

Report on the Victoria Early Childhood Mapping Project

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A. BACKGROUND

The Study Area

The study area consists of the Victoria Census Metropolitan Area and the Southern Gulf Islands. The area had a total population of 335,885 in 2001, with 14,185 children aged 0-4 (comprising 4.2% of the total population). Nationally, children aged 0-4 make up 5.4% of the total population.

The Neighbourhoods

The ECC coalition, school districts, MCFD, and the UBC HELP team, based on several criteria, defined a total of thirty-seven neighbourhoods. First, because EDI data could not be presented for areas where there were results for fewer than forty kindergarten children, neighbourhoods vary in size and total population because of the distribution of kindergarten children. Second, because census data for Victoria was available in the form of Census Tracts, neighbourhoods were required to follow 2001 Census Tract boundaries. In cases which there were fewer than forty children tested for the EDI within a Census Tract, Census Tracts were merged, taking into consideration the following factors: natural neighbourhoods, municipal boundaries, school districts, major roads, geographic areas, and socio-economic status (average household income). There is one exception to this, in the Millstream-Atkins area. This is an area of very rapid growth, particularly for young families. Much of this growth has occurred since the 2001 Census was carried out. The 2001 Census tracts do not accurately reflect this new growth, and therefore three neighbourhoods were created from two Census Tracts for the purpose of EDI reporting: Highlands, Millstream and Atkins.

For the Southern Gulf Islands, which are not part of the Victoria Census Metropolitan Area, no Census Tracts exist. Neighbourhoods therefore follow Census Subdivisions for this area. There were fewer than forty EDI scores reported for each of the Islands with the exception of Saltspring Island. For this reason, EDI maps will not break down the Gulf Islands, but socio-economic maps will have two neighbourhoods for this area, corresponding with Census Subdivisions. The EDI will be completed on the 2003/04 kindergarten students for the Gulf Islands, allowing for a larger sample size and better break down in the next year.

B. RESULTS OF THE EARLY DEVELOPMENT INSTRUMENT

In February 2003 the EDI was completed by all Kindergarten teachers in School District 61 (Victoria), School District 62 (Sooke), School District 63 (Saanich), and School District 64 (Gulf Islands) for a total of 2,325 EDI respondents. Results are presented here according to the community of residence of the child. They are reported as average developmental levels, as well as the proportion of “vulnerable” children, those who score on the lowest 10th percent in any one of the scales. Background to the EDI is provided in Appendix A.

Neighbourhood Differences in Victoria Children’s School Readiness

Proportion Vulnerable Children by neighborhood

The first five maps of this chapter show the proportion of children living in each neighbourhood that fell into the bottom 10% of Victoria scores on each of the developmental dimensions assessed on the Early Development Instrument (EDI). The bottom 10% is used here as a cut-off for vulnerability status, with those in the bottom 10% said to be “at risk” in terms of school readiness for the given developmental domain. If “all things were equal”, 10% of children in each neighbourhood would fall into the vulnerable category but as demonstrated by the maps, this is not the case. The between neighbourhood differences are in fact very large: for the language and cognitive development scale, 37% of children in the highest risk neighbourhood fell into the vulnerable category, while in the lowest risk neighbourhood, no children were identified as vulnerable; for physical health and well-being, the range was 0 – 29%; for social competence, the range was 0 - 43%; for emotional maturity, the range was 0 - 37%; and for communication skills and general knowledge, the range was 0 - 43%. In other words, there are large and consistent differences in developmental vulnerability across Victoria’s neighbourhoods, with the greatest concentration of vulnerability being in the Esquimalt, Fernwood, and Keating neighbourhoods. The greatest *numbers* of vulnerable children, however, are spread across the study area. This highlights the importance of a universal approach to family support programs.

Average Early Childhood Development Scores

The next five maps show the neighbourhood average scores for the five scales of the EDI. These show a similar pattern, but with some important refinements. Those neighbourhoods that emerged with high average scores also had relatively low proportions of vulnerable children on the corresponding domain, as indicated by the previous set of maps. Stated otherwise, there are no neighbourhoods with high average scores that also had a high proportion of children in the vulnerable category. What this seems to indicate is that there is a very important aggregate component to children's development, such that neighbourhoods with high average levels of development buffer the developmental risks of those who are potentially vulnerable, and pull them along somehow. An analogy could be made here to the example of cholesterol. If there is a high fraction of people who need to be treated for cholesterol in a community, one strategy is to target and treat them on an individual basis. An alternate approach would be to modify the overall food environment to the point at which the distribution of cholesterol in the population is shifted downward. In doing so, the fraction of people who are in the 'at risk' group automatically decreases. Bringing it back to child development, this suggests that having a positive and nurturing overall *climate* for development creates a buffering effect, as captured by the maxim that "a rising tide raises all boats".

Consistent with the above, most of those neighbourhoods with low average developmental scores also have high proportions of vulnerable children. These may be thought of as the high-risk neighbourhoods. However, there is an intermediate group of neighbourhoods with low average developmental scores that do *not* have high proportions of developmentally vulnerable children. This pattern suggests that these communities are somehow mitigating what otherwise might become developmental vulnerabilities. It is important for us to understand how this is taking place, so that we can build and learn from supportive neighbourhoods.

It is these patterns of neighbourhood variation in children's school readiness that represent the central set of observations that must be understood and explained. The patterns themselves are summarized in the map showing the proportion of children living in each neighbourhood that were vulnerable on at least one subscale of the Early Development Instrument. As illustrated in this map, between neighbourhood differences are nearly ten-fold, with a neighbourhood range of 6% to 58% in terms of the proportion of vulnerable children. This may be thought of as 'the difference that makes a difference.'

The principal objective of bringing the issue of early child development into the public realm should be to reduce this gradient, such that, in 3 or 5 or 10 years time, repeated EDI assessments on kindergarten children will show much smaller neighbourhood differences, with large gains in the high risk neighbourhoods, and fewer at risk children in all neighbourhoods.

C. WHERE DO CHILDREN AGED 0 TO 4 LIVE?

Proportion Population Aged 0-4 by Census Tract

This map shows the distribution of population aged four and younger across the Victoria area as a proportion of the total population, with total numbers of children aged 0-4 (up to a child's fifth birthday) labeled by neighbourhood. Children were particularly concentrated in areas West of the Pat Bay Highway and the West Shore. Royal Roads has the highest proportion of children aged 0-4 (12% of total population). James Bay, Fairfield, Downtown and Cordova Bay have the lowest concentration of children aged 0-4 (less than 3% of total population). The highest numbers of children 0-4 are in Carey-Glanford (1020 children) and Millstream (715 children). The red dots overlaid represent the elementary schools that took part in the EDI in February 2003.

Notes on the Data:

Data Source: Statistics Canada, 2001 Census of Population, Area Profile

According to the 2001 Census Dictionary, the map for "0-4" refers to the age at last birthday (as of the census reference date, May 15, 2001). This variable is derived from date of birth.

The **Parks and Open Space** overlay shows that there is a great deal of green space throughout the CRD, particularly on the Peninsula and to the West. This overlay also suggests high density of residents (and children) in the West Shore area. Green space is important for early childhood development, particularly areas with vegetation.

The presence of good parks and play spaces in children's neighbourhoods has been linked to increased participation rates in supervised and unsupervised sports and arts activities (Connor, 2001). The kind and amount of vegetation in a play area is also important; studies have found that children are more likely to play in areas of higher vegetation and that more creative forms of play occur in areas with greater vegetation (Taylor, Wiley, Kuo & Sullivan, 1998). Activities in green settings have been found to improve children's cognitive functioning (Wells, 2000) and that the more green a child's play area, the less severe his or her attention deficit symptoms (Taylor, Kuo & Sullivan, 2001).

D. PREGNANCY AND BIRTH INFORMATION

There were 14,517 live births in the study area between 1998 and 2002. Neighbourhoods with the highest number of births were Carey-Glanford (924), Hillside (678), Sooke/Sooke Area (674), and Burnside (666).

Proportion of Infants Born Small for Gestational Age

A baby that is born small for gestational age is one that has a low birth weight after consideration for duration of the mother's pregnancy. This measure is generally more useful than looking strictly at low birth weight because there is a stronger connection to the future use of health services; babies that are small for gestational age typically have long lasting health consequences and a greater need for services than low birth weight babies (though there is some overlap between the two groups). The smallest 10% of babies at each gestational age – excluding twins and triplets - are defined as 'small for gestational age'. (Centre for Health Services and Policy Research. 2002:2.3.3).

There were a total of 203 infants born Small for Gestational Age (SGA) in the study area during the period 1998 to 2002, accounting for 1.4% of all live births. Proportions of infants born SGA in Victoria are quite low in comparison with Vancouver, where up to 18% of infants are born small for gestational age. Saxe Point, at 3.1%, had the highest proportion of infants born SGA, 3.1% (there were 327 live births).

Data Source: BC Vital Stats, 2001.

Centre for Health Services and Policy Research *BC Health Atlas*, 2002

Proportion of Infants Born to Teenage Mothers

There were a total of 94 births to teen mothers (aged 15-19) in 2001. The proportion of births to teen mothers by neighbourhood ranges from 0% to 12.2%. Neighbourhoods with the highest percentage births to teens are Sooke, Vic West, Saxe Point, Downtown, and Hillside. The teen fertility rate in 2001 for the study area is 10 births per 1,000 women aged 15-19.

How is early childhood healthy development related to children born to teenage mothers? Research from the Canadian National Longitudinal Study of Children and Youth demonstrates that the highest rates of smoking by pregnant women is among mothers in their teens and early twenties, and we know that smoking contributes to both low birth weight and small for gestational age babies. In addition to these facts, we know that smoking is modifiable and that pregnant women are generally very motivated to make such life style changes. There are other factors related to teenage motherhood, which are more difficult to modify, but are important to consider in the way a community offers support. Teen mothers are characterized by socio-economic disadvantage and interrupted education, and they are also more likely to be depressed. There is a clear pattern of improvement in childhood outcomes as childbearing age increases. Children of mothers aged 26-30 show the least vulnerability to problematic outcomes (Willms, 2002).

Data Source: BC Vital Stats, 2001.
Statistics Canada, 2001 Census of Population, Area Profile

Low Birth Weight

Low birth weight babies are those less than 2500 grams or 5.5 pounds, and are either born before 37 weeks gestation or are small for gestational age. Low birth weight is a key determinant of infant survival, health and development. Low birth weight has been linked to infant mortality, physical disability and long term health problems, including heart disease and diabetes (MCFD, 2002).

Between 1998 and 2002, 5% of babies born in the study area had low birth weight. Elk Lake (9.8%), Saxe Point (8.6%), Esquimalt (7.6%) and View Royal (7.6%) had the highest LBW rates; Cordova Bay (2.3%) and the Highlands (2.6%) had the lowest LBW rates.

High Birth Weight

High birth weight may increase an infant's disposition to certain chronic conditions in adulthood, including obesity, high blood pressure, diabetes and breast cancer (MCFD, 2002). HBW is defined as infants born weighing over 4,000 grams (MCFD, 2002). Between 1998 and 2002, the proportion of high birth weight babies in the study area ranged from 12% to 32%. Neighbourhoods with the highest prevalence of high birth weight babies are Sooke Area, North Saanich, Keating, and Central Saanich.

Data Source: BC Vital Stats 2001.

E. SOCIO-ECONOMIC DATA

Several studies have...found relationships between the general socio-economic climate of neighbourhoods (of which education and employment are important components) and the development of the children who live in them. Such studies have shown that neighbourhoods with residents of higher average socio-economic status were associated with more positive developmental outcomes (Connor, 2001).

Average Household Income

A higher family income level makes the conditions for healthy child development more easily accessible. For example, access to good quality child care, nutritious food, secure housing, and community participation improves as income level rises (UBC HELP, 2002).

The range of average household income by neighbourhood was from \$34,578 to \$82,813. Lowest household incomes were closest to town, while highest household incomes were in Oak Bay, Cordova Bay, and Gordon Head-Ten Mile Point.

Data Source: Statistics Canada, 2001 Census of Population, Area Profile

Families Below the Low-Income Cut-Off

The percentage of economic families (defined as any group of persons occupying the same dwelling who are related to each other by blood, marriage, common-law, or adoption) in each neighbourhood living below the low-income cut-off as defined by Statistics Canada ranges from 2% to 21%. Areas with high incidence of low income are James Bay, Downtown, Fernwood, Mayfair, Hillside, Burnside-Tillicum, and Esquimalt. In 2000, 9% of families in Victoria were below the low-income cut-off, compared with 13.6% of BC families, and 12.6% of Canadian families.

Low Income Cut-off definition: Percentage of economic families or unattached individuals who spend 20% more than average on food, shelter and clothing (Stats Canada Census dictionary).

Data Source: Statistics Canada, 2001 Census of Population, Area Profile

Statistics Canada. Income Status (4) and Census Family Structure for Census Families, Sex, Age Groups and Household Living Arrangements for Non-family Persons 15 Years and Over and Sex and Age Groups for Persons in Private Households (87), for Canada, Provinces, Census Metropolitan Areas and Census Agglomerations, 1995 and 2000 - 20% Sample Data - Cat. No. 97F0020XCB01006

Average Rents

Average rents by neighbourhood, in dollars, range from \$625 to \$4484 in the study area. This does not take into consideration different types of homes or the number of bedrooms. Overall, the average rent in Victoria is \$728, compared with \$751 for BC. Lowest average rents are found in the Gulf Islands, Vic West, Saxe Point, Keating, and Sooke.

Unlike Vancouver, where there was a clustering of young children in areas of low rent, this does not appear to be as apparent in Victoria. Rents in the Western

Communities and Sooke, however, where the concentration of children aged 0-4 is the highest, are on average some of the lowest in the area.

Home ownership suggests a level of stability of residence and some economic security. Often neighbourhoods with lower levels of mobility have higher levels of home ownership (UBC HELP, 2002). The rate of home ownership, indicated by levels of owner occupancy, for Victoria CMA (which does not include the Gulf Islands) in 2001 was 63%, slightly lower than the Provincial average of 66%

Data Source: Statistics Canada, 2001 Census of Population, Area Profile; Statistics Canada, 2001 Census of Population, Community Profile Victoria.

Cost of A Nutritional Food Basket

Good nutrition is essential for a child's growth and development. Hunger affects their ability to learn and puts them at higher risk for infection and disease. In the year 2002, the cost of a nutritious food basket on Vancouver Island was on average \$154 per person per month.

The annual cost of a nutritious food basket per household was determined based on the average household size of each neighbourhood. This cost is expressed as a percentage of the average household income of the neighbourhood. The percentage of household income spent on a nutritious food basket ranges from 6% to 11%. Neighbourhoods spending the greatest proportion of household income are in the Western communities, Fernwood, Hillside, Mayfair, and University. Surprisingly, these neighbourhoods do not necessarily have the lowest average household income.

Data Source: Vancouver Island Health Authority 2002 cost of a nutritious food basket; Statistics Canada, 2001 Census of Population, Area Profile

Education Levels

Higher parental education is positively related to the language development of children. Studies have shown that the education level of the primary caregiver, often the mother, is of particular significance to the child's readiness for school (UBC HELP, 2002).

Between neighbourhoods, the proportion of adults aged 20 and over with a bachelor's degree or higher ranges from 3.6% to 43%. Areas with the highest levels of education are North Saanich, Cordova Bay, Gordon Head-Ten Mile Point, Oak Bay, Camosun, Fairfield, and James Bay.

On average, 19% of adults aged 20 and over in the Victoria area have not completed high school. In BC, 19.4% of the population has not completed high school, and nationally, 22.7% of the population has not completed high school. Neighbourhoods with the lowest level of high school completion are Esquimalt, Burnside, Keating, Langford, Sooke and Saseenos.

Data Source: Statistics Canada, 2001 Census of Population, Area Profile; Statistics Canada, 2001 Census of Population, Community Profile Victoria

High school non-completion includes adults 20+ who have not completed grade 9 as highest level of education as well as those who have not completed high school.

Unemployment

“Research has shown that neighbourhoods with high levels of unemployment can impact negatively on children’s behavioural outcomes” (Kohen, Hertzman, and Brooks-Gunn, 1998)

The mean unemployment rate for the Victoria CMA was 6.6%, lower than the overall national rate of 7.4% and the provincial average of 8.5%. The areas of highest unemployment (over 9.4%) are the downtown, Hillside, Mayfair, and University areas.

Data Source: Statistics Canada, 2001 Census of Population, Area Profile Unemployment Rate by neighbourhood was calculated by dividing the number of unemployed people by the labour force. The 2001 Census Dictionary defined Unemployed as “Persons who, during the week (Sunday to Saturday) prior to Census Day (May 15, 2001), were without paid work or without self-employment work and were available for work and either: (a) had actively looked for paid work in the past four weeks; or (b) were on temporary lay-off and expected to return to their job; or (c) had definite arrangements to start a new job in four weeks or less.”

The labour force does not include students, homemakers, retired workers, seasonal workers in an “off” season who are not looking for work, and persons who could not work because of a long-term illness or disability.

Mobility

Neighbourhoods with higher levels of stability are those in which community members are more likely to act on behalf of the common good of children. One way to measure neighbourhood stability is by measuring the proportion of individuals who made a residential move in the last year. High rates of residential mobility and transience in neighbourhoods often correspond to social disruption and weakened social ties, which in turn can create a climate more conducive to crime and other types of anti-social behaviour (Connor, 2001).

In addition to being socially disruptive, this level of transience is a huge challenge for community development approaches to child development and to continuity of care for children with special needs. When children reach school age, it becomes a further challenge for educational momentum and continuity. Increasing family residential mobility has been associated with higher levels of behavioural vulnerability in middle childhood. It is reasonable to infer that the high rates of residential transience in inner city neighbourhoods complicate efforts to build social cohesion that impacts children in those areas. (Hertzman et al., 2002)

High levels of mobility may be stressful for families and young children. This may affect the degree to which families know their neighbours, or are familiar with the resources around them. Families in neighbourhoods with high-mobility are less likely to connect with other families for informal support and information. Canadian families tend to be quite mobile, particularly within more urban neighbourhoods. On average, 19% of

Victoria area residents changed homes in the year prior to the census. This is higher than both the BC (16.4%) and National (14.3%) mobility averages. Areas with high levels of mobility were concentrated in the City of Victoria and Esquimalt, with pockets of high mobility near the University of Victoria and Royal Roads. Downtown and Fernwood had the highest mobility (over 30% of the total population), with the lowest mobility in Cordova Bay and the Highlands (less than 10%).

The high mobility areas form a pattern that is quite similar to that of the highest proportion of families below the low-income cut-off and the lowest average household income. More families in these neighbourhoods would be stressed by the realities of providing for their children on a low income, and being without the supports that a stable, cohesive neighbourhood can offer.

Note on Data Source:

Data Source: Statistics Canada, 2001 Census of Population, Area Profile; Statistics Canada, 2001 Census of Population, Community Profile.

According to the 2001 Census Dictionary, movers are defined as persons aged one year and up who, on Census Day, were living at a different address than the one at which they resided one year earlier.

Immigration to Canada in the Years 1996-2001

Immigration enriches a community, but it may also present challenges to the immigrant families. The proportion of the population in the study area who recently immigrated to Canada ranged from 0% to 21%, with an average of 8.2%. Provincially, the average recent immigration is 9.6%, and nationally it is 6.2%. Areas of highest immigration are Downtown, James Bay, Fernwood, Hillside, Mayfair, Royal Roads, and Colwood.

Data Source: Statistics Canada, 2001 Census of Population, Area Profile, Statistics Canada, 2001 Census of Population, Community Profile.

Proportion Lone Parent Families

According to Connor (2001),

“While most children from lone-parent households do well, research has shown that a higher proportion of children with cognitive and behavioural problems come from such families (Lipman, Boyle, Dooley, & Offord, 1998; Ross, Roberts, & Scott, 1998). In addition, a higher incidence of two-parent families living in a neighbourhood has been linked to healthier child and adolescent development (Brooks-Gunn, Duncan, Klebanov, & Sealand, 1993).”

Lone parent families face significant challenges in balancing the demands of raising children while earning a living. Children of lone parent families are more likely to be living in poverty than those from two-parent families.

In the Victoria area, the average percentage of families with children that were headed by a lone parent in 2001 was 16%. This is consistent with the provincial (15.5%) and the national (15.6%) averages. There is great variation among neighbourhoods, with proportions of lone-parent families ranging from 7% to 26%. Areas with over 20% of

families headed by a lone parent are Downtown, Fernwood, Esquimalt, Burnside-Tillicum, University, and Langford.

“Here, the concern is with the prospect that children in single parent families will, in general, be less affluent, be more socially isolated than those in two-parent families, and have only one adult available to model, as well as supervise, behavioural development.” (Hertzman et al, 2002).

Note on Data Source:

Data Source: Statistics Canada, 2001 Census of Population, Area Profile

Numerator: Total number of households headed by a lone-parent

Denominator: Total number of census families.

G. CHILD CARE

Adults Providing More than 15 Hours of Unpaid Child care Per Week.

Good quality child care can positively influence developmental outcomes for young children whether it is provided in the home or in a child care centre. Hours spent by parents, extended family, or other adult caregivers on unpaid child-care would promote a child's readiness for school (UBC HELP, 2002).

The proportion of the population providing more than 15 hours of unpaid child care per week in Victoria area neighbourhoods ranges from 8% to 43%, with an average of 17%. This is slightly lower than the National and Provincial averages, which are both 18.4%. Over 25% of the adult population in the Western Communities provides 15 or more hours of unpaid child care per week. The map of Licensed Child care shows that these neighbourhoods also have some of the lowest child care capacities in the area.

Data Source: Statistics Canada, 2001 Census of Population, Area Profile; Statistics Canada, 2001 Census of Population, Community Profile

This includes time spent taking care of one's own children or looking after the children of relatives, friends, or neighbours.

Census Question 33:

*Last week, how many hours did [any person in the household over the age of 15] spend doing the following activities: (b) looking after one or more of this person's own children, or the children of others, **without pay**?*

Some examples include: bathing or playing with young children, driving children to sports activities or helping them with homework, talking with teens about their problems, etc.

Licensed Child Care Spaces by Neighbourhood

There is great variation in the availability of child care, ranging from no spaces to 69 spaces per 100 children aged 0-4. Neighbourhoods with no licensed child care spaces include the area surrounding Sooke (but not Sooke itself), and the Highlands. There is a visible child care deficiency in the university area (less than 10 licensed child care spaces per 100 children aged 0-4) and the Western Communities.

Child care on reserves: of the nine reserves in the area, four offer licensed child care: Songhees (20 spaces), T'Souke (20 spaces), Pacheedaht (12 spaces) and Tsartlip (52 spaces).

Data Source: Vancouver Island Health Authority Child Care Licensing (March 2003), Statistics Canada, 2001 Census of Population, Area Profile

Includes license not required, licensed family child care, group child care > 30 mos, group child care <36 mos, and preschools.

Number of Children Aged 3-5 Using Supported Child Care

The children that are serviced in Supported Child Care often must have other supports to assist them. The Capital Region covers a large area and we find the need for therapies and access to creative solutions to Supported Child Care families is constant.

Therefore, mapping helps to indicate the communities that have clusters of children in them, as well as places we can look to find Supported Child Care resources.

The map shows the total numbers of children using Supported Child Care by neighbourhood, with locations of care providers (mapped by postal code) as an overlay. Licensed Preschool and Group Child Care Facilities make up the majority of care. Care providers are located in each neighbourhood where children using Supported Child Care live, with the exception of Langford. Areas that may be under serviced for care are James Bay, Esquimalt, Burnside-Tillicum, Strawberry Vale, and Langford. Sooke, though it appears on the map not to have any care providers, does have care providers, though the type of care providers was not in the data set.

Data Source: Ministry of Children and Families (August 2003)

H. OTHER NEIGHBOURHOOD CHARACTERISTICS

MCFD family service files per 1000 families

The number of Family Service (FS) files per 1,000 Census Families ranges from 1.6 to 38. The highest numbers of FS files were in Esquimalt, Saxe Point, James Bay, Hillside, Mayfair, Burnside-Tillicum, and Royal Roads. Areas with high numbers of FS files tend to have the lowest average household income, higher proportion of lone-parent families, and less access to licensed child care.

Data Source: Statistics Canada, 2001 Census of Population, Area Profile
MCFD (data from February 2003)

Proportion of population that speak English as a Second Language (ESL)

Access to services and community supports is difficult for immigrants whose first language is not English. The proportion of the population that speaks English as a second language ranges from 4% to 24%. The highest proportion of ESL was in Cordova Bay, Gordon Head–Ten Mile Point, High Quadra, University, Carey-Glanford, Hillside, and Vic West. This is a pattern that does not appear in any other maps. There is high proportion of children 0-4 in areas of high ESL, particularly Gordon Head–Ten Mile Point, University, Hillside, Fernwood, Vic West, and Carey-Glanford. The immigration and ESL maps do not share the same pattern.

Data Source: Statistics Canada, 2001 Census of Population, Area Profile

Aboriginal ECD Resources, Aboriginal Population, Population 0-6 on Reserves

The Aboriginal population is highest in View Royal, Keating, and Central Saanich, where aboriginal people make up 6.1 to 8.9% of the total population. There are nine reserves in the study area. Numbers of children aged 0-6 on reserve range from 2 to 50 children, with a total of 237 children 0-6 living on the nine reserves in the area. There are aboriginal ECD programs on reserve and off.

Data Source: Statistics Canada, 2001 Census of Population, Area Profile; Victoria Native Friendship Centre; Greenwood, (2003) BC First Nations children.

I. HOUSING

Access to affordable, safe and quality housing is one of the most fundamental needs common to all Canadians. At the same time, many families face difficulties in finding such housing, especially when they spend an increasing proportion of their income on shelter. Guidelines set out the by Canada Mortgage and Housing Corporation note that a family has experienced a housing affordability problem when one-third or more of their household income is spent on shelter costs (Connor, 2001).

Renters, Spending 30% or More of Their Income on Shelter Costs

The percentage of rental households spending 30% or more of their household income on shelter costs (including utilities) ranges from 12% to 57% between neighbourhoods. The number of rental households by neighbourhood varies a great deal, from 85 households in the Highlands to 6730 households Downtown. Areas where the greatest proportion of renters are spending more than 30% of their income on shelter are Gordon Head-Ten Mile Point, University, Highlands, Langford, James Bay, Hillside, and Mayfair.

Data Source: Statistics Canada, 2001 Census of Population, Area Profile

Subsidized Housing for Families

There are approximately 131 affordable housing developments with a total of 3,069 affordable housing units for families in the study area. The largest provider of affordable housing is the Capital Region Housing Corporation. Other groups that provided housing assistance are BC Housing, Co-operatives and not-for-profit associations. The M'Akola Housing Society provides affordable housing for aboriginal persons. Affordable housing developments are clustered mostly along major transportation arteries. The number of affordable housing units varies by neighbourhood, from no units in many neighbourhoods to 410 in others.

When comparing the affordable housing map with the EDI results, particularly the map showing vulnerability on one or more subscales of the EDI, there is virtually no subsidized housing in areas with low vulnerability (pink areas on the EDI map). Subsidized housing tends to be concentrated in socio-economically disadvantaged areas. This effectively increases the level of segregation in Victoria neighbourhoods.

Source: BC Housing Choices for Families, March 2001.

J. LITERACY

Library Children's Book Circulation and Storytime Attendance

Reading to a young child has a particularly strong positive effect on both behavior and preschool vocabulary skills (NLSCY, 2002). Libraries are also a source of parenting information and social interaction. The number of books borrowed during a one-week period was used as a proxy measure of exposure to books, and being read to.

The number of children's books borrowed per 100 children aged 0-4 ranges from less than one book in the Burnside-Tillicum neighbourhood to 81 to 100 books in James Bay, Fairfield, Oak Bay, and Camosun. There are eight Greater Victoria Public Library Branches. Proximity to a library does not appear to have a large influence on children's book circulation, as there were less than 40 books per 100 children borrowed in areas adjacent to the Esquimalt, Juan de Fuca, Nellie McClung and Emily Carr Branches.

Data Source: Statistics Canada, 2001 Census of Population, Area Profile; Grater Victoria Public Library, one week sample March 2003. Includes baby book and youth picture book circulation. Mapped by postal code. Gray areas are outside of library's catchments area and postal codes from these areas were excluded.

Proportion Children Aged 0-4 With Active Library Cards

Parents are encouraged to sign their young children up for library cards, a major incentive being lower fines for children's cards. There are a total of 2,006 active library cards belonging to children aged 0-4. Neighbourhoods with the highest percentage of library cards per child 0-4 are Highlands, Gordon Head-Ten Mile Point, Fairfield, and Downtown.

Data Source: Statistics Canada, 2001 Census of Population, Area Profile; Grater Victoria Public Library, August 2003. Gray areas are outside of library's catchment area and postal codes from these areas were excluded.

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APPENDIX

Background on the Early Development Instrument (EDI)

From Hertzman et al. (2002:5-6)

The Early Development Instrument (EDI) was developed by Dr. Dan Offord and Magdalena Janus of McMaster University and is a checklist that teachers complete after having several months of classroom/school interactions with children in their class. The instrument is an age appropriate measure that looks at how ready kindergarten children are for school. In 1998/9 the EDI was normed on over 16,000 students nation-wide with validity and reliability studies occurring during the same time in Ontario and Calgary.

The instrument is a group level measure. Although it is completed for each individual child, data can only be interpreted at a group level (ie. for a whole class, a whole school, or a whole neighbourhood) and is not meant to be used as an individual diagnostic tool. The purpose of the measure is to examine populations of children in different communities in order to help communities assess how well they are doing in supporting young children and their families. As well, the EDI can be used to monitor changes over time. All information is strictly confidential and is used solely for statistical purposes. The EDI assesses five developmental domains, with results interpreted as follows:

Physical health and well-being

- above the 90th percentile, child is physically ready to tackle a new day at school, is generally independent, and has excellent motor skills.
- below the 10th percentile, a child with average or poor fine and gross motor skills, sometimes tired or hungry, usually clumsy, with flagging energy levels, and average overall physical development

Social competence

- above the 90th percentile, child never has a problem getting along, working, or playing with other children; is respectful to adults, self-confident, has no difficulty following class routines, and is capable of pro-social behavior.
- below the 10th percentile, a child with poor overall social skills, with regular serious problems in more than one area of getting along with other children, accepting responsibility for own actions, following rules and class routines, respect for adults, children, and others property, with self-confidence, self-control, adjustment to change, usually unable to work independently.

Emotional maturity

- above the 90th percentile, a child who has almost never shown aggressive, anxious or impulsive behavior; has good ability to concentrate, and is often helping other children.

- below the 10th percentile, a child with regular problems managing aggressive behavior, prone to disobedience, and/or easily distractible, inattentive, impulsive, usually unable to show helping behavior towards other children, and who is sometimes upset when left by the caregiver.

Language and cognitive development

- above the 90th percentile, a child who is interested in books, reading and writing, and rudimentary math, capable of reading and writing simple sentences and complex words, able to count and recognize numbers and geometric shapes
- below the 10th percentile, a child with problems in both reading/writing and numeracy, unable to read and write simple words; uninterested in trying, and often unable to attach sounds to letters, has difficulty with remembering things, counting to 20, recognizing and comparing numbers, and is usually not interested in numbers.

Communication skills and general knowledge

- above the 90th percentile, a child who has excellent communication skills, can tell a story and communicate with both children and adults, has no problems with articulation; and English is this child’s first language.
- below the 10th percentile, a child with poor communication skills and articulation, limited command of English, who has difficulties in talking to others, understanding and being understood, and has poor general knowledge.

How are ‘average EDI scores’ derived?

(from UBC HELP, 2002)

For each question of each subscale, values are assigned then a mean (‘average’) is calculated for subscale questions

For example, for the ‘Communication’ subscale, questions 1-7 and 41 of Section B of the EDI as well as question 26 of Section C would make up this subscale.

- these questions would be assigned values from:

0.0	2.5	5.0	10.0
very poor	average	good	excellent

- means would be calculated for the questions and an average score would be derived for this subscale