

Understanding  
the Early Years

**UEY**

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**COMMUNITY RESEARCH IN CHILD DEVELOPMENT**

UEY Niagara is a project of the Applied Research Branch  
Human Resources Development Canada

# Overview

- **EDI Background and Implementation**
- **Results of the EDI Study in Niagara Falls**
- **Highlights of the CMS and NLSCY Community Study**
- **Next Steps**



# The Importance of the Early Years

Development during the first six years of life establishes a foundation for learning, behaviour and health over the life cycle.

Initial research has shown that community factors may impact on child outcomes, but only further research can show the magnitude of the impact and the mechanisms through which it occurs.

(McCain & Mustard, 1999 and Doherty, 1997)

# Understanding the Early Years (UEY)

- Project of the Applied Research Branch of Human Resources Development Canada
- National study to help determine the extent and nature of community influences on child development and to enhance community capacity to use this data to create effective community-based responses.
- Part of Government of Canada commitment to ensure that all children are ready to learn and participate in society (SFT 1997)
- Received Cabinet approval in February 1999

# Policy Context

- Compliments directions underway across Canada
- Consistent with vision & goals of National Children's Agenda
- Supports measuring & monitoring commitments made by First Ministers agreement on Early Child Development
- Contributes to research knowledge & information foundations of evidence-based decision making & informed policy development

Builds on the National Longitudinal Survey of Children and Youth (NLSCY)

Provides provincial and territorial estimates on a variety of outcome measures

Allows measuring and reporting on the readiness of Canadian children to learn

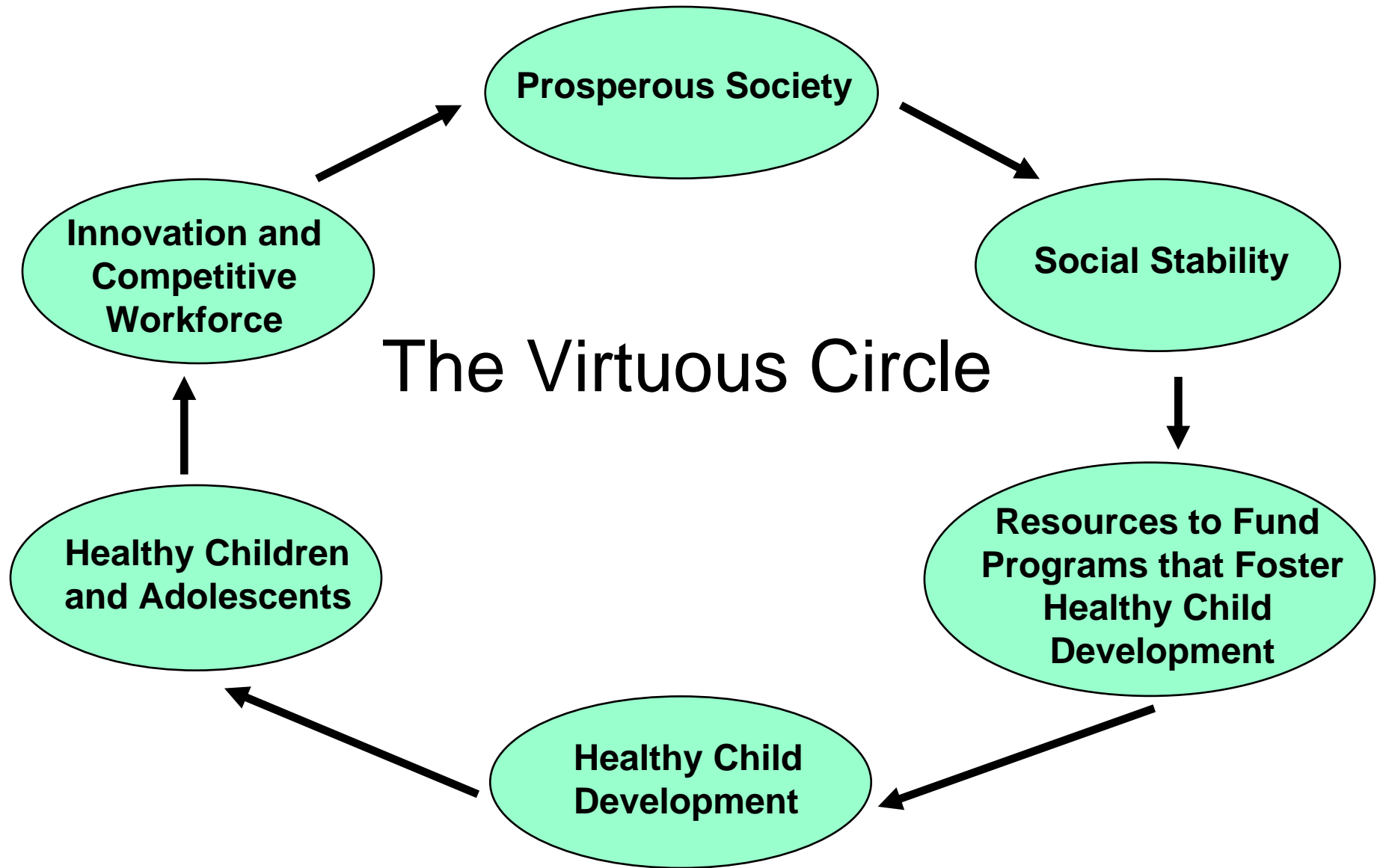
Provides research information to community leaders so that they may make informed decisions about the best policies and most appropriate programs to serve families with young children.

# Current UEY Communities

- Abbotsford, BC
- Prince Albert; Saskatoon, SK
- South Eastman; Winnipeg, MB
- Mississauga Dixie-Bloor; Niagara Falls, ON
- Montreal, Qc
- Southwestern Region of Newfoundland
- Hampton, NB
- Prince Edward Island

Prototype: North York, ON







# Vulnerability

Children are considered vulnerable when they have one or more serious behavioral or emotional problems that could lead to even greater difficulties as they grow up.

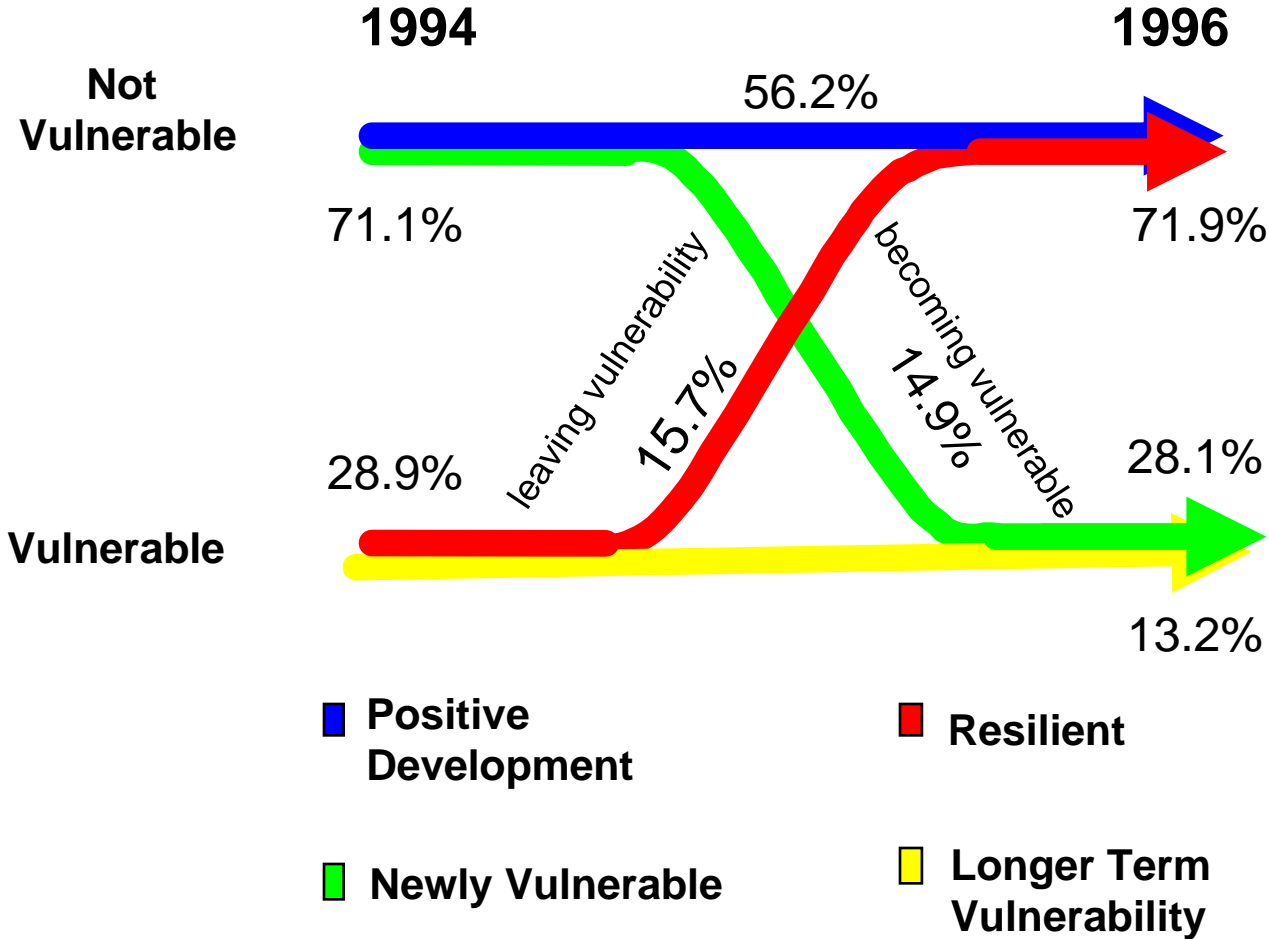
## Potential Risk Factors

- Single-parent family
- Low family income
- Male child

## Protective factors

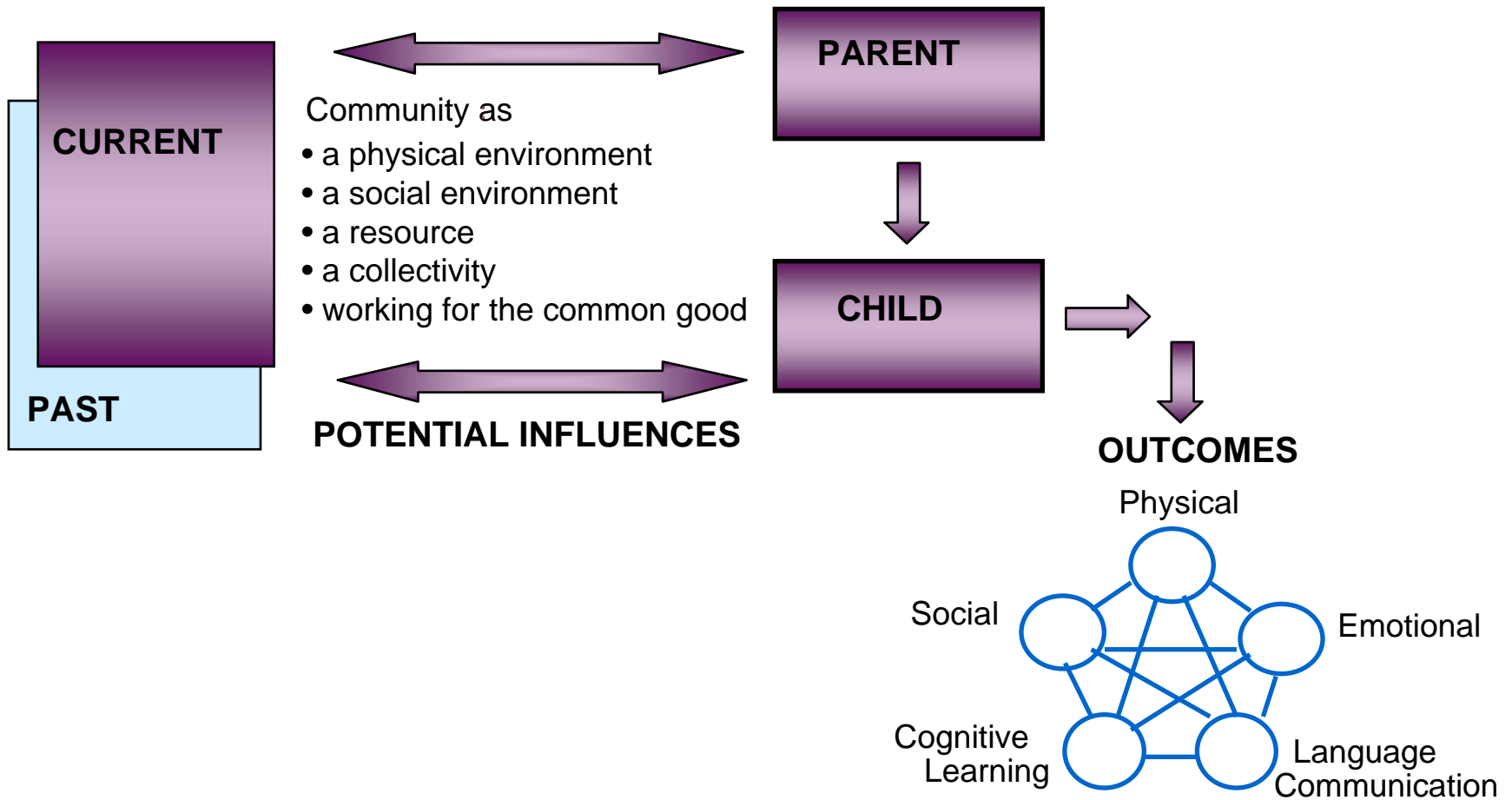
- Good parenting
- Higher level of mother's education

# Vulnerability is not a permanent state for most children



# Community Influences

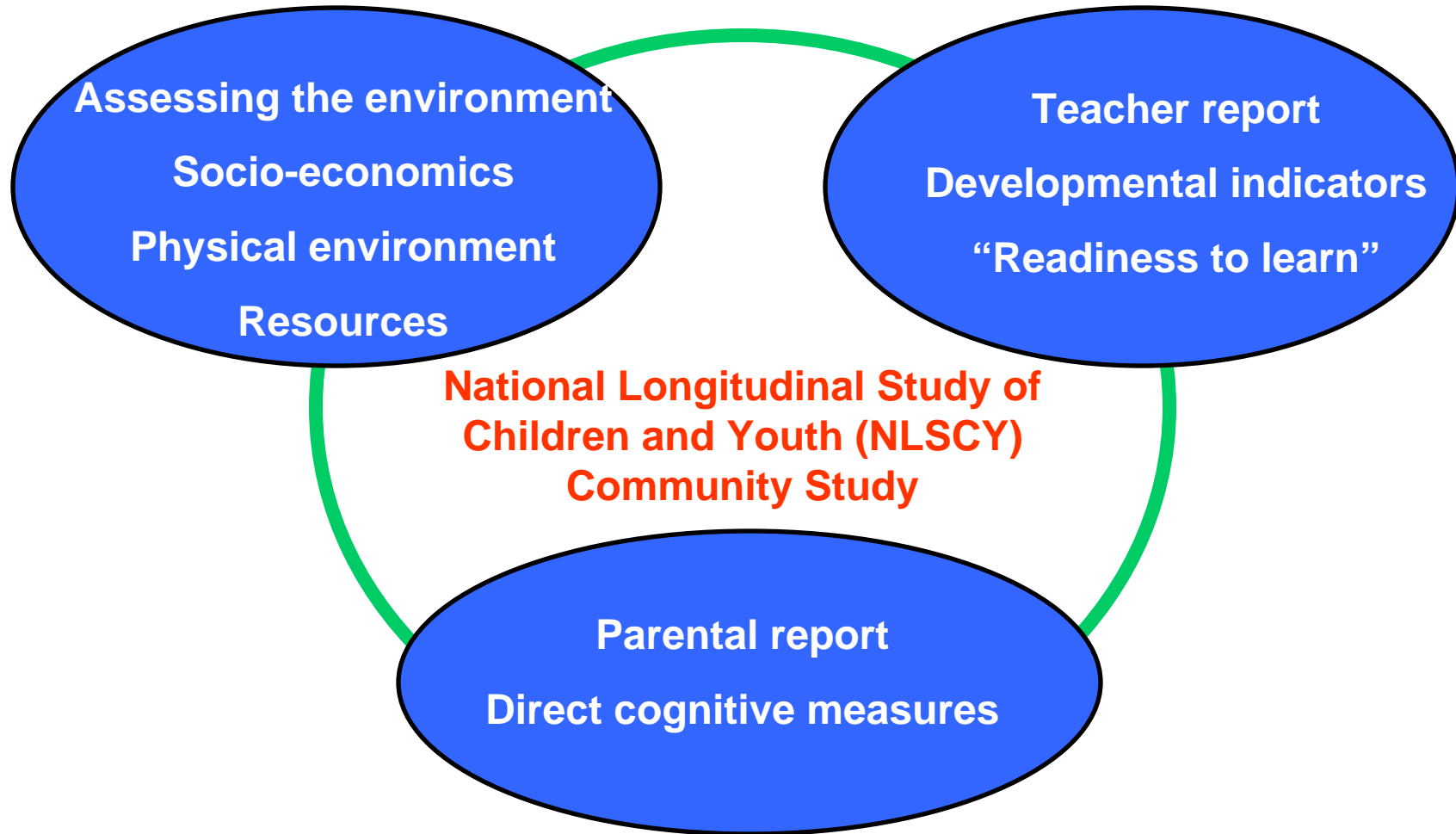
COMMUNITY:



# Measuring and Reporting Tools

**Community Mapping Study (CMS)**

**Early Development Instrument (EDI)**



# The EDI

## Background & Implementation in Niagara Falls

The EDI was developed by Dr. Dan Offord & Dr. Magdalena Janus at the Canadian Centre for Studies of Children at Risk (CCSCR), McMaster University



# **The Early Development Instrument (EDI)**

**Profiles early child development outcomes, or “readiness to learn”, in terms of preparedness for school.**

**Children who enter school ready to learn:**

- **have the ability to get along well with others;**
- **use basic coping strategies; and,**
- **are open to new experiences.**

**In short,**

**they are equipped to take advantage of the academic and social, opportunities that school presents.**

# The Importance of Being Ready

**Lack of readiness can have serious costs to society:**

- **increased government expenditures (special education services and grade repetition)**
- **lost government revenue due to students who leave high school without obtaining a diploma;**
- **decreased ability to be competitive in the global market; and provide essential services for a smooth functioning society.**

# The EDI

- **Reports on populations of children at the community level, based on five domains:**
  - ✚ **Physical Health and Well-being**
  - ✚ **Social Competence**
  - ✚ **Emotional Maturity**
  - ✚ **Language and Cognitive Development**
  - ✚ **Communication Skills and General Knowledge**

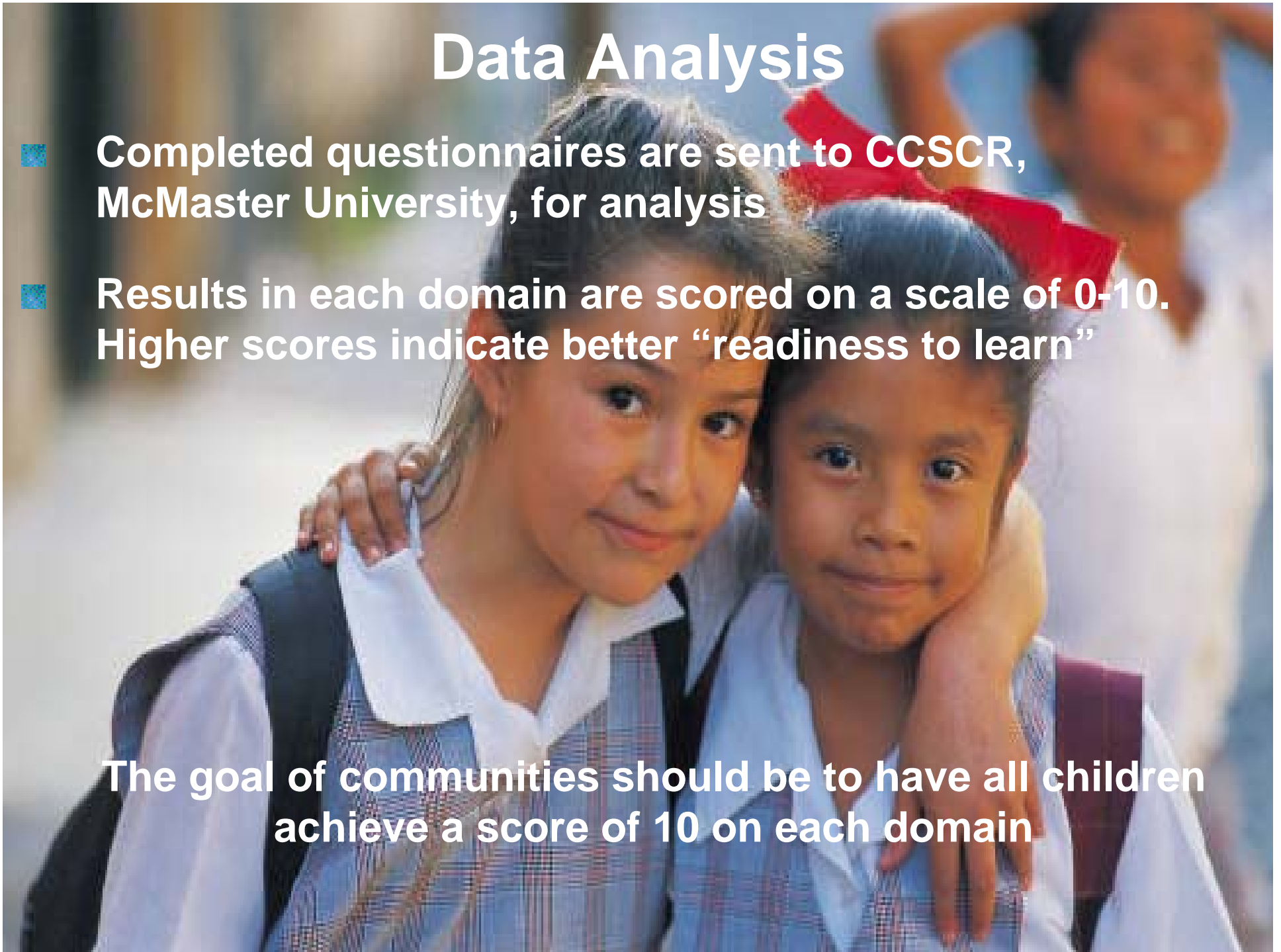


- **Teachers complete a checklist with students in mind – training and guide facilitate uniform interpretation**
- **All items are characteristic of children's observable behaviour in kindergarten**
- **There is no direct assessment**
- **Results are interpreted on a group level**
- **The EDI is not a diagnostic tool – individual results are confidential**
- **The EDI does not measure school or teacher performance**

# Data Analysis

- Completed questionnaires are sent to **CCSCR, McMaster University**, for analysis
- Results in each domain are scored on a scale of **0-10**. Higher scores indicate better “readiness to learn”

**The goal of communities should be to have all children achieve a score of 10 on each domain**



# Percentile Thresholds

- **CCSCR is working towards a national standard or benchmark**
- **Until then, population scores for each domain, from each site, are divided into percentiles to facilitate interpretation**
- **Percentile thresholds are relative and based on the distribution of scores within each site – profiling the development of children relative to their peers in the community**
- **Children who score at/below the 10<sup>th</sup> percentile based on their site's scores are considered to be at risk in terms of readiness to learn skills**

# Making Comparisons

- The EDI reports on populations rather than samples
- Scores reported are actual real averages - not estimates
- This supersedes a need for statistical comparison within the group and results of whole populations, such as neighborhoods, can be viewed alongside each other



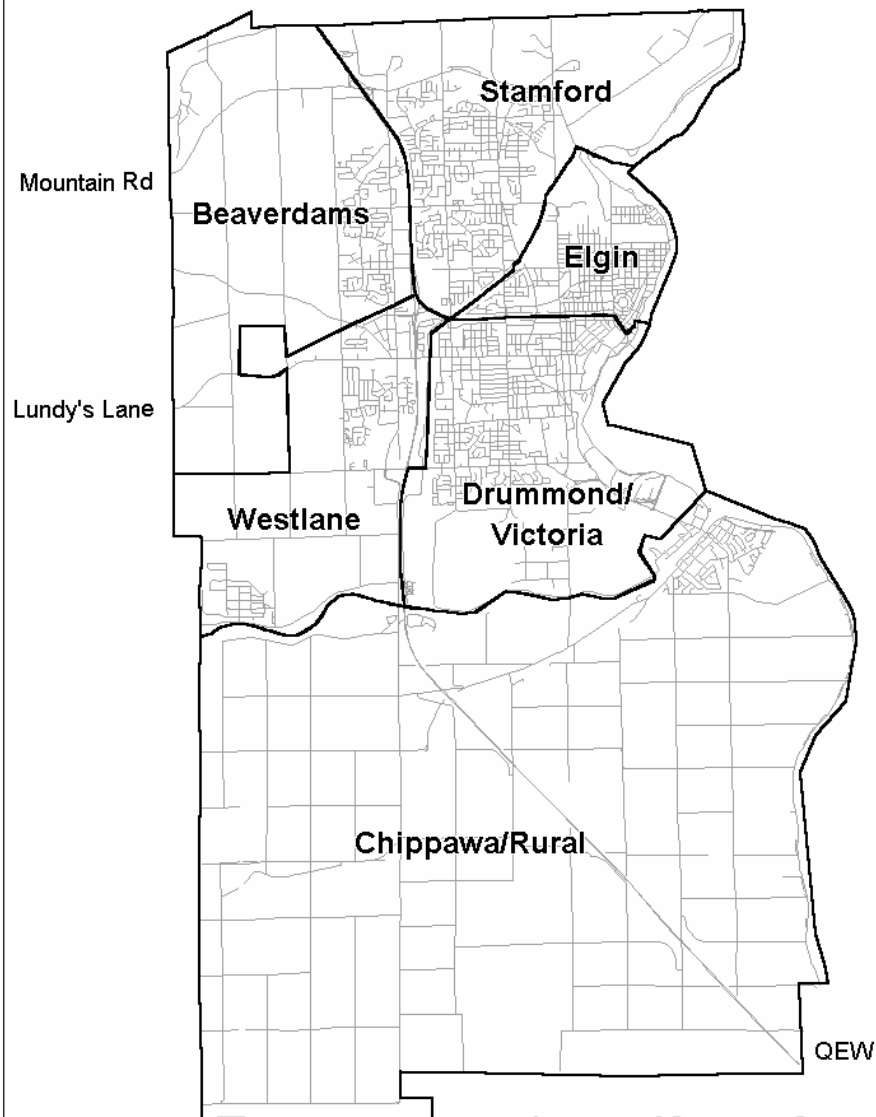
# The 2001 Cohort

- Provides a means of comparing children in Niagara Falls to other 5-6 year olds across Canada
- Results provided by CCSCR based on data from children across Canada who took part in the EDI during the 2000/2001 school year
- This group is not representative nor is it truly national
- In the absence of norms, CCSCR does recommend statistical comparison between this group and the city as a whole to show where overall strengths and weaknesses lie.

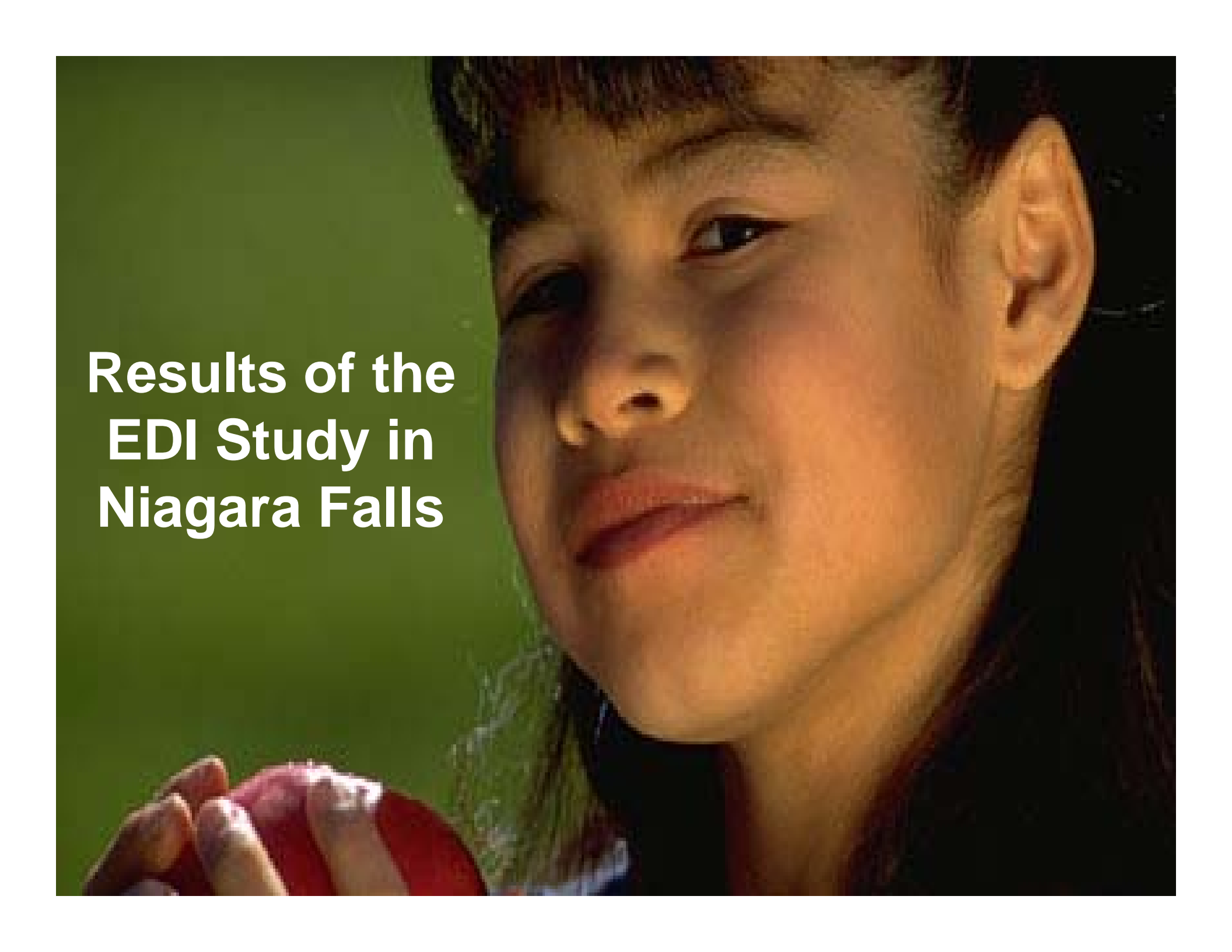
# Neighbourhood Results

- **CCSCR creates school-by-school and site reports, but recommends that results be presented at the neighbourhood level**
- **UEY Researchers consulted CCSCR regarding the manipulation of data to take results out of the school context and place them back in the community**
- **Neighbourhood study areas were defined in consultation with the Planning and Development Department of the City of Niagara Falls and the UEY advisory committees**

# Neighbourhood Study Areas



- **Beaverdams**
- **Chippawa/Rural**
- **Drummond/Victoria**
- **Elgin**
- **Stamford**
- **Westlane**



**Results of the  
EDI Study in  
Niagara Falls**



# The EDI in Niagara

## **EDI 2000/2001 Niagara Falls**

- 900 SK children
- 2 School Boards
- Canadian Cohort 25000+

## **EDI 2001/2002 Niagara Region**

- 4000 SK children
- 4 School Boards
- Canadian Cohort 35000+

## **EDI 2002/2003 Niagara Falls**

- 700 SK children
- 4 school boards
- Canadian Cohort 42000+

# Overall Results

**On average, Niagara Falls scored as well as, or better than the 2001 Cohort in all domains except Emotional Maturity, where Niagara Falls scored lower**

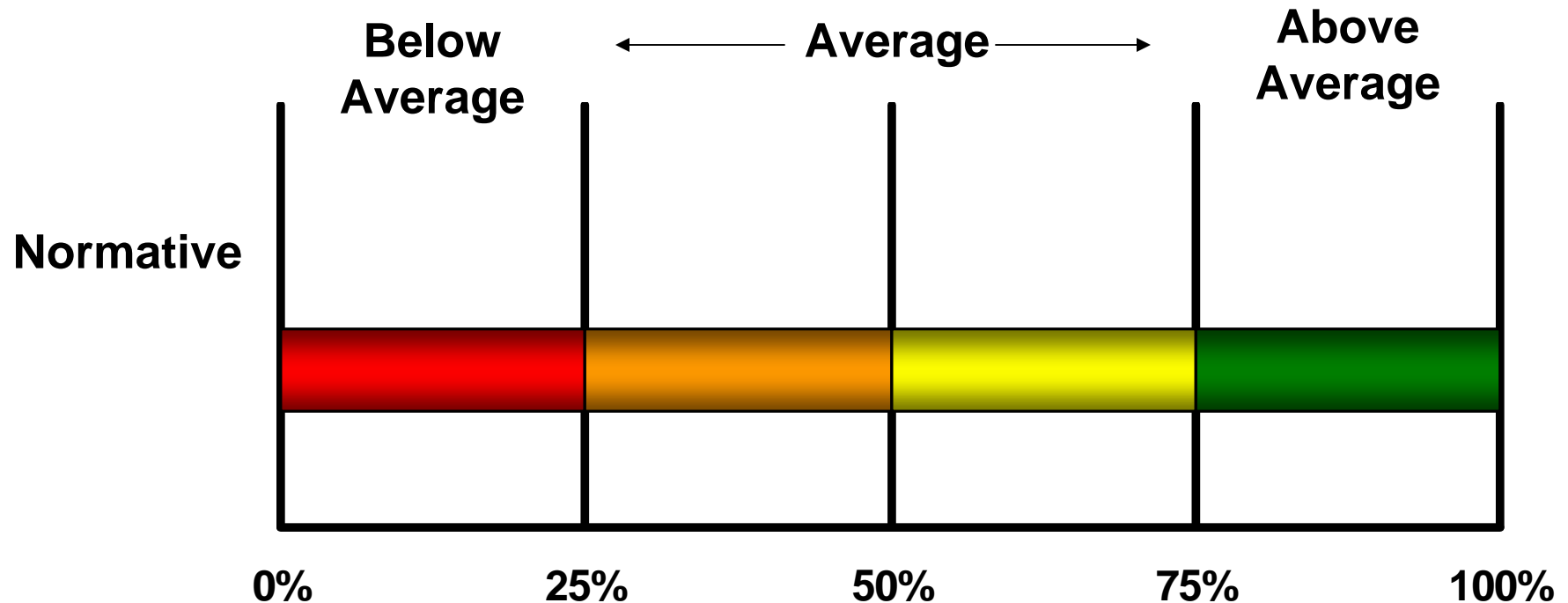


<b>EDI Domain</b>	<b>Average Scores</b>	
	<b>2001 Cohort</b>	<b>Niagara Falls</b>
<b>Physical Health &amp; Well-being</b>	8.77	8.78
<b>Language &amp; Cognitive Development</b>	8.28	8.29
<b>Social Competence</b>	8.32	8.14
<b>Communication Skills &amp; General Knowledge</b>	7.70	7.78
<b>Emotional Maturity</b>	8.04	*7.72

**Age range: 4.6 to 6.8 years; special needs excluded**

**\* Significantly lower;  $p < 0.05$**

# Distribution of Scores by Domain



The following slides show how neighborhood scores were distributed. The “normative” bar (above) shows what we would expect to see if the distribution of scores was normal. This can be used as a reference when looking at the actual distribution of scores

# Descriptive Profile – Physical Health

Excellent - above the 75<sup>th</sup> percentile, or best 25%:

*always physically ready to tackle school, generally independent with good or excellent motor skills.*

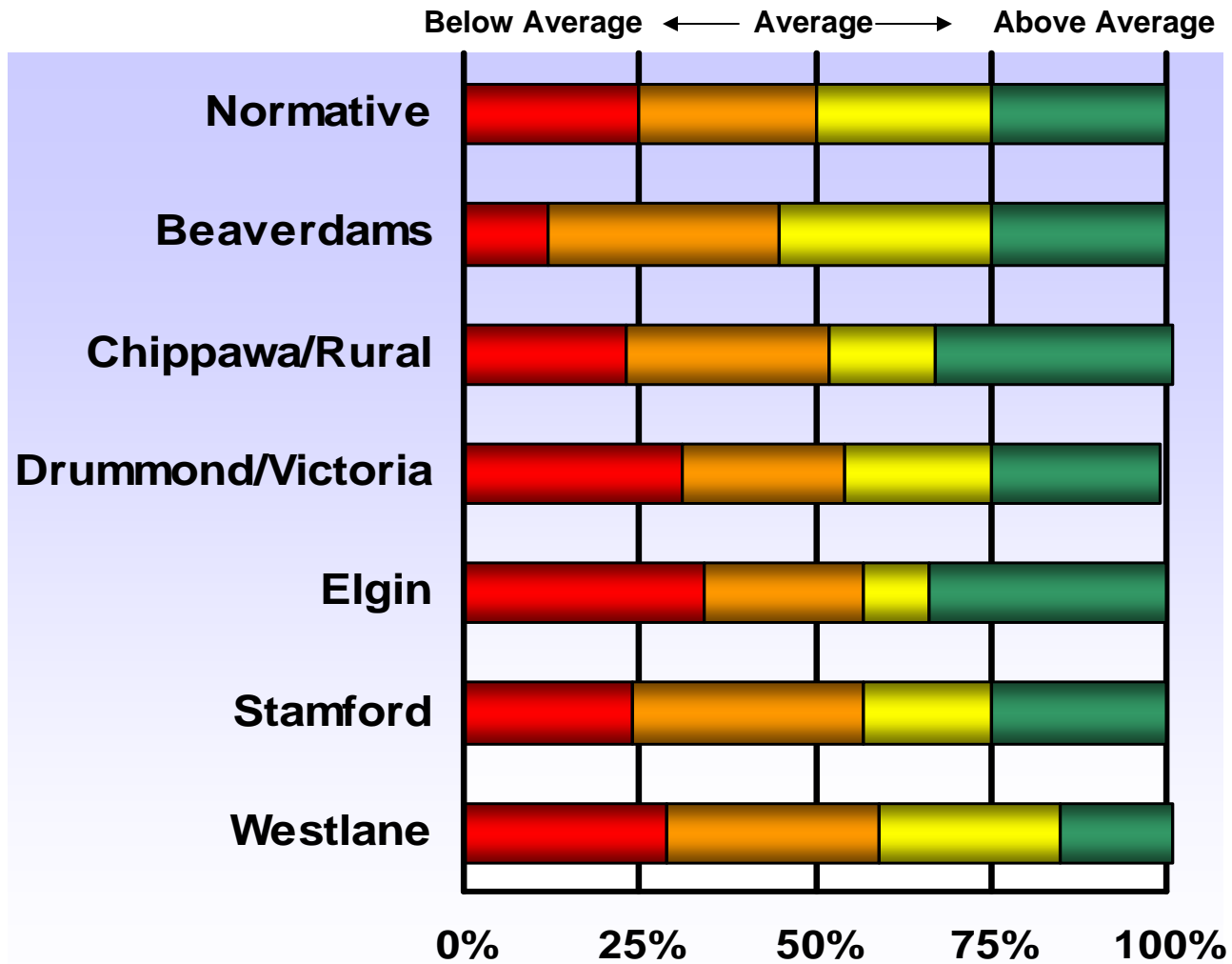
Poor - between the 10<sup>th</sup> and 25<sup>th</sup> percentile:

*mostly average fine and gross motor skills, occasional problems being prepared for school by being late or arriving hungry.*

Vulnerable - Below the 10<sup>th</sup> percentile or poorest 10%:

*average or poor fine and gross motor skills, sometimes tired or hungry, usually clumsy, occasionally still sucking thumb, flagging energy levels, average or poor overall physical development.*

# Physical Health & Well-Being



Items include:

- fine & gross motor skills
- daily living skills
- adequate energy levels
- preparedness for school (tired, late, hungry)

# Descriptive Profile – Social Competence

**Excellent - above the 75<sup>th</sup> percentile, or best 25%:**

*no problems getting along, working, or playing with other children, respectful to adults, self-confident, have no difficulty following class routines, capable of pro-social behaviour.*

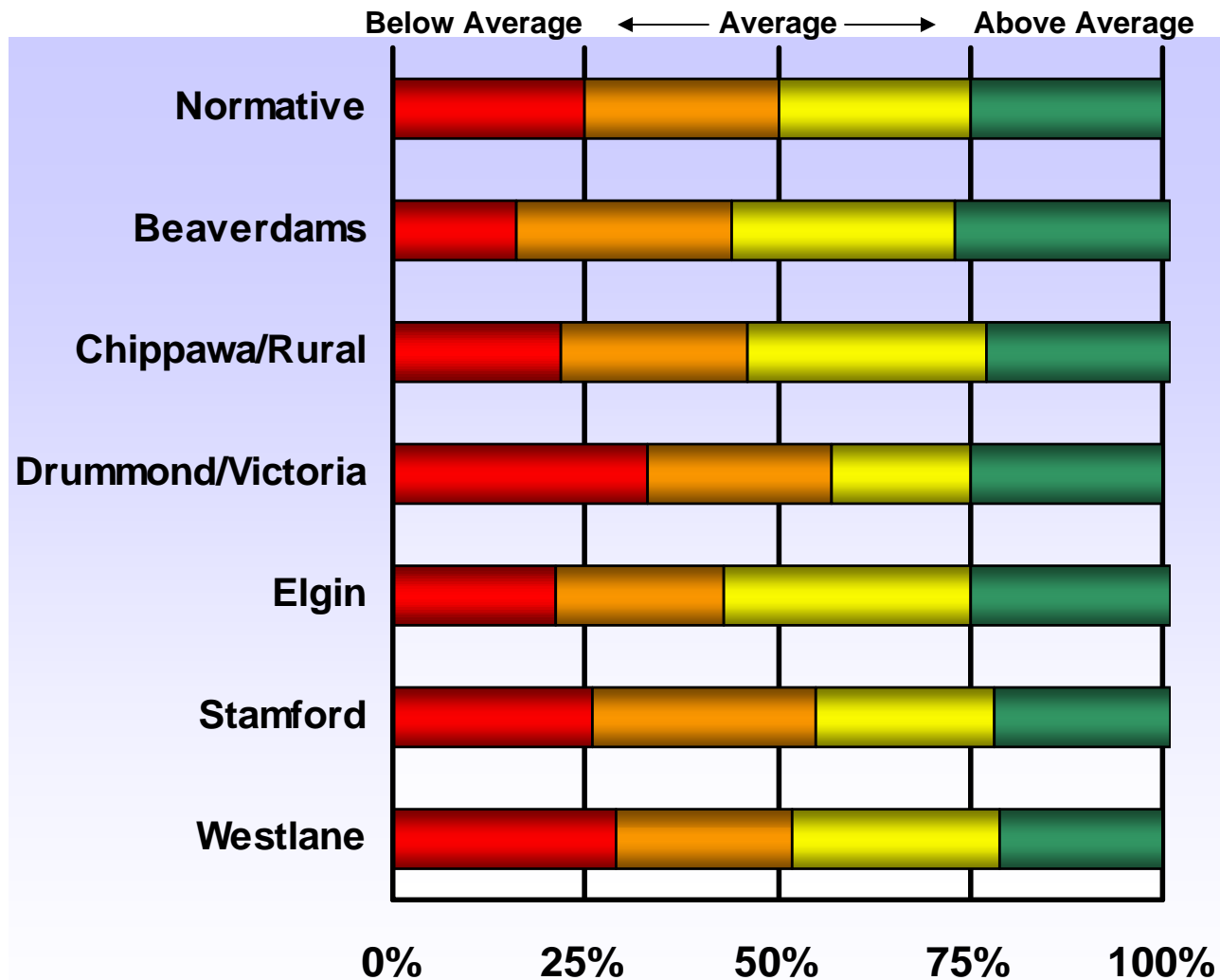
**Poor - between the 10<sup>th</sup> and 25<sup>th</sup> percentile:**

*average social skills, occasional problems getting along or cooperating with other children; following rules/directions; self-confidence; self-control; accepting responsibility; solving problems; working independently.*

**Vulnerable - Below the 10<sup>th</sup> percentile or poorest 10%:**

*average or poor social skills, regular serious problems cooperating, accepting responsibility for own actions; following rules/class routines. May have problems with respect for adults and children; self-confidence; self-control; adjustment to change. Usually unable to work independently.*

# Social Competence



Items include:

- curiosity and eagerness
- self control
- ability to follow rules
- ability to play/work with others
- respect for adults



# Descriptive Profile – Emotional Maturity

**Excellent - above the 75<sup>th</sup> percentile, or best 25%:**

*almost never show aggressive, anxious, or impulsive behaviour; good ability to concentrate, often helping other children.*

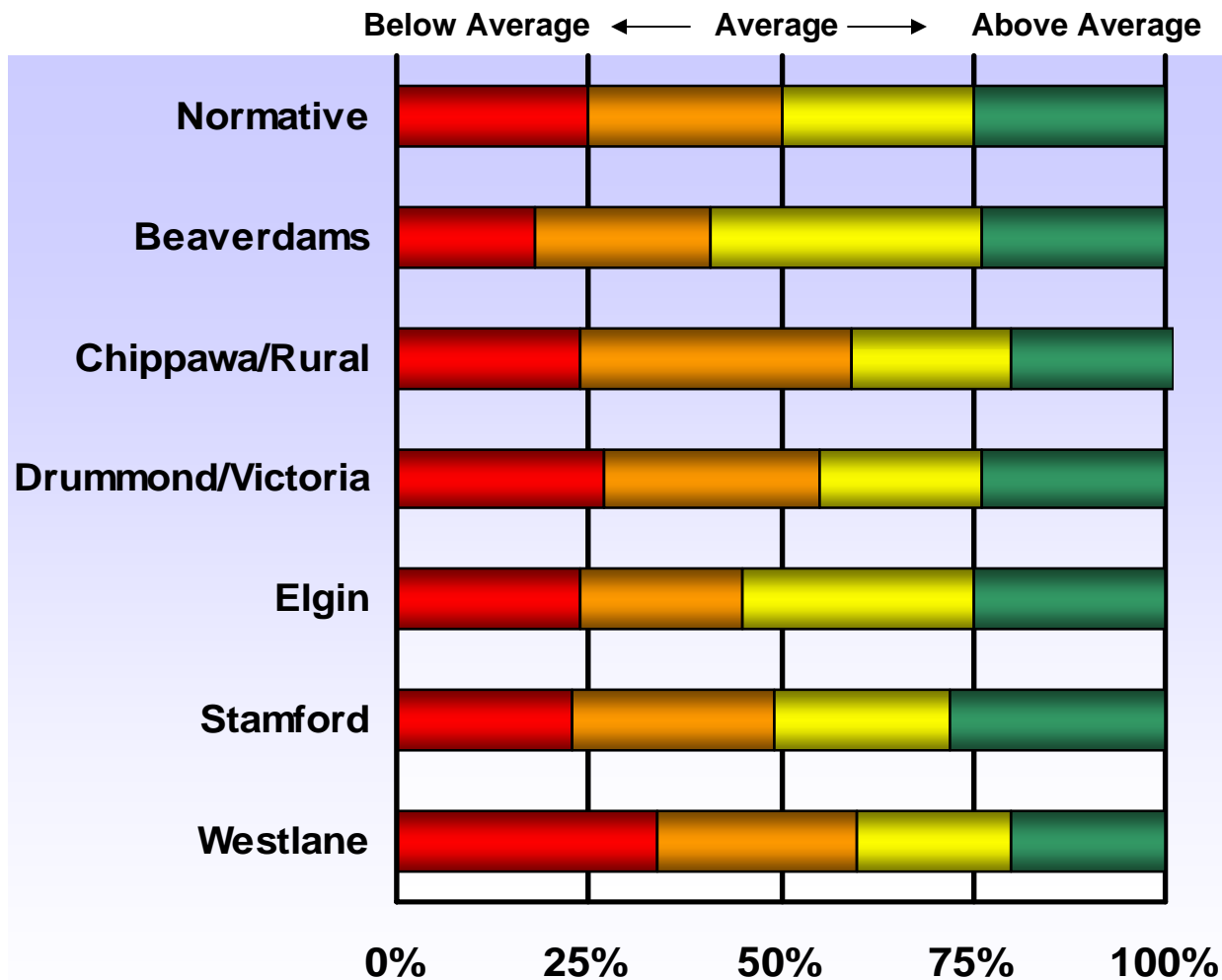
**Poor - between the 10<sup>th</sup> and 25<sup>th</sup> percentile:**

*occasionally disobedient, occasionally show aggressive behaviour, may be inattentive or easily distractible; fearful or worried; upset when left by caregiver and/or insensitive to other children's distress.*

**Vulnerable - Below the 10<sup>th</sup> percentile or poorest 10%:**

*regular problems managing aggressive behaviour, prone to disobedience, and/or easily distractible, inattentive and restless. Usually unable to show spontaneous helping behaviour towards other children, occasionally fearful/nervous, sometimes upset when left by caregiver.*

# Emotional Maturity



Items include:

- prosocial behaviour – helping, tolerance, and empathy
- aggressive behaviour
- anxiety
- hyperactivity, inattention, and impulsiveness

# Descriptive Profile - Language & Cognitive Development

**Excellent - above the 75<sup>th</sup> percentile, or best 25%:**

*interested in books, reading, writing, and maths. Capable of reading/writing simple and sometimes complex words; counting; recognizing numbers and geometric shapes.*

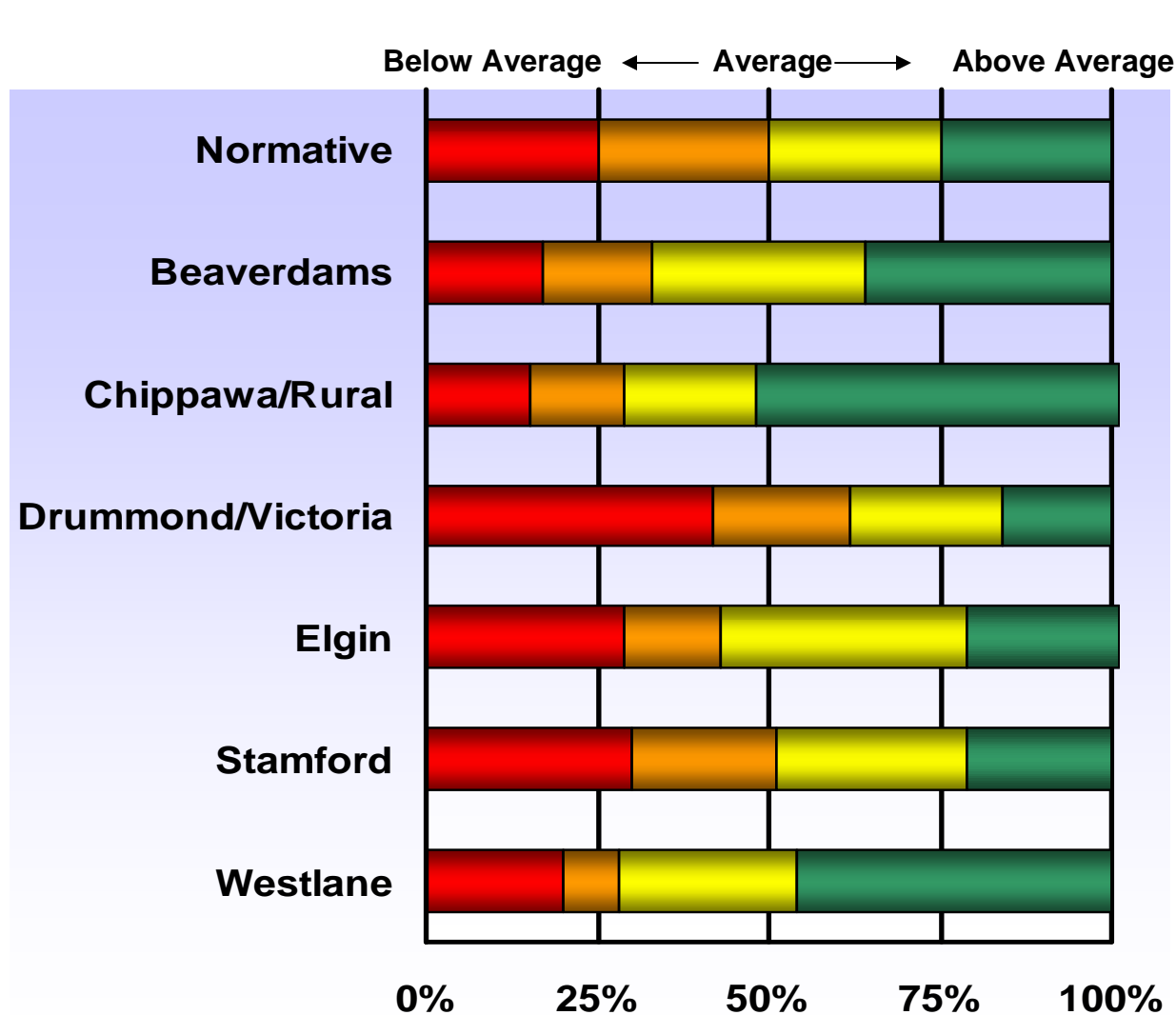
**Poor - between the 10<sup>th</sup> and 25<sup>th</sup> percentile:**

*usually cannot read simple words, not very interested in numbers, reading/writing (yet often able to write own name), often unable to attach sounds to letters, may have occasional problems remembering.*

**Vulnerable - Below the 10<sup>th</sup> percentile or poorest 10%:**

*problems with reading/writing and numeracy, unable to read/ write the simplest words, uninterested and often unable to identify letters and attach sounds (yet majority can write their own name), have difficulty remembering; counting to 20; recognizing and comparing numbers. Usually not interested in numbers.*

# Language & Cognitive Development



Items include:

- interest in books and reading
- interest in simple math activities
- numeracy skills
- ability to understand similarities and differences
- ability to recite information from memory

# **Descriptive Profile - Communication & General Knowledge**

**Excellent - above the 75<sup>th</sup> percentile, or best 25%:**

*good or excellent communication skills, can tell a story and communicate with both children and adults, no problems with articulation, usually have English as their first language.*

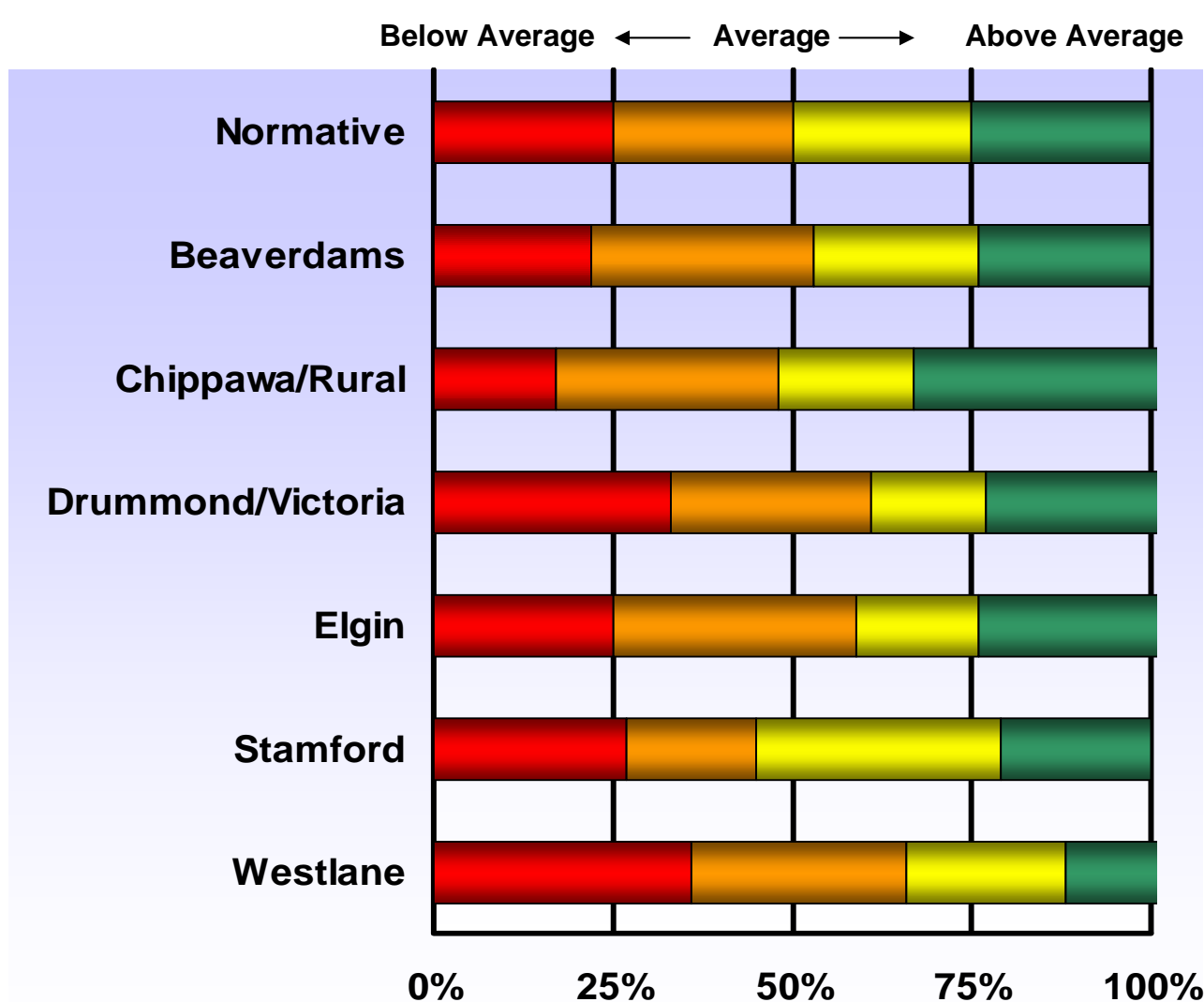
**Poor - between the 10<sup>th</sup> and 25<sup>th</sup> percentile:**

*good or average communication skills, average articulation, limited ability to participate in play involving the use of language.*

**Vulnerable - Below the 10<sup>th</sup> percentile or poorest 10%:**

*poor or average communication skills and articulation, (at best) average command of English, difficulties talking to others; understanding and being understood, typically have poor general knowledge.*

# Communication Skills & General Knowledge



Items include:

- ability to communicate needs and understand others
- clear articulation
- active participation in story-telling
- age-appropriate interest and knowledge

# Children at Risk in Terms of Readiness Skills



Children who score at/below the 10<sup>th</sup> percentile are considered to be at risk in terms of readiness to learn skills

- Scoring low on one domain does not necessarily indicate that a child will have difficulty at school
- Scoring low on two or more domains increases the risk of later difficulty at school

**Approximately 28% of children in Niagara Falls were at risk in terms of readiness to learn at school**

**(compared to 26% of children in the 2001 Cohort)**



**11% scored at/below the 10<sup>th</sup> percentile on one domain**

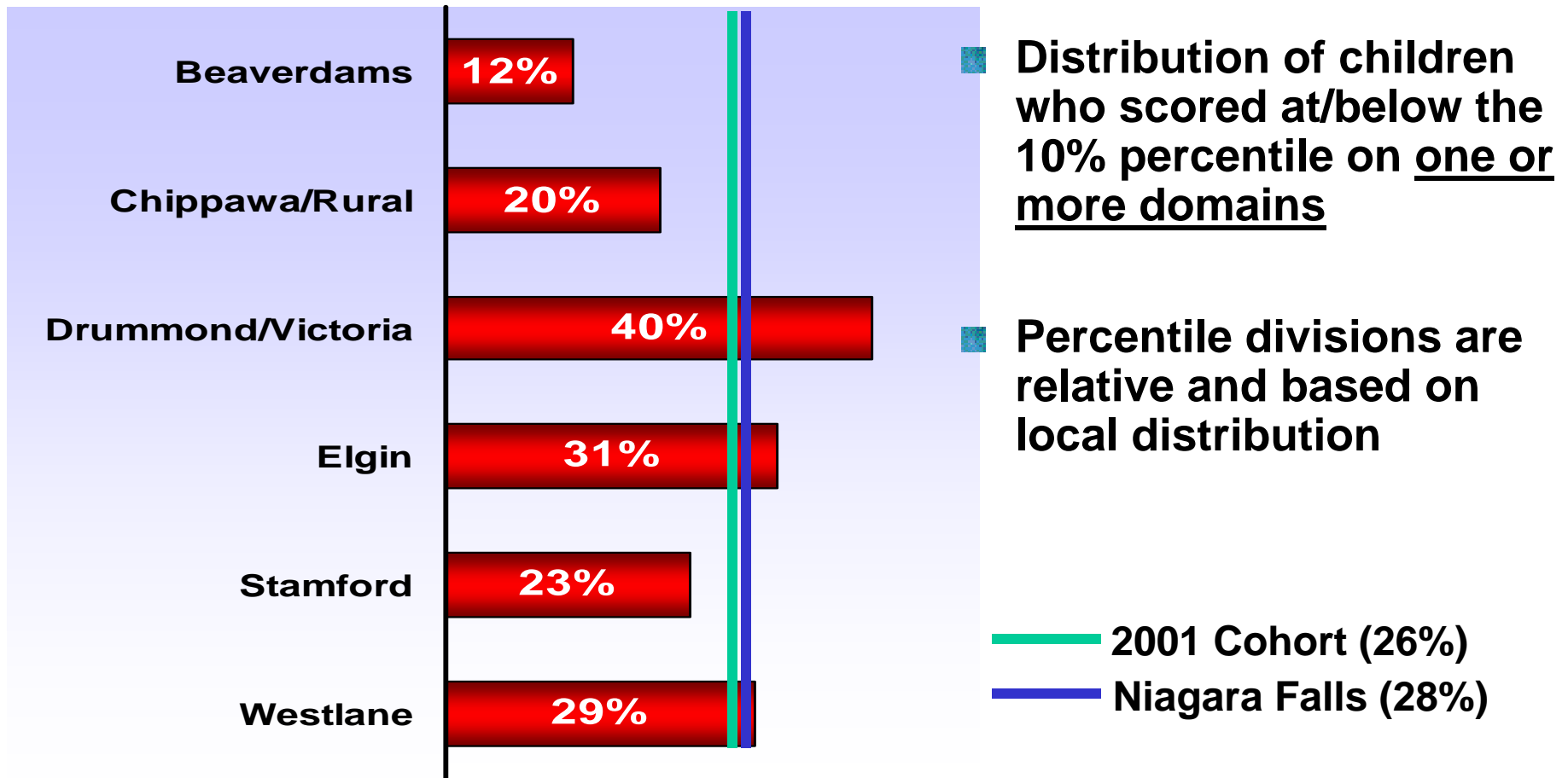
**(compared to 13% in the Cohort)**

**17% scored at/below the 10<sup>th</sup> percentile on two or more domains**

**(compared to 13% in the Cohort)**



# Children at Risk by Neighbourhood



# Mapping the Community: the Niagara Falls CMS

Examines socio-economics, physical environments and the location of resources in relation to readiness skills



# **The Community Mapping Study (CMS)**

**Examined each of the 6 neighbourhoods in terms of:**

- **socio-economic environment**
- **physical environment; and**
- **community resources**

# Social Index Indicators

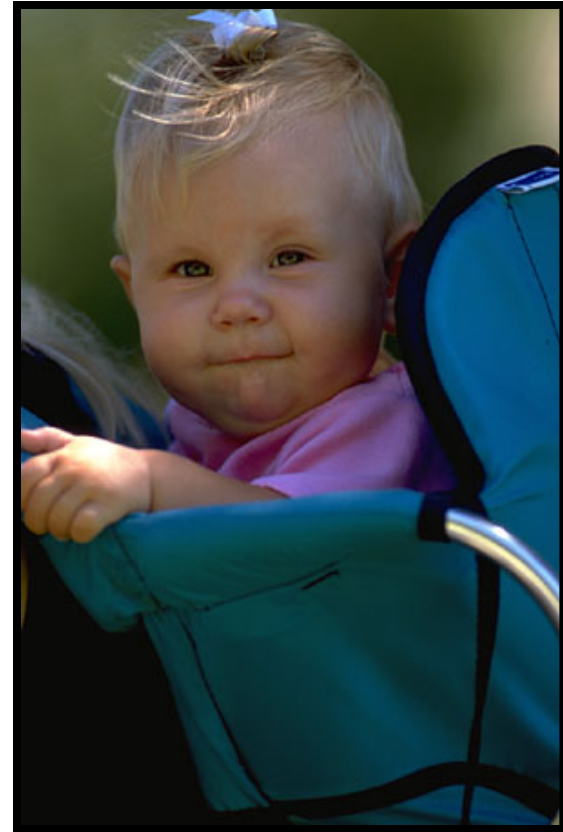
- **Low income status**
- **Employment rate**
- **Education level**
- **Lone parent household**
- **Recent immigration (since 1991)**
- **Home ownership**
- **Proportion of population speaking neither official language**
- **Total neighbourhood income from transfer payments**
- **Mobility rate (in and out of neighbourhood)**



- **78% of Niagara Falls’ “high risk” EAs are located in the 3 neighbourhood identified by the EDI as having increased needs in terms of readiness to learn skills. (Westlane, Elgin & Drummond/Victoria)**

- **57% of Niagara Falls’ 0-6 population live in these neighbourhoods**

**(Social Index provided by Statistics Canada based on 1996 Census data)**



# **The National Longitudinal Study of Children and Youth (NLSCY) Community Study**

- **90 minute Parental interviews (telephone)**

**How family, friends, schools and  
community influence children's physical,  
behavioural and learning development**

- **Direct cognitive assessments of children  
(PPVT-R), Who Am I?, Number Knowledge  
Assessment**

# Protective Factors in Niagara Falls

<b>Parenting</b>	<b>Positive parenting style and high parental engagement</b>
<b>Residential stability</b>	<b>The majority of families owned their home and the mobility rate was below national average</b>
<b>Employment</b>	<b>Low at 7.6%, compared to the national average of 10%</b>
<b>Use of Resources</b>	<b>Higher than national average. Resources were concentrated in areas of need.</b>

# Risk Factors in Niagara Falls

<b>Income</b>	\$5,700 below national average. 55% of children lived in areas where the average income was below LICO
<b>Family Status</b>	28% of families lone parent (national average 22%)
<b>Education</b>	38% of pop. 15+ without high school diploma (national average 34.8%)
<b>Hyperactivity</b>	Approximately 1 ½ times national norm (NLSCY parental report)



A young child with light hair, wearing blue shorts, is sitting on a sandy beach. The child is focused on building a sandcastle, with their hands on the sand. The background shows the ocean waves and a bright sky. The text "Emerging Patterns" is overlaid on the right side of the image.

# Emerging Patterns

# Emerging Patterns

**78% of Niagara Falls' "high risk" EAs are located in the three neighbourhood identified by the EDI as having increased needs in terms of readiness to learn skills. (Westlane, Elgin & Drummond/Victoria)**

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**57% of Niagara Falls' 0-6 population live in these neighbourhoods**

**Of this 57%, the majority of children (70%) are living in areas considered to be at "higher risk"**

**(Social Index provided by Statistics Canada based on 1996 Census data)**

# 2002 OEY Preview

## EDI Mean Scores for Niagara

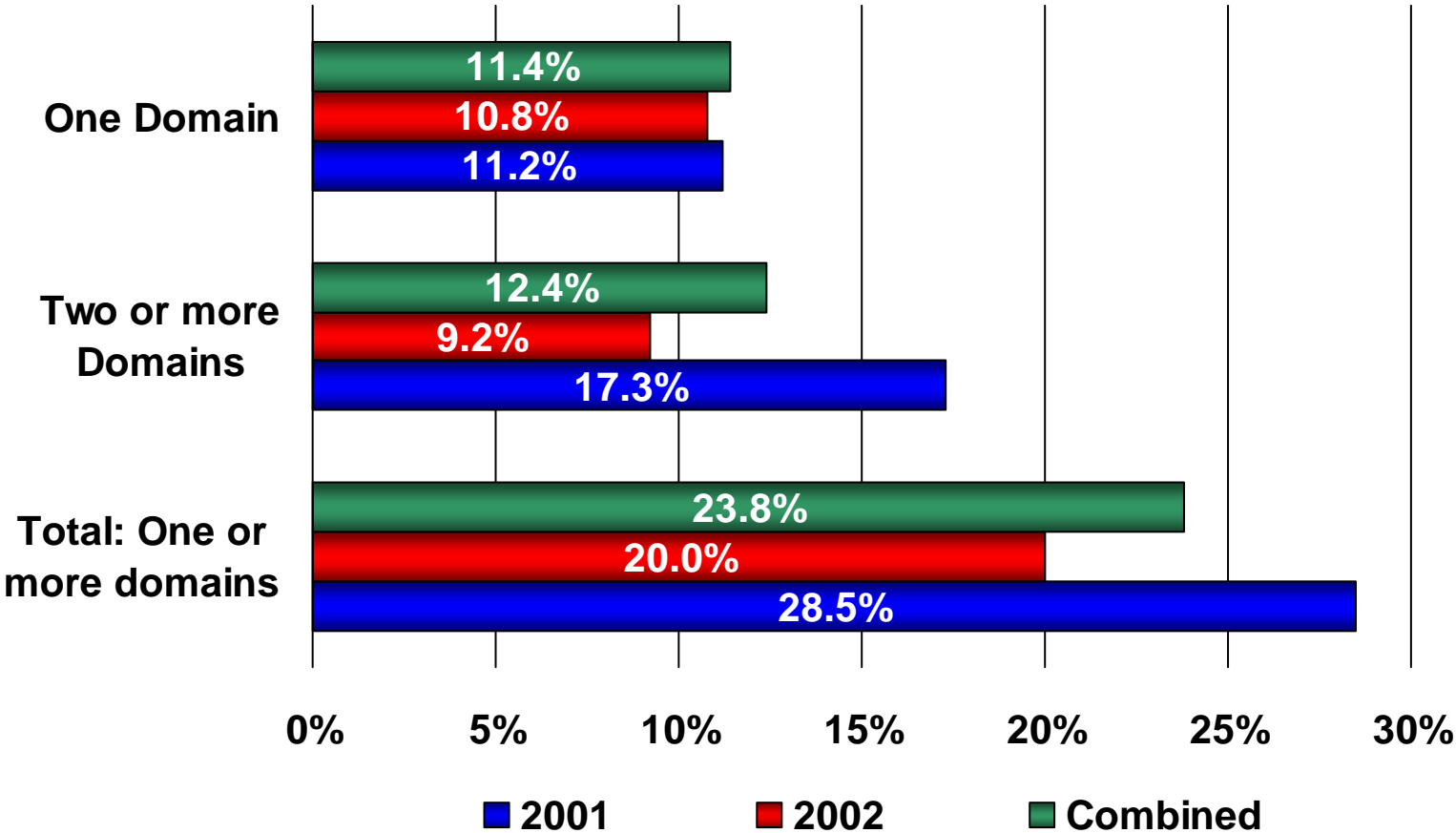
EDI scales	Mean score		
	2001	2002	Combined
Physical Health & Well-being	8.78	8.89	8.78
Language & Cognitive Development	8.29	8.71	8.42
Social Competence	8.14	8.44	8.21
Communication & General Knowledge	7.78	8.01	7.82
Emotional Maturity	7.72	8.04	7.81

# 2003 Emotional Maturity Sub-scales

N=701

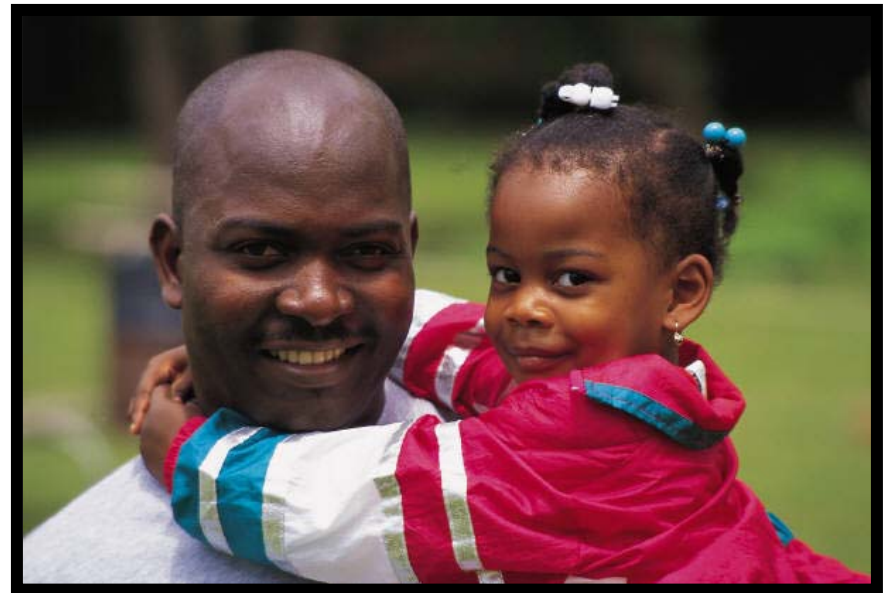
Sub-scale	23% <u>not</u> ready	Description
<b>Pro-social and helping behaviour</b>	17%	<b>never or almost never show helping behaviour, do not help someone hurt sick or upset, offer to help or invite bystanders to join in</b>
<b>Anxious and fearful behaviour</b>	<2%	
<b>Aggressive behaviour</b>	6%	
<b>Hyperactivity and inattention</b>	13%	<b>Show most hyperactive behaviours: have difficulty settling at activities, are restless, distractible, impulsive, fidget</b>

# Proportion of Niagara Falls Children Scoring at/below the 10<sup>th</sup> Percentile



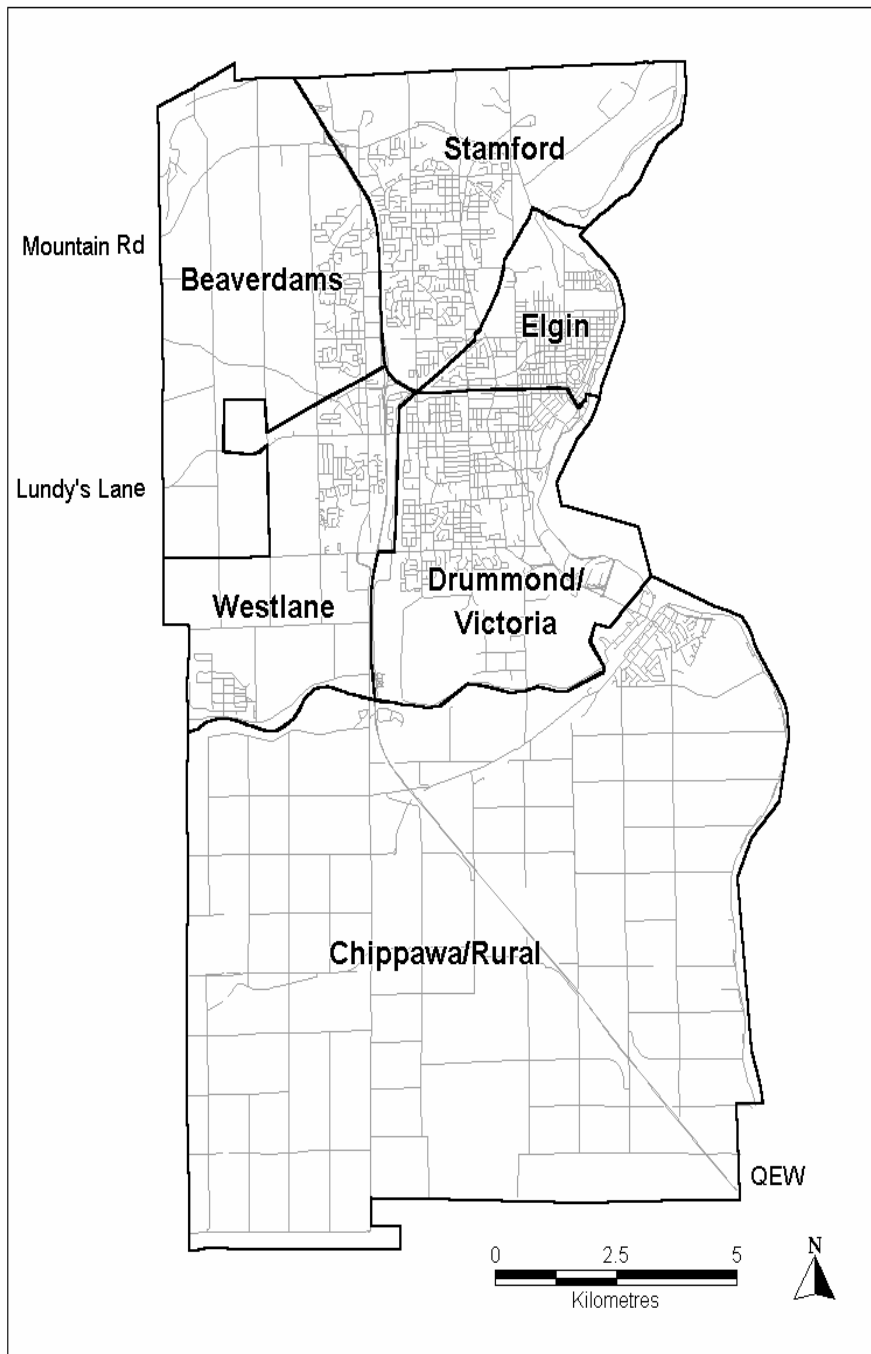
# Next Steps

- Repeating measures to build the data base
- Looking for patterns that will generate questions and create meaning for the data in the community

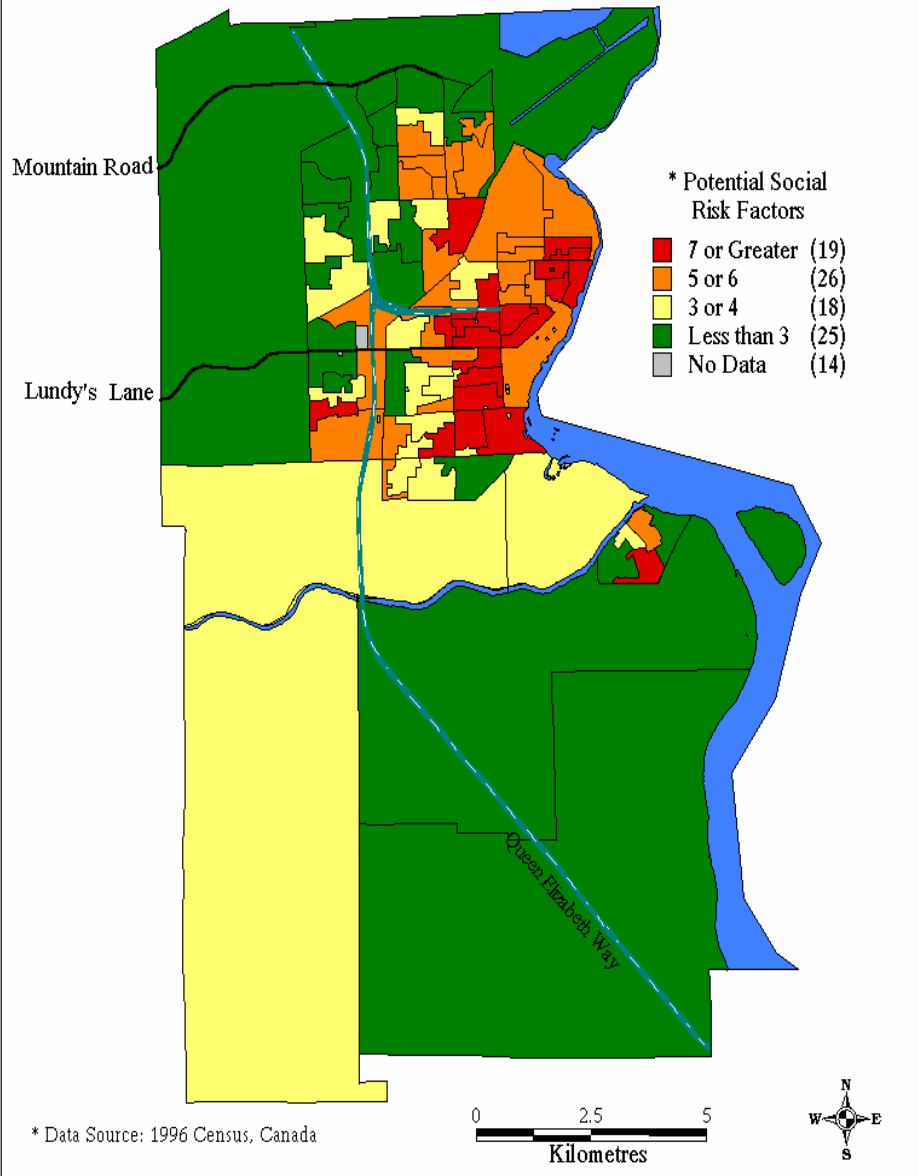




# Samples of Community Maps



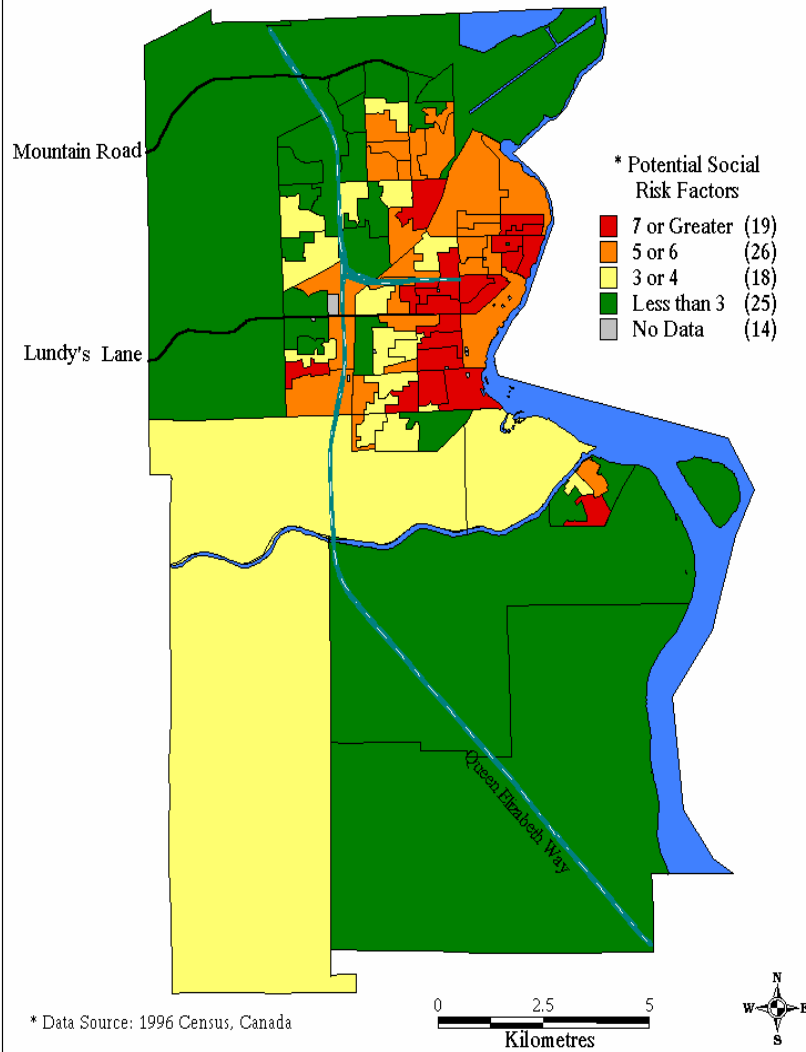
**Map 11: Number of Potential Social Risk Factors in Niagara Falls**



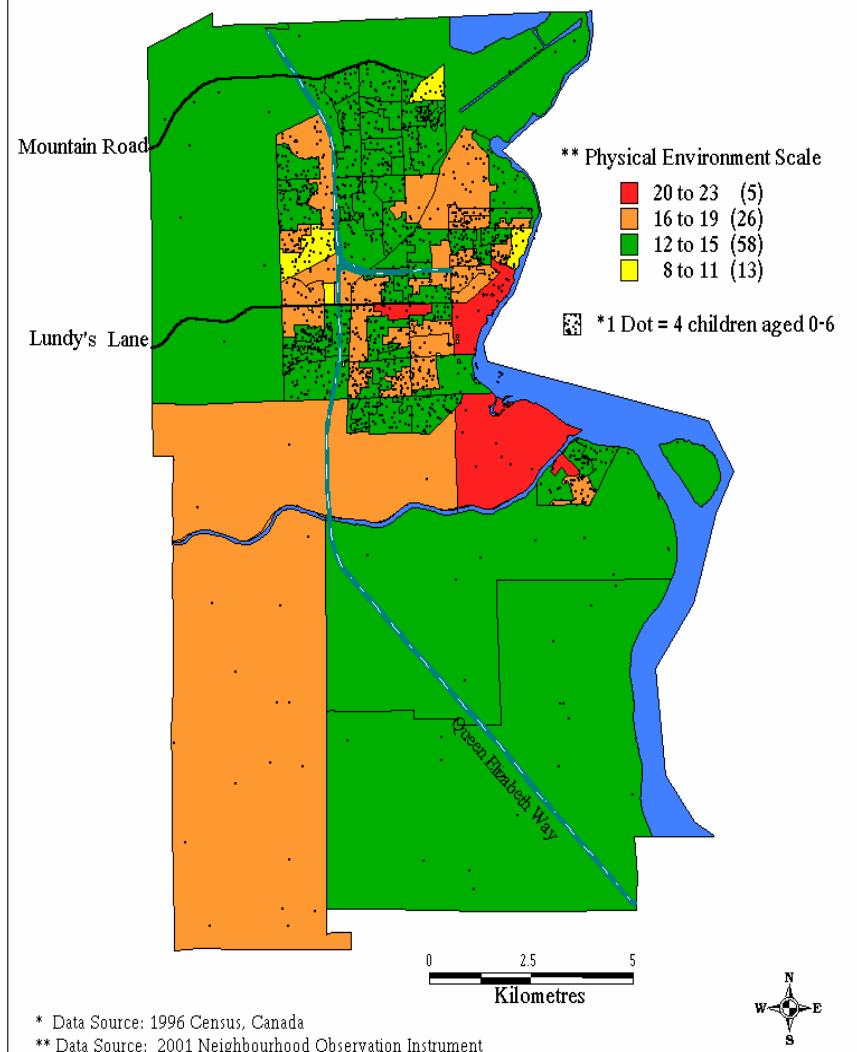
\* Data Source: 1996 Census, Canada



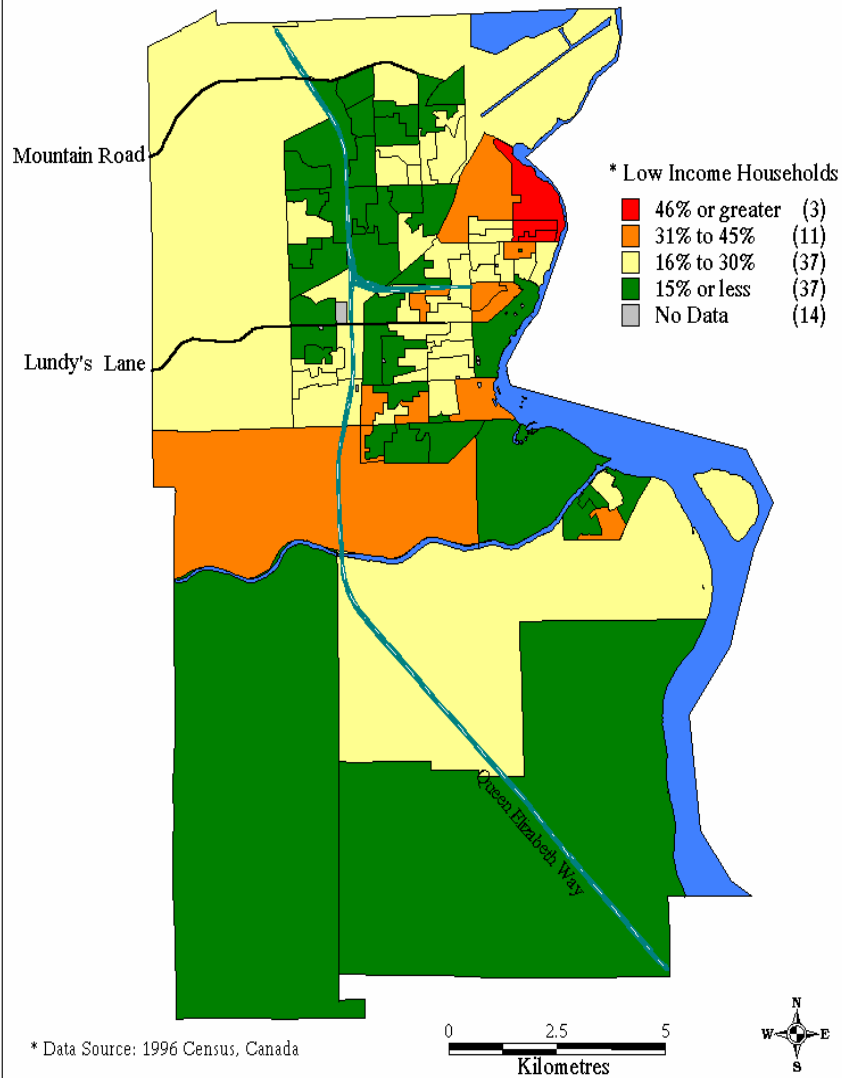
**Map 11: Number of Potential Social Risk Factors in Niagara Falls**



**Map 14: Physical Environment Index Relative to Location of Children Aged 0-6**



### Map 7: Proportion of Households Below the Low Income Cut-Off



### Map 23: Children Aged 0-6 and Location of Breakfast Programs

