Produced by: UEY & Offord, 2007
© 2007 - UEY/ECCDC
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Kilometers
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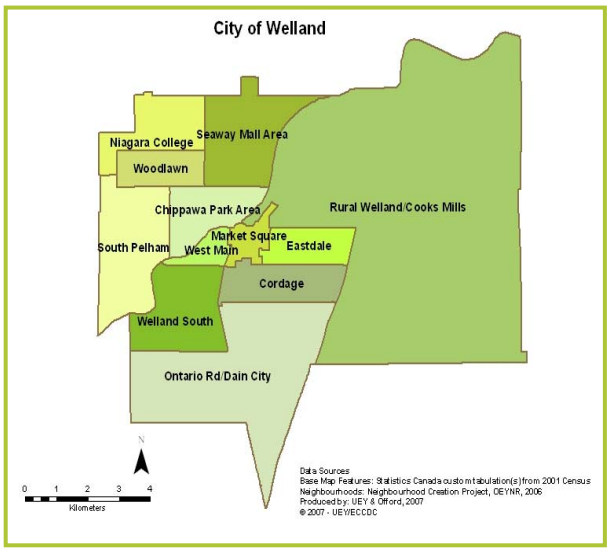
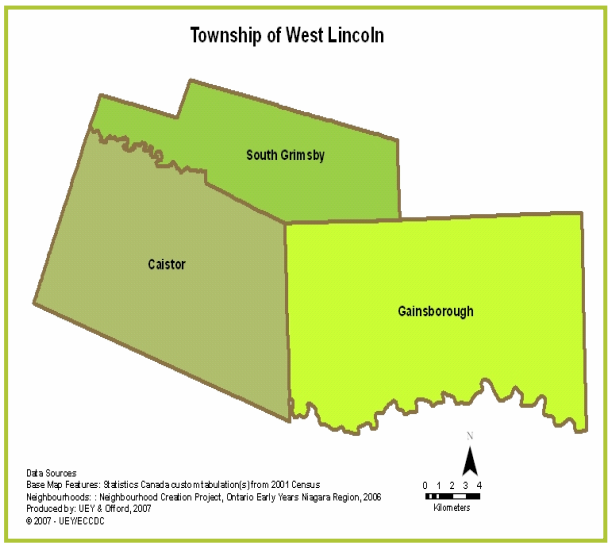
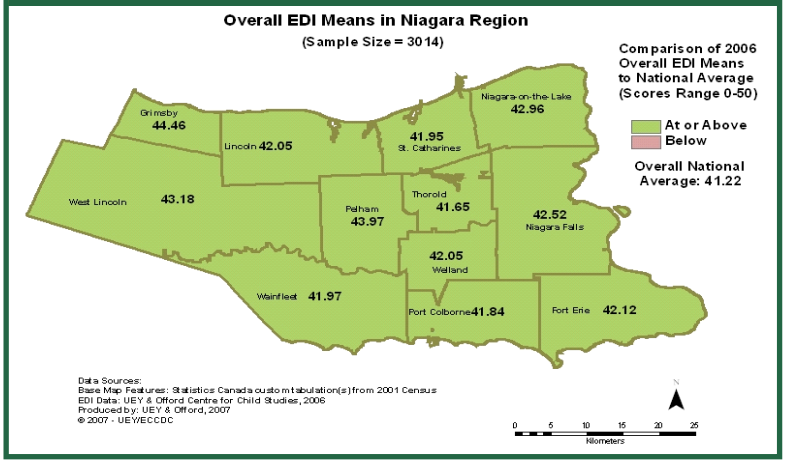


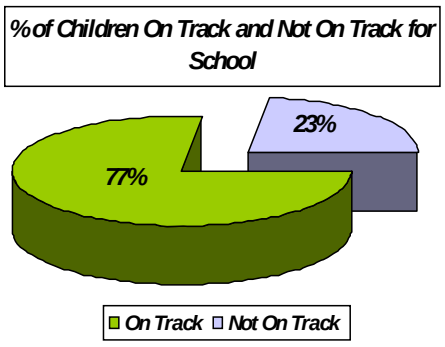




## 2006 Overall EDI Results



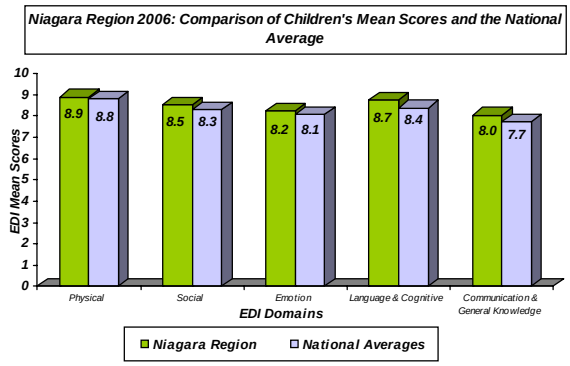

This map shows that all municipalities in the Niagara Region had overall EDI mean scores above the national average in 2006!

## 2006 Overall EDI On Track Results




This pie chart shows that 3 out of 4 senior kindergarten children 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%.

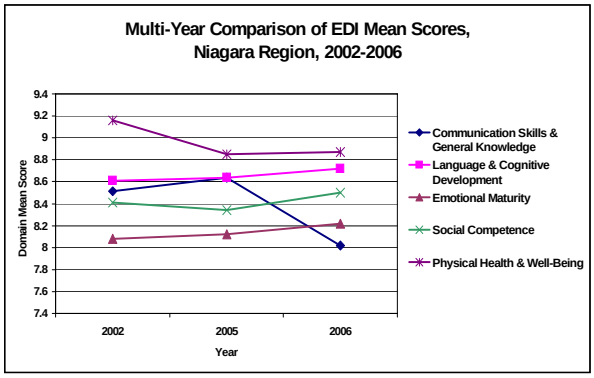
## 2006 EDI Domain Comparisons




Good news - children in Niagara also had statistically significant mean scores that were above the Canadian average in all 5 domains ($p<0.05$) in 2006!

> "Early education should target the whole, active child and not just isolated cognitive skills. Programs should create playful environments rich with opportunities for exploration."
>
> ~ Dr. Fraser Mustard

## Domain Means 2002-2006

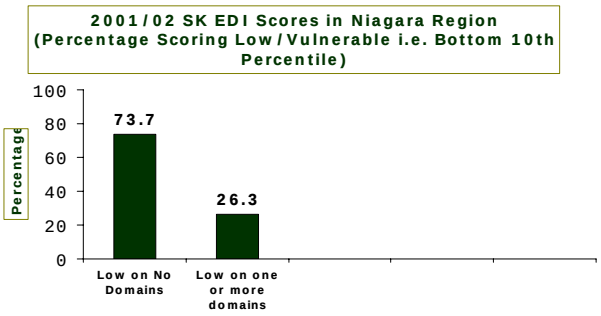



This chart shows a comparison of mean scores in Niagara, by domain, for the years 2002, 2005 and 2006.

We have seen improvements in Emotional Maturity, Social Competence and Language & Cognitive Development.

There appears to be some decline in Communication Skills & General Knowledge and Physical Health & Well-being scores over time.

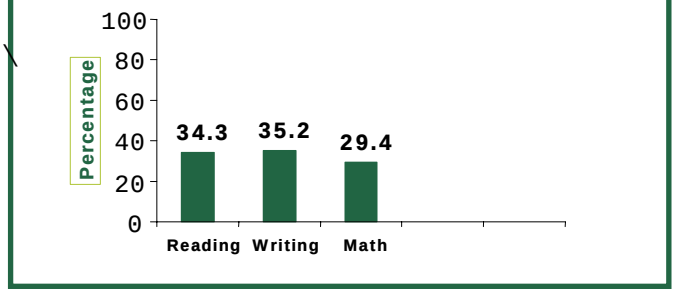
## EDI Vulnerability and EQAO Scores




We can also compare EDI and EQAO results for the same group of children. This chart shows the percentage of senior kindergarten children from the 2001/02 Niagara Region cohort scoring 'low on one or more' and 'low on no' domains.

26.3% of the sample scored in the vulnerable range on the overall EDI and this has been found to be a predictor of future academic success (Offord Centre for Child Studies, McMaster University).

## EDI Vulnerability and EQAO Scores




This chart shows the percentage of students scoring below the provincial standards in reading, writing and math by combining DSBN and NCDSB scores in Levels 1 and 2 and NE1*. It outlines grade 3 EQAO results on the same cohort that participated in the 2002 EDI** in the Niagara Region, as displayed in the previous slide.

Vulnerabilities in readiness to learn seems to persist, or perhaps worsen over time, as percentages scoring below the provincial standards in reading, writing and math were slightly greater in grade 3 (29.4%-35.2%) than the levels of vulnerability found on the EDI in senior kindergarten (26.3%).**

*NE1 – not enough evidence for level 1. the student has not demonstrated enough evidence of knowledge and understanding to be assigned level 1. Level 1 – the student has demonstrated some of the required knowledge and skills in limited way. Achievement falls much below the provincial standard. Level 2 – the student has demonstrated some of the required knowledge and skills in limited ways. Achievement approaches the provincial standard.

** EDI domains related to reading, writing and math include: Language & Cognitive Development, Communication Skills & General Knowledge and Physical Health & Well-being. Sub-domain areas of importance among these include the ability to: write own name, show interest in games involving numbers/words, read sentences, count to 20, clearly communicate own needs and understand others, tell a story, clearly articulate without sound substitution, and hold a pencil.

"Gaining the skills required for life-long learning in our knowledge economy must begin with a foundation that ensures success: the building blocks that prepare young children for school."

(Quality of Public Education in Canada, Issue No 4, Winter 2008, The Learning Partnership)

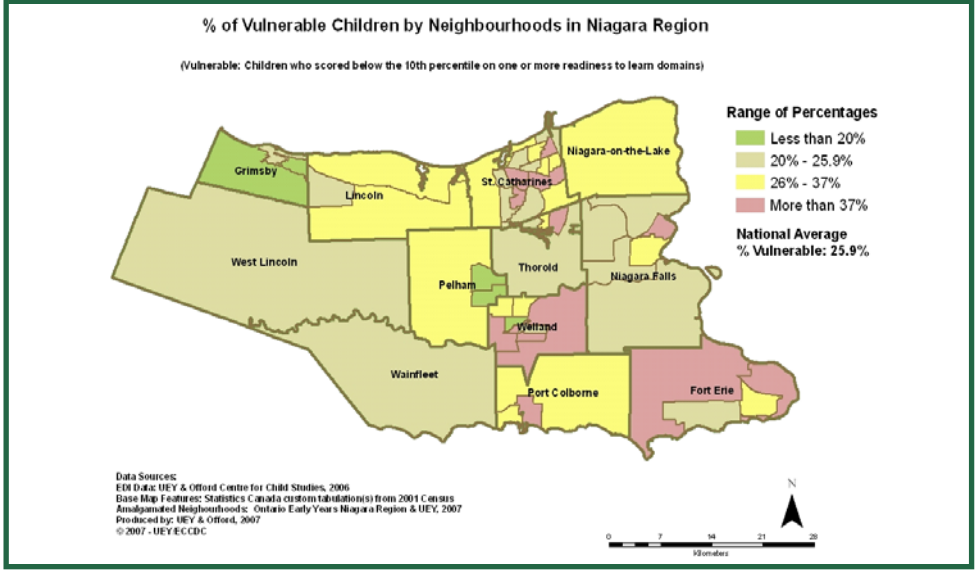
## Examining Mapped Knowledge

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,
- Celebrate and replicate beige and green successes, and ultimately plan to

Go for the green!

## 2006 Overall EDI Vulnerability




This map shows the percentage of vulnerable children on the overall EDI, by neighbourhoods in the Niagara Region, as compared to the national average (25.9%). Vulnerability is defined as scoring in the lowest 10% of scores on one or more domains.

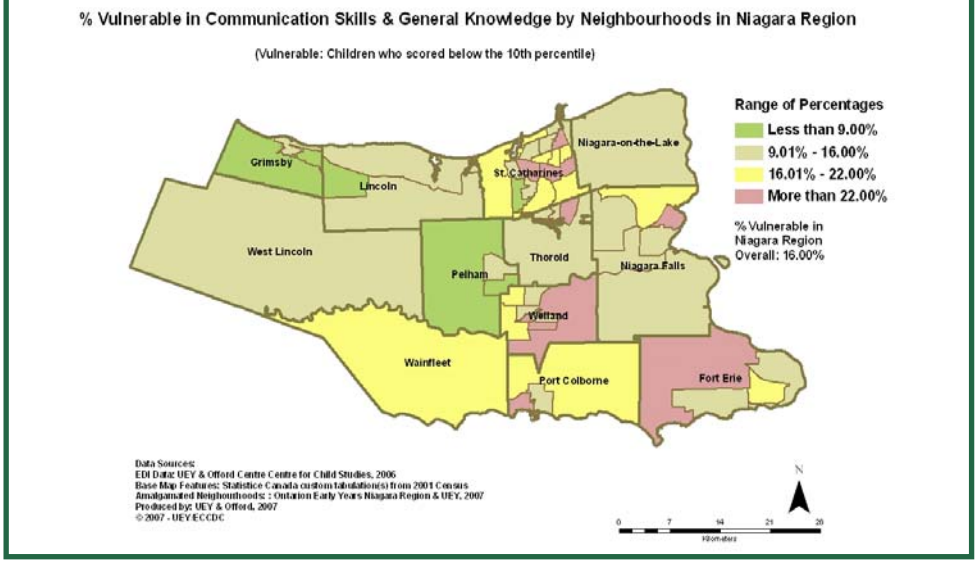
Scoring in the vulnerable range has been found to be a predictor of future success in education, employment and general well being (Offord Centre for Child Studies, McMaster University).

Scores for the overall region indicated that there were 30.1% of SK children scoring low on one or more domains. This represents a statistically significant difference (greater) in comparison to the national normative sample (25.9%, 2000-2004).

Clearly, Grimsby is doing quite well. 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%) the national vulnerability average (25.9%).

Also pay attention to Niagara on the Lake, Lincoln and Pelham where there are surprisingly high rates (26-37%) of vulnerability given local community conditions.

## 2006 Vulnerability by Domain




This map shows vulnerability percentages on the Communication Skills & 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 (9.01-16.00%).

However, the majority of Welland, Fort Erie, Port Colborne, St. Catharines and Wainfleet display vulnerability above the regional average (red and yellow areas - above 16.00%), as do some neighbourhoods in Niagara Falls and Thorold.

As Niagara appears to have declining means in this domain over time, further analysis at the sub-domain level was conducted on the 2006 results.

Chart 2 (below) outlines areas of weakness, at the sub-domain level, by municipality, in Communication Skills & General Knowledge.

Chart 2: Communication Skills & General Knowledge Sub-domains
Poor/Very Poor Percentages Above Regional Average (UEY, 2006)

| Sub-domains> Municipalities ↓ | Communicates easily and effectively | Participates in story-telling or imaginative play | Articulates clearly | Shows adequate general knowledge | Has proficiency in their native language |
|---|---|---|---|---|---|
| Fort Erie | X | X | X | | X |
| Lincoln | X | | | | |
| Niagara Falls | X | X | | | X |
| Niagara on the Lake | X | | X | | X |
| Pelham | | | | X | |
| Port Colborne | X | X | X | | X |
| St. Catharines | X | X | X | | X |
| Thorold | X | X | X | X | X |
| Wainfleet | X | X | | X | |
| Welland | X | X | X | | X |
| West Lincoln | | | X | | |

The map on page 13 shows vulnerability percentages on the Physical Health & Well-being domain of the 2006 EDI for neighbourhoods in Niagara as compared to the regional average (14%).

West Lincoln shows overall low vulnerability (green) in 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 (beige and/or green).

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 and Niagara Falls.

In order to better understand the decline in this domain over time, sub-domain results were examined more closely.

Chart 3 (page 13) outlines areas of weakness, at the sub-domain level, by municipality, in Physical Health & Well-being.

From this analysis, it would seem that much of the overall vulnerability in this domain is likely attributable to low scores on gross and fine motor skills, as the regional average deemed 'not on track' in this sub-domain was 30.5%. This is quite high, given that the percentage 'not on track' in the overall domain was 19%. In fact, Port Colborne (44.4%), Wainfleet (43.3%) and Welland (32.0%) all have not on track percentages significantly above the already high regional average in this sub-domain (30.5%).

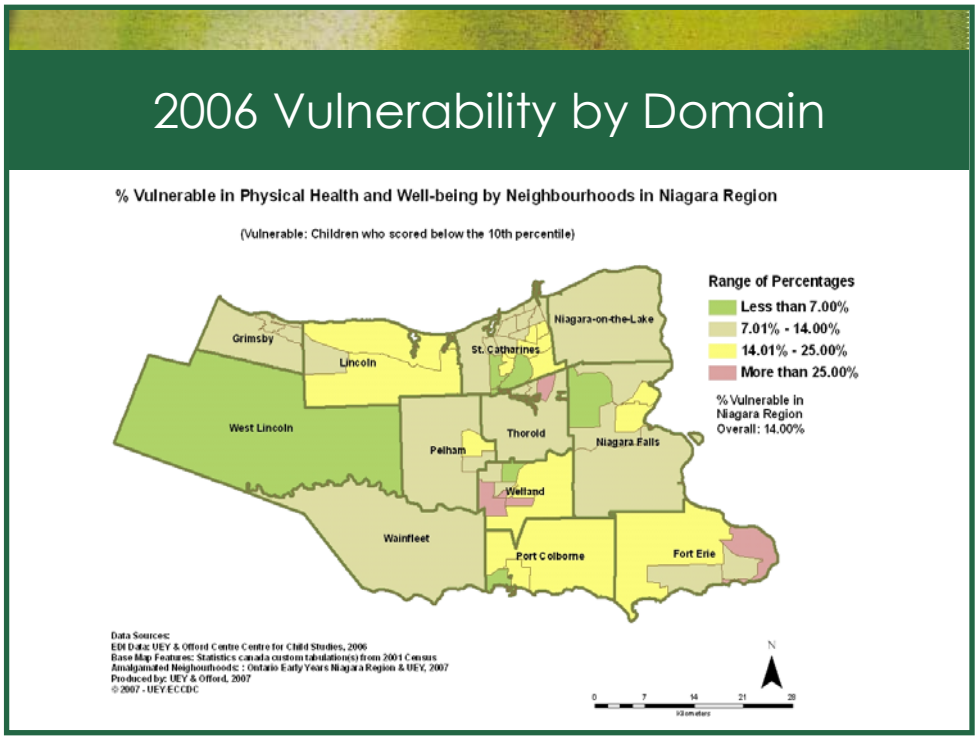


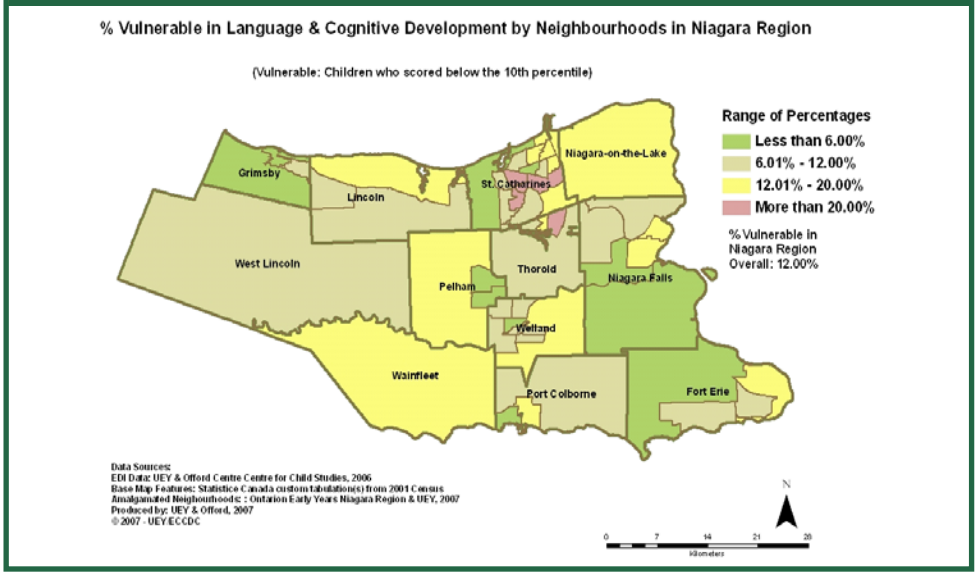

Chart 3: Physical Health & Well-being Sub-domains Above Average Not on Track Percentages (UEY, 2006)

| Sub-domains> Municipalities ↓ | Physical readiness for the school day (compared to regional average) | Physical independence (compared to regional average) | Gross and fine motor skills (compared to average on overall domain) |
|---|---|---|---|
| Fort Erie | | X | X |
| Grimsby | | | X |
| Lincoln | X | | X |
| Niagara Falls | | X | X |
| Niagara on the Lake | | | X |
| Pelham | X | | X |
| Port Colborne | X | | X |
| St. Catharines | X | | X |
| Thorold | | X | X |
| Wainfleet | | | X |
| Welland | X | | X |
| West Lincoln | | | X |

The map on page 14 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 majority of Grimsby, Fort Erie, Niagara Falls and neighbourhoods in St. Catharines, Port Colborne and Pelham showing less than 6% of their Senior Kindergarten population scoring in the lowest 10th percentile.

## 2006 Vulnerability by Domain




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. St. Catharines and Thorold also show pockets of very high vulnerability rates (red – more than 20%) in this domain.

Chart 4 (below) outlines areas of weakness, at the sub-domain level, by municipality, in Language & Cognitive Development.

Niagara on the Lake and Pelham show vulnerability rates above the regional average yet their 'not on track' averages for sub-domains were below the region's average. The neighbourhood results for Niagara on the Lake, Pelham, Lincoln and Wainfleet may seem surprising, given the good socioeconomic and community conditions.

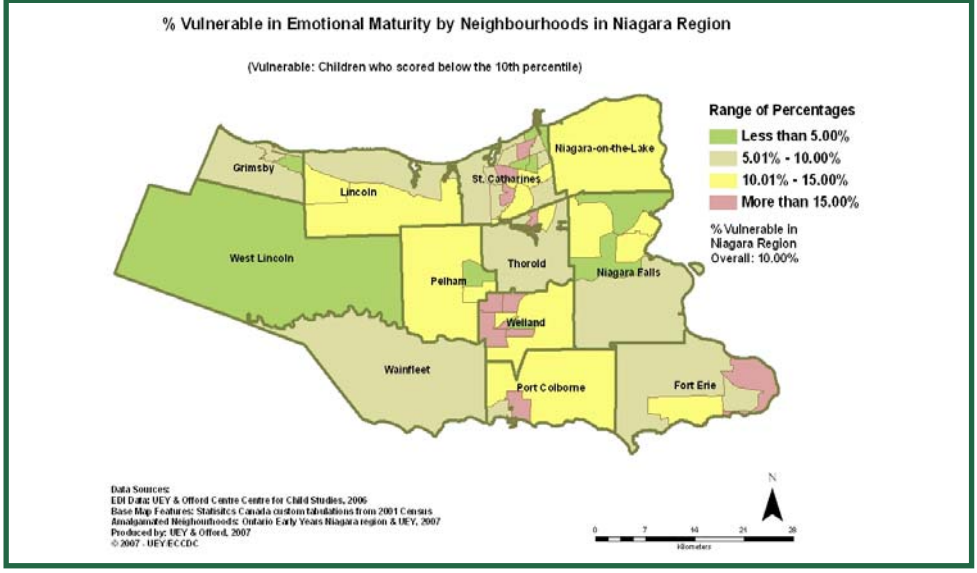
*These communities likely need to further examine neighbourhood conditions and needs.*

Chart 4: Language & Cognitive Development
Not on Track Percentages Above Regional Average (UEY, 2006)

| Sub-domains> Municipalities ↓ | Basic literacy | Interest in literacy/numeracy and memory | Advanced literacy | Basic numeracy |
|---|---|---|---|---|
| Fort Erie* | | X | | |
| Grimsby | | | | |
| Lincoln | X | | X | X |
| Niagara Falls | | | X | |
| Niagara on the Lake* | X | | | |
| Pelham* | | X | | |
| Port Colborne | | X | | |
| St. Catharines | X | X | X | X |
| Thorold | X | X | X | X |
| Wainfleet | | | | X |
| Welland | | X | X | |
| West Lincoln | | | | |

*Niagara on the Lake, Fort Erie and Pelham – only vulnerability, as opposed to not on track, rates above the regional average. Niagara on the Lake and Pelham show vulnerability rates above the regional average yet their 'not on track' averages for sub-domains were below the region's average. The neighbourhood results for Niagara on the Lake, Pelham, Lincoln and Wainfleet may seem surprising, given the good socioeconomic and community conditions. Further examination of community factors is likely necessary.

## 2006 Vulnerability by Domain




This map shows vulnerability percentages on the Emotional Maturity domain of the 2006 EDI for neighbourhoods in Niagara as compared to the regional average (10%).

Again, all of West Lincoln has less than 5% vulnerability (green), as do neighbourhoods in Niagara Falls, St. Catharines, Grimsby and Pelham. St. Catharines, Thorold, Welland, Port Colborne and Fort Erie are showing neighbourhoods where more than the regional average percentage of children scored in vulnerable range (yellow and red).

Once more, surprisingly, neighbourhoods in Lincoln and Pelham, and all of Niagara on the Lake, display higher than regional average vulnerability results in this domain. What is contributing to these pockets of vulnerability in Emotional Maturity and what aspects of this domain are scoring lowest overall?

Chart 5 (page 16) outlines areas of weakness, at the sub-domain level, by municipality, in Emotional Maturity.

Pelham results are less clear. However, the percentage not on track in prosocial and helping behaviours was 22.4% which is slightly higher than the not on track percentage in the region for the Emotional Maturity domain overall (22.0%). Additionally, some of these neighbourhoods also show average household incomes below the national average and Low Income Cut-Off and population without high school percentages that are above the national averages.

***Vulnerability in this domain extends beyond these Pelham neighbourhoods and, in some cases, does not appear to be related to socioeconomic conditions. What other factors may be at work here?***

"THE FIRST 'R': RELATIONSHIPS. Families matter"

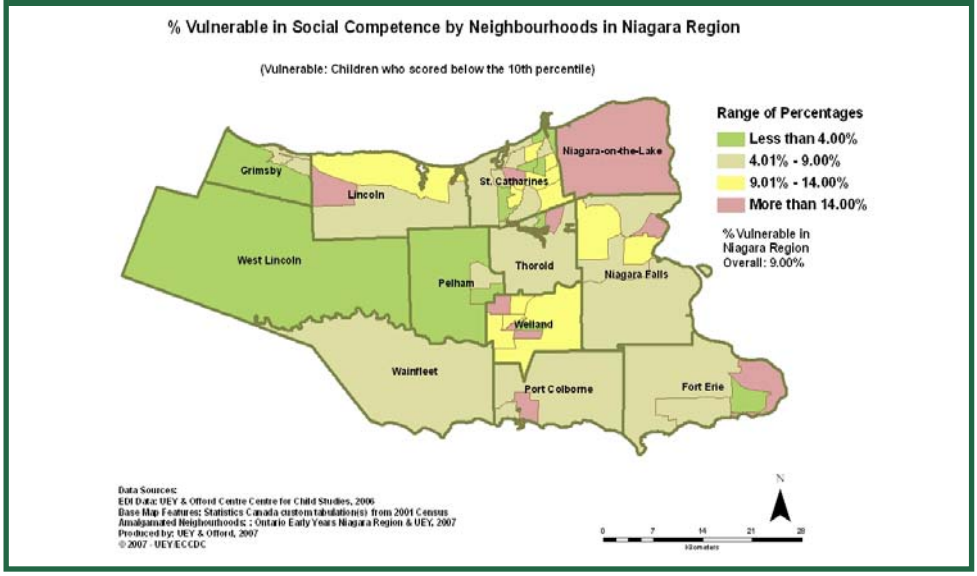
~ Jean Clinton BMus MD FRCP(C), McMaster University and Children's Hospital, Voices for Children

Chart 5: Emotional Maturity
Not on Track Percentages Above Regional Average (UEY, 2006)

| Sub-domains> Municipalities ↓ | Prosocial and helping behaviour | Anxious and fearful behaviour | Aggressive behaviour | Hyperactivity and inattention |
|---|---|---|---|---|
| Fort Erie | X | X | X | X |
| Lincoln | X | | X | X |
| Niagara Falls | | | | X |
| Niagara on the Lake | | X | X | |
| Pelham* | X | | | |
| Port Colborne | X | X | X | X |
| St. Catharines | X | | | X |
| Thorold | | | X | X |
| Wainfleet | | | | X |
| Welland | | | X | X |

* In Pelham, the percentage slightly higher indicated is compared to the regional not on track average for the domain overall, as opposed to not on track sub-domain scores. Additionally, some neighbourhoods also show average household incomes below and Low Income Cut-Off and Population without High School percentages above the national averages. Further examination of community conditions is likely necessary. Vulnerability in this domain extends beyond these Pelham neighbourhoods and, in some cases, does not appear to be related to socioeconomic conditions. What other factors may be at work here?

## 2006 Vulnerability by Domain




This map shows vulnerability percentages on the Social Competence domain of the 2006 EDI for neighbourhoods in Niagara 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 (green).

Conversely, neighbourhoods in St. Catharines, Niagara Falls, Thorold, Welland, Lincoln, Port Colborne and Fort Erie scored above the regional average (red and yellow). In Niagara on the Lake there was a very high rate of vulnerability (more than 14%) across the entire community.

Chart 6 (page 17) outlines areas of weakness, at the sub-domain level, by municipality, in Social Competence.

Lincoln is a bit more difficult to analyze. The percentage not on track in independence and adjustment and overall social competence with peers is quite close to regional average, with other sub-domains scoring well below. The affected neighbourhoods did have higher than national average percentages of population without high school and lone parent families.

*What is the difference between the bordering Fort Erie neighbourhoods showing a wide variance in vulnerability rates (red and green)? Are there other specific community conditions within Lincoln that might provide us with more of this picture?*

Chart 6: Social Competence
Not on Track Percentages Above Regional Average (UEY, 2006)

| Sub-domains> Municipalities ↓ | Overall social competence | Responsibility and respect | Approach to learning (i.e. independence and adjustment) | Readiness to explore new things |
|---|---|---|---|---|
| Fort Erie | | X | | |
| Lincoln | | | | |
| Niagara Falls | X | X | X | X |
| Niagara on the Lake | X | X | X | |
| Port Colborne | X | X | X | X |
| St. Catharines | X | X | X | X |
| Thorold | X | X | X | X |
| Wainfleet | | | X | |
| Welland | X | | X | X |

## Factors Increasing Rates of Risk

| | |
|---|---|
| • Child health (low) | 2.35 |
| • Gender (boy) | 2.32 |
| • Income (low) | 2.02 |
| • Family status (not intact) | 1.83 |
| • Age (younger half) | 1.36 |

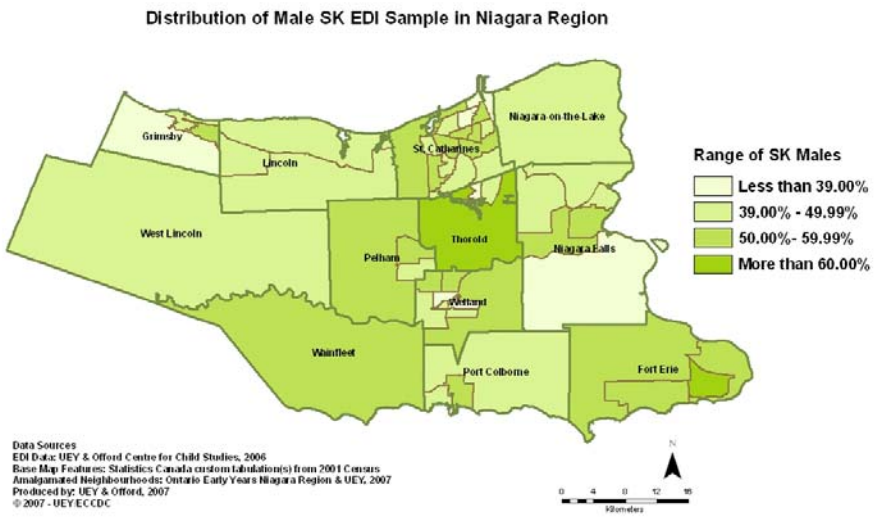
Source: Janus & Duku 2007

These are the factors which have been found to increase vulnerability rates on the EDI across the normative national sample.

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.

*It may be useful to look at child health data in the region as compared to vulnerability on the EDI…*

## 2006 EDI



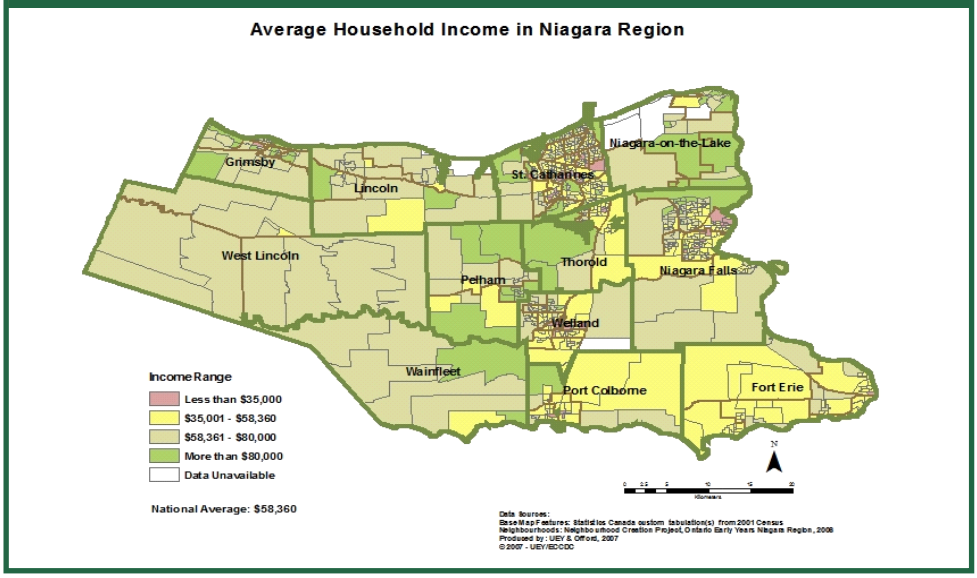

There were 1,412 boys in the 2006 regional EDI sample.

Neighbourhoods in Grimsby, Pelham, Wainfleet, St. Catharines, Thorold, Welland, Niagara Falls and Fort Erie have neighbourhoods where the percentage of boys in the 2006 EDI sample was greater than 50%.

These rates are higher than the overall percentage of boys in the 2006 Niagara Region EDI cohort (48.3%) and may be impacting EDI scores.

In all five domains of school readiness in Niagara (UEY, 2006), girls scored statistically significantly higher than boys. This is a consistent developmental phenomenon across all sites where the EDI has been implemented.

## 2001 Census



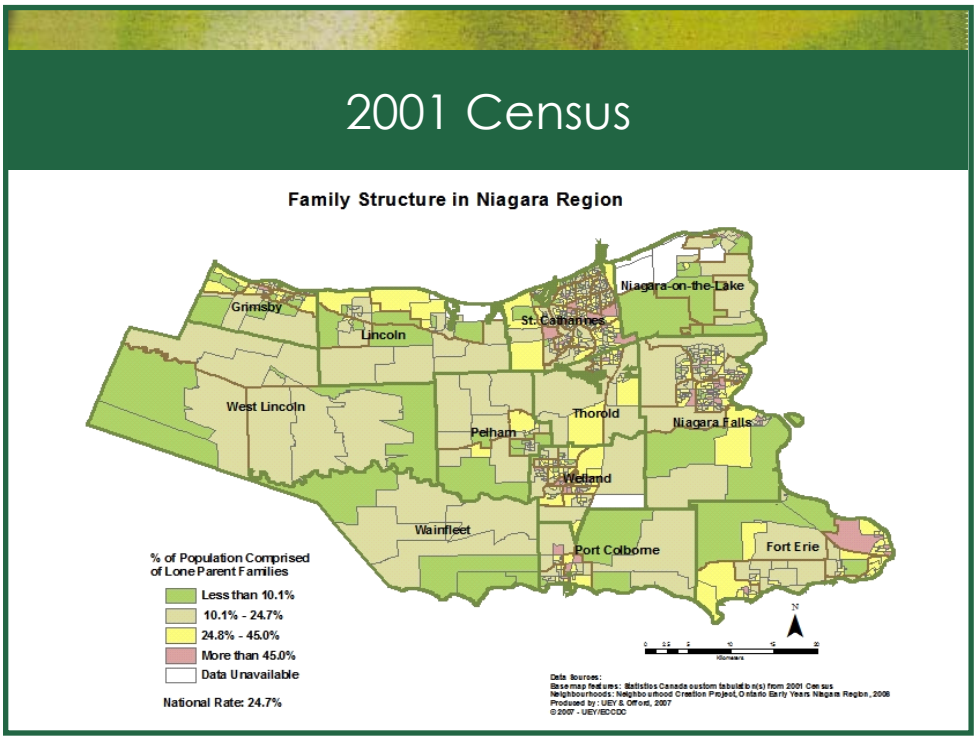

This map (at left) compares ranges of average household income in the Niagara Region to the national average ($58,360).

As anticipated, municipalities with average household income levels above the national average (Grimsby, Lincoln, West Lincoln, Pelham and Wainfleet) also have better overall scores on the EDI and lower rates of vulnerability.

The reverse is also true and lower income levels seem related to poorer outcomes on EDI (St. Catharines, Thorold, Welland, Port Colborne, Fort Erie and Niagara Falls). Note: For closer examination of the data, municipal neighbourhood level socioeconomic maps are also available.

Niagara on the Lake is especially interesting, with mostly high average household income levels yet also high percentages of vulnerability in Emotional Maturity and Social Competence. However, in this municipality, there is:

## 2001 Census

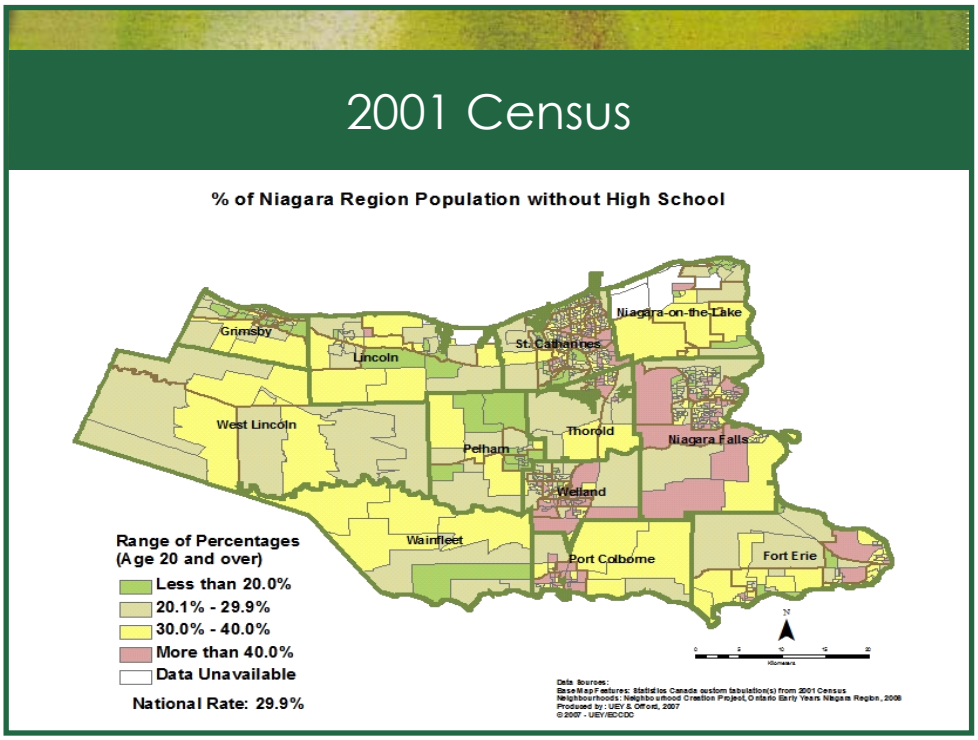



- missing socioeconomic data due to the non-permanent status of residents along the lakeshore,
- neighbourhoods with lower income levels, and higher percentages of the population without high school, speaking neither English nor French, receiving income from government transfer payments and/or moving (than the national average),
- possibly a lack of social services for families with young children.

The map on page 18 displays percentage of the population comprised of lone parent families in Niagara as compared to national average (24.7%).

Niagara Falls, Port Colborne, St. Catharines, Welland and Fort Erie have neighbourhoods with lone parent rates above the national average. These neighbourhoods also have lower income and education levels and higher than regional averages of vulnerability on 4 - 5 of the EDI domains.

Neighbourhoods in Niagara on the Lake, Lincoln and Pelham where the incidence of lone parent families exceeds the national average also appear to have higher rates of vulnerability. This would suggest careful examination of local factors, including access to resources.




This map displays percentage of the population without high school in Niagara as compared to national average (29.9%). Unfortunately, all municipalities contain neighbourhoods where the education level is below the national average.

Neighbourhoods in St. Catharines, Niagara Falls, Welland, Niagara on the Lake, Thorold and Port Colborne where the percentage without high school is above the national average also have higher than regional vulnerability rates on the domains.

However, municipalities with vulnerability rates at or below the national average, such as Grimsby, Pelham, West Lincoln, Lincoln and Wainfleet, also have neighbourhoods where the percentage of the population without high school is above the national average (29.9%).

*Are there factors that may be helping to reduce the impact of low parental education levels in these communities? Research suggests that children living in mixed income communities do better...*

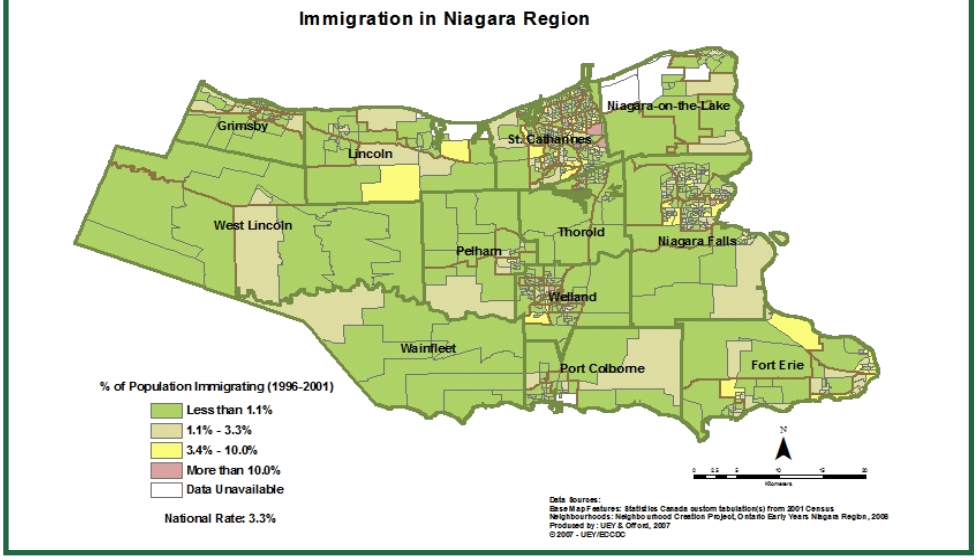
The map on page 20 shows the percentage of the population who immigrated (1996-2001) by neighbourhoods in the Niagara Region as compared to national average (3.3%).

There are neighbourhoods within Lincoln, St. Catharines, Niagara Falls, Welland, and Fort Erie with immigration rates above the national average. All these neighbourhoods share higher than regional vulnerability percentages in Physical Health & Well-being and Emotional Maturity. There are also correlations to higher vulnerability percentages on the other three EDI domains.

However, at the same time…. The Lincoln neighbourhood with higher rates of immigration also has lower income and education levels. Despite this, overall EDI scores remain generally good and vulnerability rates low (except in Physical Health & Well-being and Emotional Maturity).

Likewise, the neighbourhood along the north eastern edge of Fort Erie, which has higher than national rates of immigration, also has low percentages of vulnerability on the EDI (except in Communication Skills & General Knowledge and Physical Health & Well-being).

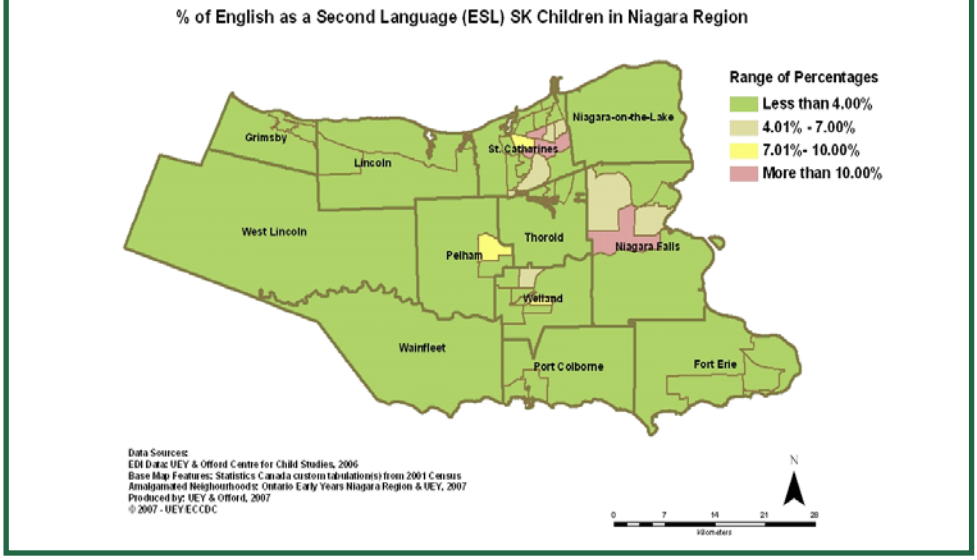
## 2001 Census




- *What makes these neighbourhoods in Fort Erie and Lincoln so resilient?*
- *Could higher than national averages of two parent families in both communities, and lower percentages of the population without high school in the Fort Erie neighbourhood be factors?*
- *Are there gaps in immigrant/newcomer services in the municipalities with higher percentages?*
- *What services, specifically, might improve readiness to learn among our immigrant and refugee children?*

We are only beginning to look at readiness to learn in school results from the EDI in relation to immigration and newcomer children in Niagara.

## 2006 EDI




Overall, children with ESL status scored statistically significantly higher than those without in the Social Competence domain ($p<0.05$)). However, children with ESL status scored statistically significantly lower than those without in the Language & Cognitive Development and Communication Skills & General Knowledge domains.

These results must be interpreted with considerable caution, as children with ESL status comprise a small percentage of the population.

In the region, 3% of the overall 2006 EDI sample was comprised of SK children with English as a Second Language (ESL) but there are much higher concentrations in certain neighbourhoods. This map shows percentage distribution of ESL Senior Kindergarten children for the 2006 EDI sample.

St. Catharines, Pelham, Welland and Niagara Falls all have neighbourhoods with relatively higher concentrations of ESL SK students than found regionally (yellow and red).

The Pelham neighbourhood percentage vulnerable exceeds the regional average on the Physical Health & Well-being domain only, while the neighbourhoods identified in St. Catharines rates of vulnerability in neighbourhoods with more ESL SK are above regional averages in all 5 domains.

At the same time, the neighbourhood in Niagara Falls where ESL SK students exceed 10% (red) shows no domains with vulnerability percentages above the regional average.

In both Niagara Falls and Welland the neighbourhoods with a higher concentration of ESL students also have lower than regional average vulnerability rates on the EDI overall.

- *What makes the difference in terms of outcomes for ESL children in these communities?*
- *Are there different school and community based programs and services across these municipalities or other local factors at play?*

## In conclusion

- Almost 1 in 4 Niagara children not ready for learning
- Poor scores impact future success and, eventually, community health and prosperity
- Larger percentages of children living in poverty are vulnerable
- Largest number of children at risk live in middle/upper income families
- Small changes for large proportions of the population will have most impact
- Neighbourhood makes a difference – not always in a predictable manner
- Access to resources also seems important
- Low scores, differences and surprises can inspire further study and action

## Next Steps

- Stay informed and involved in the early years
- Find opportunities to work together
- Use knowledge to make evidence-based decisions and plans
- Identify other factors affecting poor outcomes in neighbourhoods
- Examine EDI and socioeconomic data in relation to health (**children and mothers**), parenting styles, literacy, and EQAO results
- Examine resilience in neighbourhoods beating the odds
- Continue to support our Integrated Plan, youth, businesses, community groups and agencies
- Contact Glory and Tiffany to clarify questions or obtain more local information

Additional information on results are available for the following:

- By age,
- For children with special needs,
- For children with Aboriginal Status,
- For children attending part-time pre-school,
- For children attending Junior Kindergarten, and
- For children in full vs. part-time non-parental care arrangements.

NOTES

NOTES

*"Regardless of income level, daily reading, positive parent-child interactions, participation in organized sports, and lessons in physical activities and arts were linked with higher scores on readiness-to-learn measures."*

~ "Are 5-year-old children ready to learn in school? Family income and home environment contexts", Education Matters (May 2007, volume 4 number 1), Statistics Canada Catalogue No. 81-004-XIE
http://www.statcan.ca/english/freepub/81-004 XIE/2007001/read.htm#top