

Understanding the Early Years

Second Community Mapping Study Of Children in Saskatoon 2005 (using 2003 data)

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Part 1—Study Background

Introduction

The early years of a child's life is an essential time period that forms and shapes childhood development, and can have a major impact on the rest of that child's life. Communities where children live, and the socio-economic conditions of these communities, directly affect their development. Access to programs, libraries, schools, hospitals, health care facilities and child care spaces can all have an impact on a child's development and a parent's ability to provide adequate care and learning environments for their children. As well, community environments also affect children's ability and readiness to learn once they reach school.

This community mapping report provides insight into children's development from birth to age six in Saskatoon neighbourhoods, by using community maps to give a visual overview of the information. It is divided into four sections:

Part 1: The Study: outlines the research study: what it is, who's involved, what it measures and how it collects this information.

Part 2: Mapping the Community of Saskatoon: uses maps to provide a visual overview of Saskatoon and its children on a neighbourhood level. Maps the socio-economic environment, social risk profile, physical environment and safety, and community assets (schools, libraries, childcare, recreation, health and social programs and services, and overall program access) of each neighbourhood. Part 3: School Readiness and Community Factors: uses maps to illustrate Saskatoon children's school readiness, as scored using the Early Development Instrument (EDI), by neighbourhood. Also compares this data, collected in 2003, with the previous data collected in 2001.

Part 4: Using this Information to Improve Children's Outcomes: ideas on how this community mapping information can be used and is being used by individuals, families, schools, and organizations to improve children's school readiness outcomes.

Understanding the Early Years Research Project

What is this project about?

Understanding the Early Years (UEY) is a national research project that was created to address the role that communities play in the lives of children and their caregivers. It is funded by the federal ministry Social Development Canada, formerly part of Human Resources and Development Canada. UEY focuses on the developmental outcomes of children from birth to age six, and tests their school readiness when they reach kindergarten. This research project also provides information to measure and report on how community factors influence school readiness. This information helps communities monitor and assess the supports they already have for children and families, and make decisions about what policies and programs they should consider implementing, and strengthen their research capacity. The objectives of UEY project are to:

- increase knowledge by studying how communities can enhance healthy child development;
- monitor progress of children's outcomes, and whether or not they are improving; and,
- catalyze community action to improve the outcomes of children's development.

Who is involved?

Nationally

There are 12 communities across Canada currently involved in the national UEY research project, with plans for further expansion. The current communities are: Prince Albert, Saskatchewan; Winnipeg, Manitoba; North York, Ontario; Southwestern Newfoundland; Prince Edward Island; Hampton, New Brunswick; Niagara Falls, Ontario; South Eastman, Manitoba; Saskatoon, Saskatchewan; Dixie-Bloor, Missasauga, Ontario; Montreal, Quebec; and Abbotsford, British Columbia. By involving different cities, we can learn about the needs and strengths of different communities, each with unique economic, social and physical characteristics. For more information about UEY nationally, go to Social Development Canada's website at www.sdc.gc.ca, select Children, and then select Understanding the Early Years, or click on this link:

http://www.sdc.gc.ca/en/hip/sd/310_UEYReports.shtml

Saskatoon

In Saskatoon, the research team is made up of local community-based and grassroots organizations and university-based researchers involved in early childhood development research. The partners are:

Saskatoon Communities for Children (SCC) (www. communitiesforchildren.net)

Saskatoon Communities for Children promotes the physical, mental, spiritual, emotional and social well-being of children in the Saskatoon area, paying particular attention to at-risk children and families. SCC has a central planning table, made up of representatives from community organizations that deliver services to children. They have created a Children's Agenda, with priority issues, which include:

- Stopping the sexual exploitation of children by perpetrators and pimps;
- Responding to the needs of children not attending school or not receiving formal education;
- Reassessing the criteria used to determine when families with disabled children are eligible for 24-hour care services;
- Improving access to safe, affordable, adequate family housing; and,
- Addressing the causes and impact of poverty on children, which includes addressing the health and well-being of children from conception to age six.

Success by Six Working Group (http:// communitiesforchildren.net/successby6.html)

Success by 6 ® Saskatoon is a working group made up of 40 child-serving and parent-support organizations and individuals working to improve and enhance services for children, families and caregivers, influence public policy and resource development, network, collaborate and raise public awareness. Success By 6 ® Saskatoon is the community advisory

group for UEY, serving as a means to transform the research into an integrated community action plan of prevention strategies, advocacy and service delivery.

Saskatchewan Population Health and Education Research Unit (SPHERU) www.spheru.ca

SPHERU is a university population health research unit, based at the Universities of Saskatchewan and Regina. Multidisciplinary researchers in the unit investigate the social and environmental determinants of health, often partnering with community organizations. Children's health and well-being, and the role communities play in this process is one of its research priorities.

What UEY measures

Understanding the Early Years helps to define the connections between family, school and neighbourhood influences on children's development from birth to six. It also seeks to understand how community resources and programs can positively impact this development.

This research initiative measures children's "readiness to learn" school readiness by a number of means. *Readiness to learn* is measured by looking at physical, social, emotional and language and cognitive skill development. It also measures the factors in communities that influence readiness to learn.

The UEY project provides not only a snapshot of children in Canada as a whole, and progression or regression over time, but also gives an indication of children's development and school readiness by neighbourhood, community, province and territory. This way, the information collected can help program planners and policy-makers make decisions based on local information.

How is Readiness to Learn measured?

We use three tools to measure Readiness to Learn:

- 1. The National Longitudinal Survey of Children and Youth Community Study;
- 2. The Early Development Instrument (EDI), which measures early child development outcomes; and,
- 3. Community Mapping.

The National Longitudinal Survey of Children and Youth (NLSCY) Community Study in Saskatoon

Statistics Canada has conduced The National Longitudinal Survey of Children and Youth (NLSCY) since 1994 to gather data on Canadian children every two years. In Saskatoon in 2001, Statistics Canada researchers made a random selection of 500 kindergarten households to participate in a voluntary survey to collect information for the UEY research project. The information was collected by telephone interview with parents, and one-to-one interviews with children. [

The Early Development Instrument (EDI)

The Early Development Instrument (EDI) is a checklist used by kindergarten teachers to assess five areas of children's development:

- physical health and well being;
- social competence;
- emotional maturity;
- language and cognitive development; and
- communication skills and general knowledge.

The EDI assesses children's school readiness by the time

they reach kindergarten. This can be determined by observing a child's ability to:

- meet task demands of school;
- benefit from academic instruction; and,
- meet certain behavioural expectations, such as sitting quietly, listening to the teacher, cooperating with others, and communicating feelings and wishes appropriately.

Kindergarten teachers at public schools in Saskatoon completed the EDI checklist in about each child in their class. We analysed this information to determine the state of children's development within Saskatoon as a whole, and in each neighbourhood. Note that the EDI is used to collect data on *groups* of children, not on individual children. Data collection was done in 2001, 2003 and 2005. This mapping report is based on the 2003 data; the previous one on the 2001 data.

Community Mapping

Community mapping is a way to create a visual tool to assess the linkages between indicators. A Community Mapping report provides information about children, their families, and their communities, and illustrates the relationship between the environment in which children live and their outcomes.

Why this information is important

This information is important for families who want to ensure that their children are given the best environment to develop school readiness. As well, it helps communities, institutions, and the people who work in the field of childhood development make informed decisions about resources and support of early child development. Part 2 – Mapping the Community of Saskatoon

The Community of Saskatoon

Saskatoon is Saskatchewan's largest city with a population estimate of 205,900 as of December 31, 2004, according to the City Planning Branch. Saskatoon is a vibrant community with big city amenities and a small-town feel. It is centrally located in the province of Saskatchewan, and situated on the banks of the South Saskatchewan River, which is crossed by seven bridges within the city limits. The river is a centre for outdoor activities and festivals, and divides the city into east and west side neighbourhoods.

Saskatoon is surrounded by agricultural land. The agricultural sector around Saskatoon provides Canada's major export crops: wheat, oats, barley, rye, flaxseed and canola, as well as providing a variety of services and products to the farm sector. Value-added food processing is one of the fastest growing industries.

Mining is also an important part of the area's economy. Nearly two-thirds of the world's recoverable potash reserves are located in the Saskatoon region. It is also the world's largest exporter of uranium.

With access to excellent kindergarten to grade 12 schools, technical schools and the University of Saskatchewan, many educational opportunities are available. The University of Saskatchewan is the only university in Canada to house all five health science colleges and a major teaching hospital on the same campus. It's known for its beautiful gothic architecture, as well as its veterinary college, agricultural college, research park and as the home of the synchrotron, a kind of giant microscope that uses light far brighter than the sun to investigate matter on a molecular level.

Map 1:1: The Neighbourhoods of Saskatoon

The maps in this report are based on the residential neighbourhoods of Saskatoon. Figure 1:1 shows the names and locations of the neighbourhoods in Saskatoon.

Saskatoon has a total of 83 neighbourhoods: there are 43 neighbourhoods on the west side of the South Saskatchewan River, and 40 neighbourhoods on the east side. Of these 83 neighbourhoods, 56 are residential, with the rest industrial, commercial and underdeveloped.

On the west side, the five older neighbourhoods of Riversdale, Pleasant Hill, King George, Westmount and Caswell Hill, established in the early 1900s, form the inner city neighbourhoods commonly called the "core." They are characterized by character homes, mature trees and a diverse population. These neighbourhoods also have a large number of rental accommodations and absentee landlords. Housing is aging and many houses are vacant. Residents in these neighbourhoods experience higher unemployment levels, and a greater numbers of families are on social assistance than in other neighbourhoods in Saskatoon (Vibrant Communities, 2004).

Caring residents also characterize these neighbourhoods, and local community-based organizations work in partnership with the community members in the core neighbourhoods to tackle issues such as housing, poverty, childcare and program access.



Legend

Map 1:2: The Population of Children in Neighbourhoods

Map 1:2 specifies the distribution of children ages zero to six who were assessed in this study. Each star represents a residence where a child or children reside.



Mapping the Social and Physical Factors that Affect Children's Development

There are many factors that shape children's development: biology, parents and other caregivers, and the communities they live in are all important. Children's capacity for successful, positive social interaction begins at a young age, and is influenced by early close relationships, their experiences with other children, and the guidance and instruction that comes from parents and other family members (Doherty, 1997). These relationships can be complemented by interactions with other people beyond the family, such as caretakers, and residents of their neighbourhood and larger community. Role models in the community can affect the expectations and behaviours of children.

The following maps represent how neighbourhoods in Saskatoon differ in terms of social and physical environments, and how these differences may affect children.

a. Socio-Economic Environment

The socio-economic status of communities and neighbourhoods is an important factor when assessing social environment. It can affect a child's education, income, occupation, future marriage, health, friends and life expectancy. By assessing the socio-economic status of each neighbourhood, we have a better understanding of how they affect children's outcomes, family processes, and community resources.

Socio-economic status is usually measured by the income, education, and occupation of the people located in a community. A low socio-economic status is not necessarily a determination of low scores for children's readiness to learn. In fact, some neighbourhoods with low socio-economic environments have children with EDI scores that are close to the national EDI average. Rather, this snapshot provides a look at the barriers children may have to developing at a normal rate.

In Saskatoon, 128,945 people aged 15 and over in the Saskatoon Census Metropolitan Area reported receiving employment income for the 2001 Statistics Canada census, the most recent data available. Fifty-two percent worked full time, and average earnings were \$28,174, compared to a national average of \$31,757 per year. Of those employed, 65,840 (51.1%) were men, earning an average of \$34,776, and 63,100 (48.9%) were women, earning an average of \$21,285 per year.

Women in Saskatoon tended to work more part-time jobs than men (58% of men worked full-time, versus 41% of women) Men dominated management positions (7,150 men compared to 3,935 women) and trades, transport and equipment operations (17,155 versus 1140), while more women were found to be working in sales and services occupations (18,600 women as compared to 13,075 men), business, finance and administration occupations (14,640 versus 4970), and health occupations (6610 versus 1630).

Saskatoon has a high percentage of working poor: twenty percent of full-time workers made less than \$20,000 in 2001.

Neighbourhoods in Saskatoon differ; maps 2:1 to 2:7 display these differences in terms of household income, aboriginal population, housing, employment, and single parent families.

Map 2:1: Percentage of Low Income Families by Children Ages 0-6 in Neighbourhoods

Map 2:1 looks at the percentage of low-income families per neighbourhood as compared to the number of children ages zero to six. This map shows that most of the low-income families identified reside on the west side of the river. It also illustrates that in the east side neighbourhoods, there are few neighbourhoods with more than 16 percent of the families identified as low income.

It can be inferred from this map that there are large numbers of families in Saskatoon that suffer from financial stress.



Map 2:2: Percentage of Aboriginal Population by Children Ages 0-6 in Neighbourhoods

The Aboriginal population in Saskatoon is slowly moving away from low income, west side neighbourhoods. Although the population is still concentrated in the west side neighbourhoods of Confederation Park, Pleasant Hill and Riversdale (between 35 and 46 percent), 1-12% of the Aboriginal population is located in neighbourhoods east of the river.



Map 2:3: Number of Social Housing Units for Families by Children Ages 0-6 in Neighbourhoods

Safe, affordable housing is a basic need. However, due to the high cost of housing, many families have difficulty finding adequate shelter. Agencies and service providers provide social housing accommodation for some vulnerable members of society who cannot, for whatever reason, secure their own housing.

Social housing units for families in Saskatoon are concentrated throughout the west side of the city, where there is a greater need for social housing, mainly among neighbourhoods with many low-income families and many children aged zero to six. Social housing units on the east side are located in the most eastern neighbourhoods.



Map 2:4: Percentage of the Population That Moved in the Past Year by Children Ages 0-6 in Neighbourhoods

Neighbourhoods in Saskatoon with the largest percentage of households that moved in the past year (40 to 52 percent) include the Airport Industrial area (McNabb Park), Confederation and Meadow Green, all on the west side. Other neighbourhoods with considerable mobility (30 to 41 percent) included Holiday Park and Riversdale on the west side, and Varsity View and University Heights on the east side. Mobility in this second group of neighbourhoods may be related to their proximity to the campuses of the University of Saskatchewan, Saskatchewan Institute of Applied Science and Technology, and First Nations University of Canada. Other mobility can be attributed to the impact of poverty and other social dynamics.

Neighbourhoods with lower mobility are more likely to have community members who have a sense of well-being for the neighbourhood, and are more likely to act on behalf of the common good of children. High rates of residential mobility and transience corresponds to social disruption and weakened community ties. This can create a neighbourhood that is more conducive to violence, crime and anti-social behaviour.



Map 2:5: Percentage of the Population 15 Years and Older with Employment Income by Children Ages 0-6 in Neighbourhoods

The neighbourhoods of Riversdale, Pleasant Hill, and Hudson Bay Park show significant numbers of young children combined with low levels of employment income. The majority of employment income in Saskatoon is concentrated on the east side as well as the most westerly neighbourhoods on the west side. Unemployment is concentrated in the mid-western neighbourhoods.



Map 2:6: Percentage of the Population 20 Years and Older with Less Than a Grade Nine Education by Children Ages 0-6 in Neighbourhoods

In the neighbourhoods of Lawson Heights, Kelsey, Riversdale, Pleasant Hill and Nutana, between 15 and 29 percent of the population older than 20 have less than a grade nine education. There is a trend of low levels of education combined with low levels of employment and large numbers of children ages zero to six in the areas of Riversdale, Pleasant Hill and Nutana.

The education level of families is considered a crucial part of the socio-economic environment of communities where small children grow and develop. Adults in the community with high levels of education are more likely to be employed, less likely to live in poverty, and more likely to serve as positive role models and mentors to all children in the community. Those with lower education levels may face diminished employment prospects, and are more likely to live in poverty. The education of parents is related to the development of their own children.



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Map 2:7: Percentage of Single Parent Families by Children Ages 0-6 in Neighbourhoods

Saskatoon has a high proportion of single parent families, especially in west side neighbourhoods. In 2001, there were 36,765 married couple families, 5,280 common law couple families, and 9,820 single parent families in Saskatoon, and of these single parent households, 8,425 are headed by women (Gender and Poverty Project, 2004).

On the east side of the river, few neighbourhoods have more than 18 percent of households headed by a single parent. On the west side, however, some neighbourhoods have between 33 to 48 percent of households with a single parent. The neighbourhood of Confederation Park has the most single parent families at between 48 and 62 percent The Airport Industrial Area (McNabb Park), King George, Pleasant Hill, and Meadow Green neighbourhoods also have a high percentage of single parent families, at between 33 and 48 percent.



B. Assessing Social Risk by Neighbourhood

The social risk profile is intended to provide a snapshot of community social risk factors and give an indication of services needed in each community, based on the needs of families and children. The information was collected from 1996 Census data.

We assessed social risk by profiling socio-economic well-being indicators in each neighbourhood. This score was calculated by determining the percentage of these indicators by neighbourhood. These indicators include:

- the Aboriginal population;
- the number of households that are single parent;
- homes that are owner-occupied;
- the population 15 years and older with employment income;
- families that have a low income (below the LICO cut-offs)
- the population that has moved in the past year;
- the population between ages 20 and 64 years of age that have not completed Grade 9; and,
- the ethnic diversity of the community.

It is important to note that these indicators are merely a way to measure social risk. These categories are not exclusive by themselves and do not create or increase incidents of social risk on their own.

Map 3:1: Social Risk Score by Neighbourhood

Map 3:1 indicates the assessed social risk score in each neighbourhood. The darker the colour of red, the less social risk has been assessed in that neighbourhood. Higher social risk scores are clustered around the Central Business District on the west side of the river, locally known as the "inner city" or the "core neighbourhoods."



Map 3:2: Social Risk Score by Children Ages 0-6 Years in Neighbourhoods

Map 3:2 indicates that neighbourhoods with a high social risk score are also neighbourhoods with a large number of children ages 0 to 6 years of age.



C. Physical Environment and Safety

Map 3:3: Incidents of Crime by Children Ages 0-6 in Neighbourhoods

Incidents of crime are directly related to the safety of a neighbourhood. Property crimes include theft, break and enter, fraud, mischief and possession of stolen property. As illustrated on Map 3:3, incidents of property crime have been documented throughout Saskatoon neighbourhoods.

However, prostitution related incidents are concentrated in the inner city neighbourhoods, in and around "the stroll", an area along 21st Street where prostitution is abundant. Prostitution offences include procuring, pimping, and running prostitution rings within a house. From the map, we can see that prostitution offences are occurring in neighbourhoods where large numbers of children live.



Map 3:4: Number of Discarded Needles by Children Ages 0-6 in Neighbourhoods

Map 3:4 shows the distribution of discarded needles, presumably used by injection drug users, picked up by Fire and Protective Services in the city of Saskatoon on streets, private and public properties, compared to the number of children ages zero to six in each neighbourhood.

It is important to note that the neighbourhood where the highest number of needles were found, Pleasant Hill, is a neighbourhood with a high number of children ages zero to six. Pleasant Hill has between 358 and 529 children ages zero to six, and between four and five needles.

Young children need to be educated about the dangers of discarded needles because they may not understand the risks associated with touching them. Saskatoon Fire and Protective Services and Public Health Services Saskatoon jointly run a needle pick-up program. They also train volunteers to perform "safety checks" in at-risk areas so that they can remove needles before children find them.



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D. Community Assets and Neighbourhoods

Saskatoon has many parks, recreational services and cultural events that make it a vibrant community: indoor and outdoor pools, recreation centres, a zoo, campgrounds, golf courses, playgrounds, programs and centers for children and youth, and numerous community associations. Many of these programs are provided by, or partnered with the City of Saskatoon Leisure Services department.

Access to these community assets, however, can be problematic for some people due to issues such as transportation and fees.

Schools and Library Services

Map 4:1: Preschools and Prekindergartens by Children Ages 0-6 in Neighbourhoods

Preschools are spread evenly throughout the city, so that the opportunity to attend preschool is readily available for children whose families can afford the fees. Some subsidies are available for preschool-aged children from low-income families.

Prekindergartens are programs offered from within the school system, that offer a positive educational environment for children who need educational role models and mentors. Prekindergartens in Saskatoon are located in some west side neighbourhoods that have large numbers of children ages 0 to 6, have low income levels, and many adults who have less than a Grade 9 education.



Map 4:2: Elementary Schools by Children Ages 0-6 in Neighbourhoods

Elementary schools are located in neighbourhoods with many children. Private Christian schools, public, separate and Francophone schools are all available within Saskatoon. Neighbourhood schools are within easy walking distance for most children.



Map 4:3: Libraries and Book Trailers by Children Ages 0-6 in Neighbourhoods

There are seven library branches in Saskatoon. Some neighbourhoods have very limited access to library services in Saskatoon, with many neighbourhoods being further than 1 kilometre away from the nearest library service, such that they may be outside walking distance for families. Transportation to libraries for families may not be available due to financial constraints: families may not have vehicles or money for bus fares. Neighbourhoods such as King George, Riversdale and Pleasant Hill, that have a high proportion of children ages zero to six, a high percentage of low-income families, and populations with low education levels are the neighbourhoods that need library services the most, and in this case, are the neighbourhoods which do not have close access to library services. Twenty-seven other Saskatoon neighbourhoods do not have close access to library facilities and/or services.

Saskatoon libraries offer children two kinds of services: a selection of books they can borrow, and free programs aimed at preschool children to encourage reading and promote language acquisition and communication skills development. There are seven library branches in Saskatoon. Saskatoon libraries also have a book trailer that visits eight neighbourhoods on a regular schedule. It provides a selection of books, but no programming. However, as of June 30, 2005, the book trailer will no longer be in service to put these funds toward capital development projects including provision of library services in Riversdale, a new central library building, expansion of the J.S. Wood Branch Library, and Phase II of the Alice Turner Library.



Childcare

The provision of care for children is a necessary condition for ensuring the equal access of primary caregivers to the labour market. Quality, affordable childcare is essential if our society is to adequately meet the needs of children with working parents during their developing years. Changes in work patterns and family structures affect childcare, but often these implication are not immediately known (Kohen, Hertzman and Willms, 2002). Families that are headed by a single parent often face financial difficulty paying for the cost of childcare. For some families, the cost is prohibitive, such that a parent that would like to work instead remains home to look after children. In this case, single parents may need to collect social assistance payments, which places them in further financial stress. Other families may choose to have one parent stay home to look after children partly due to a lack of adequate childcare facilities in the area. Female-headed single parent households often face different barriers, as they are less likely to receive adequate support for child care from their children's fathers (Kohen, Hertzman and Willms, 2002).

Recently, there's been a government trend of enrolling unemployed parents in low-income families or those on social assistance in labour force attachment work programs. However, there hasn't been corresponding support for childcare for these parents, which creates greater demand for the existing affordable childcare services.

Map 5:1: Childcare Centres and Licensed Childcare Homes by Children Ages 0-6 in Neighbourhoods

There are not nearly enough licensed childcare facilities in Saskatoon to deliver quality childcare services for young children. Each green circle represents childcare space for four preschool children. For example, the neighbourhood of Forest Grove shows that there are licensed daycare spaces for 45 preschool children in a neighbourhood where between 358 and 529 of these children reside.

It is possible that parents with access to transportation take their children to childcare facilities that are closer to work. However, this does not diminish the conclusion that there are not adequate spaces available for children ages zero to six in licensed childcare facilities.



This map does not show the informal childcare services that take place in Saskatoon, such as relatives, secondary caregivers and neighbours, or the number of children ages zero to six who are cared for by other siblings. We do not know if these unlicensed arrangements are taking the developmental needs of their charges into consideration; some may be and others may not be.

Map 5:2: Approximate Number of Children Per Licensed Childcare Home Space by Neighbourhood

Map 5:2 effectively shows the shortage of licensed childcare spaces for children ages zero to six in Saskatoon by illustrating the number of spaces per neighbourhood; numbers which are far smaller than the number of children ages zero to six in each neighbourhood. These shortages are across the map, and are not defined by income, education levels or social risk factors in neighbourhoods.



Recreation, Health and Social Programs and Services

The City of Saskatoon provides leisure services facilities and programs to the neighbourhoods of Saskatoon. Public and Catholic school divisions maintain green spaces and play areas available to children in neighbouring school grounds. School divisions, in cooperation with neighbourhood community associations, have also developed programs and services such as children's classes, creative playgrounds, paddling pools, and outdoor ice rinks.

Recreational opportunities for children are an important part of a child's growing physical and emotional health, psychosocial skills, and improved self-esteem (CCSD, 1998). Active parents tend to have active children, and families with higher incomes are more likely to have access to sports and leisure activities compared to families with lower incomes.

Map 6:1: Leisure Facilities by Children Ages 0-6 in Neighbourhoods

Map 6:1 shows the diversity of leisure services located in each neighbourhood of Saskatoon. Although these services are located in all neighbourhoods, there is a wide range of how well these parks are kept, whether or not they are irrigated, the quality of vegetation, and the state of the play equipment for children. In more affluent and new neighbourhoods, parks are large, irrigated, and planted with a diversity of vegetation, and they have pathways and newer play equipment. In the older and inner city neighbourhoods, the parks are small, not irrigated, play equipment is outdated, and they are often in areas difficult or dangerous for small children to access.



Map 6:2: Green Space/Parks by Children Ages 0-6 in Neighbourhoods

Map 6:2 shows the available green spaces compared to children ages zero to six in Saskatoon neighbourhoods. Green space refers to the kind and amount of vegetation in a play area. Studies have found that adults and children are more likely to use areas with more vegetation. More creative forms of play can also occur in spaces with more vegetation.



Map 6:3: Hospitals, Health Centres and Medical Clinics by Children Ages 0-6 in Neighbourhoods

Saskatoon has three hospitals: St. Paul's Hospital and City Hospital, located on the west side of the river, and the Royal University Hospital, located on the east side on the university campus. There are nine medical clinics, classified as minor emergency clinics, and four public health centres which handle immunization and health promotion.

Although these centres are located throughout the city, there is concern about families who do not have access to adequate transportation to them. Transportation is an issue for low- income and single parents who make regular visits to a family physician, for prenatal and postnatal care of mother and baby, and to make follow-up appointments after a child has been seen by a doctor at a hospital emergency room.



Program Access

Saskatoon has many services and programs for children from ages zero to six, provided through community services. These programs include ones for birth and prenatal services, childcare, counselling, early education, family support, literacy, nutrition, special needs children and children-at-risk. The Program Access Score was developed to measure the availability and access to programs by neighbourhood.

Barriers to program access and availability include criteria such as family income, transportation, handicap, or program demand. Scores are negatively affected if there is a waiting list to access the program, a user fee, or no wheelchair access. Most programs serve a population wider than the boundaries of a neighbourhood. The Program Access Score was negatively affected if the program location was not accessible by public transportation. Scores were positively affected if the program provided transportation to and from the site. A high Program Access Score denotes easier access to the program. The scores ranged from 0.6 to 28.3.
Map 7:1: Program Access Score by Neighbourhood

Map 7:1 illustrates the access of programs by neighbourhood using the Program Access Score. It is apparent from this map that most programs in Saskatoon neighbourhoods are not easily accessible for children ages zero to six. The darker shade of red denotes a lower Program Access Score, and it is evident that this map is mostly dark red.

The neighbourhoods with the highest Program Access Scores include City Park, the Central Business District (CBD), Exhibition, Grosvenor Park, Briarwood, Arbor Creek, University Heights and Silverspring. It is important to note that most of these neighbourhoods are located on the east side of the river, where transportation may not be as much of an issues as it may be for lower-income families on the west side of the river.



Map 7:2: Total EDI Score by Program Access Score

Map 7:2 illustrates the total EDI scores compared to neighbourhood Program Access scores. Most of the highest EDI scores were found in neighbourhoods that had high Program Access scores, located on the east side of the river. However, on the west side of the river, the neighbourhood with the highest EDI score also had a very low Program Access score: Lawson Heights. We can assume that there are other indicators which influence EDI scores in neighbourhoods, and these indicators may be different for east side or west side neighbourhoods.

Also interesting to note is the fact that the Central Business District neighbourhood has a high program Access Score and a high percentage of children who scored low on every area on the EDI scale. This could be attributed to program planners recently acknowledging the need for program access in that area.



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Part 3 – School Readiness and Community Factors

In Part II, we described the social risk score assessment and presented a map to show the incidence of social risk by Saskatoon neighbourhood.

The concept of school readiness is an indication of how many children in a group are or are not ready to learn at school, or how many children have increased needs in comparison to other children in the same group. EDI scores are based on a 10-point scale. Children who are in the lowest 10 percent of the EDI scores are assessed as being not ready to learn at school (Janus, Offord and Walsh, 2001). So by definition, if all Saskatoon children were similar to the Canadian comparison group, we would expect that about 10 percent of Saskatoon children would be defined as scoring low.

A. EDI Scores of Children in Neighbourhoods By Domain

The following maps show the 2003 EDI scores of children in each neighbourhood by EDI domain (physical well-being, language and cognitive development, social competence, emotional maturity, and communication and general knowledge), consequent to the social risk scores.

Physical Well Being

For the purposes of this study, physical well-being scores were measured by not only being disease free, but also displaying appropriate physical coordination, motor skills, and physical mobility. Proper nourishment and obtaining enough sleep to ensure the alertness and energy necessary to participate in school activities are also measured in this field. Children with EDI scores in the lowest 10 percent for physical well-being display difficulty with tasks such as holding a pencil, turning pages or manipulating objects. They may not be able to easily climb stairs or show coordinated movement. They may often be late or absent, and are frequently tired or lack to energy to fully participate in activities, pay attention, and follow instructions. A sample question for physical wellbeing would be: "How would you rate this child's ability to climb stairs?"

Map 8:1: Percentage of Children with Low EDI Scores for Physical Well-Being by Social Risk Score

Map 8:1 shows the percentage of low physical well being scores as compared to the social risk score by neighbourhood. From this map, we can conclude that a high social risk score does not necessarily predetermine a low physical well-being score, as neighbourhoods with both low and high social risk scores have children with low physical well-being scores.



Map 8:2: Percentage of Children with Low EDI Score for Physical Well-Being by Program Access Score

Map 8:2 shows the percentage of children with low EDI scores in the area of physical well-being compared to neighbourhood Program Access Scores. We can determine from this map that there is a higher percentage of children with low EDI scores in physical well-being on the west side of the city, where program access scores are low in general.



Language and Cognitive Development

Language and cognitive development scores are assessed by age appropriate reading, writing and numeracy skills. Children with developed language cognitive skills are interested in books and can maintain interest in a story. They can recognize and name letters of the alphabet, and independently write or copy letters, simple words, or sentences. Children can recognize numbers from 0 to 10 and group objects into sets. They are interested in sizes, shapes and time concepts such as today, summer and bedtime.

Children with language and cognitive development skills in the lowest 10 percent not only lack the appropriate skills regarding reading, writing and numeracy, but they also fail to attain a level of interest in learning these skills. One-on-one assistance is often needed for these children to begin to develop these skills and abilities needed. A sample question for language and cognitive development would be: "How would you rate this child's ability to tell a story?"

Map 8:3: Percentage of Children with Low EDI Score for Language and Cognitive Development by Social Risk Score

Map 8:3 shows that the majority of low language and cognitive development scores are concentrated on the west side of the city, with the lowest scores being found in the neighbourhoods that also have the highest social risk scores.



Map 8:4: Percentage of Children with Low EDI Score for Language and Cognitive Development by Program Access Score Map 8:4 shows the percentage of children with low EDI scores in the area of language and cognitive development compared to neighbourhood Program Access scores. This map illustrates a definite difference in EDI scores between the east and west side neighbourhoods: all east side neighbourhoods are reported in the lowest range of percentages of children with low EDI scores in language and cognitive development (0-14%). The highest percentages of children with low EDI scores in language and cognitive development are located on the west side, some in neighbourhoods with low Program Access scores.



Social Competence

Social competence is measured by the EDI as appropriate standards of behaviour. These standards are determined by assessing a child's ability to control his or her own behaviour, respect adult authority, and communicate feelings and needs in ways that are considered acceptable. Children can also demonstrate appropriate social skills by their ability to establish and maintain positive relationships with peers, using negotiating and cooperating skills and respect for others.

Children with poor social skills (in the lowest 10 percent of EDI scores) may display a lack of self-confidence and selfcontrol, find it difficult to follow directions and expectations and adjust to change, and may challenge authority. They may also have problems cooperating with other children and accepting responsibility for their own behaviour. A sample question for social competence on the EDI checklist would be: "Would you say that this child is able to play with various children?"

Map 8:5: Percentage of Children with Low EDI Score for Social Competence by Social Risk Score

Map 8:5 presents a snapshot of children with low social competence scores by neighbourhood. There is a concentration of neighbourhoods with low social competence scores on the west side of the city (three neighbourhoods with social competence scores between 33 and 44 percent, and five neighbourhoods with social competence scores between 22 and 33 percent on the west side, compared to only one neighbourhood on the east side with a low social competence of between 22 and 33 percent).



Map 8:6: Percentage of Children with Low EDI Score for Social Competence by Program Access Score

Map 8:6 shows the proportion of children with low EDI scores in the area of social competence, as compared to neighbourhood Program Access scores. We can determine from this map that there are a higher percentage of children with low EDI scores in social competence on the west side of the city, where program access scores in general are low.



Emotional Maturity

Emotionally mature children have the abilities needed to function in school. These include the ability to defer immediate gratification, to concentrate, and to be persistent when dealing with challenges or small failures without becoming aggressive or angry. Emotionally-mature children are able to help others and rarely almost never show behaviour that is aggressive, anxious or impulsive.

Emotionally-immature children (in the lowest 10 percent of EDI scores) are often easily distracted and inattentive. They may display impulsive behaviour and expect immediate gratification. They may show aggressive behaviour and have temper tantrums. They may be easily frustrated by daily situations, and are less apt to help others. A sample question for emotional maturity on the EDI checklist would be: "Would you say that this child would try to help someone who has been hurt?"

Map 8:7: Percentage of Children with Low EDI Score for Emotional Maturity by Social Risk Score

Map 8:7 indicates that low scores of emotional maturity in children are found throughout Saskatoon, on both the east and west sides, and are not necessarily predetermined by social risk factor.



Map 8:8: Percentage of Children with Low EDI Score for Emotional Maturity by Program Access Score

Map 8:8 shows the proportion of children with low EDI scores in the area of emotional maturity compared to neighbourhood Program Access scores. We can determine from this map that there are a higher percentage of children with low EDI scores in emotional maturity on the west side of the city, where program access scores in general are low.



Communication and General Knowledge

Children with high scores in communication and general knowledge can communicate their needs and wants in appropriate ways. They can articulate clearly, and can use language to enhance imaginative play. They have ageappropriate knowledge about their world and life.

Children with communication and general knowledge scores in the lowest 10 percent do not articulate clearly. They have difficulty being understood. They struggle to understand what is said to them, and their imaginative play is less apparent. Their communication skills are often rudimentary and are focused on needs and wants, and their difficulty in communicating may cause frustration and irritation. They may display limited age-appropriate knowledge of their world. A sample question for communication and general knowledge would be: "How do you rate this child's ability to articulate clearly, without sound substitutions?" 52

Map 8:9: Percentage of Children with Low EDI Score for Communication and General Knowledge by Social Risk Score The majority of children with low scores for communication and general knowledge are located in the west side neighbourhoods. Five neighbourhoods on the west side had the highest percentage of children with the lowest scores in communication and general knowledge (33 to 44 percent). Comparatively, four neighbourhoods on the east side had the second highest percentage of children with the lowest scores in communication and general knowledge, while the west has three neighbourhoods with the second highest percentage (22 to 33 percent).

Of the children who scored high in communication and general knowledge, English was usually their first language. However, it is not conclusive that all children who did not speak English as a first language had poor communication and general knowledge skills and abilities.



Map 8:10: Percentage of Children with Low EDI Score for Communication and General Knowledge by Program Access Score

Map 8:10 shows the proportion of children with low EDI scores in the area of communication and general knowledge compared to neighbourhood Program Access scores. We can determine from this map that there is a much higher percentage of children with low EDI scores in communication and general knowledge on the west side of the city, where program access scores in general are low. However, in neighbourhoods where Program Access scores are high, the percentage of children's low EDI scores in communication and general knowledge on both the west and east sides of the river.



Maps 8:11: 8:12: 8:13: Social Risk Scores and Total EDI Scores

The previous maps give a snapshot of the neighbourhoods where children have lower scores in physical well-being, social competence, emotional maturity, language and cognitive development, and general knowledge scores. By pinpointing these specific low scores within neighbourhoods with high social risk, specific efforts can be directed towards children in these neighbourhoods. However, Map 8:11, which presents a picture of the total EDI scores as compared to neighbourhood social risk, tells a different story.

Generally, total low EDI scores are concentrated in areas that have a high or moderately high social risk factor. Universally, these maps conclude that all children, regardless of social risk and location, need access to early childhood development programs to ensure competence and success in the early years of school.



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Maps 8:12 and 8:13 show neighbourhood social risk scores compared to the percentage of children who scored low on at least one EDI scale (Map 8:12) and at least two EDI scales (Map 8:13). These maps conclude that children who live in areas with higher social risk scores are more likely to have difficulty in more than one EDI area.





B. EDI Scores Compared

The EDI score information collected is also useful in comparing changes, either positive or negative, in the community in which they were used. This way, we can track progress or decline in children's school readiness, and advocate for changes where needed.

9:1: EDI Scores Compared 2003 vs. 2001

This graph shows average EDI scores for each of the five domains for 2003 and 2001. Scores for 2003 are in blue and scores for 2001 are in brown. Each box represents the spread of the scores for each domain, and the coloured portion represents the scores that correspond to 25^{th} and 75^{th} percentiles. The average score is represented by the horizontal line within the coloured portion. The scores for each of the two years are not that different; if anything, the scores for each of the domains in 2003 is slightly higher than those in 2001.



9:2: Percentage of Children With Low Scores for EDI 2003 and 2001

This graph shows the percentage of children who scored low in each of the EDI domains for the years 2003 and 2001. A slightly larger proportion of children in Saskatoon, 12 or 13 percent, scored at a low range. In the Communication and General Knowledge domain, the differences were statistically significant, as a significantly larger proportion of Saskatoon children scored low compared to the Canadian comparison group.



Part 4: Using this Information to Improve Children's

Outcomes

This research study has considered influences on children's early development from both family processes and community factors, taking into account that both of these areas affect children's development. The next step is to understand what can be done to help children increase their readiness to learn based on this information. The Community Mapping Study can be an important advocacy tool to inform decision-making bodies and facilitate concentrated action. It can help to direct action and set priorities in municipal funding, local programs, and child and family services.

This mapping study provides information that is useful for the public as well as professionals in the field of early childhood development. It can provide a powerful viewpoint of children's outcomes based on socio-economic status (income, education and employment). It also shows the links between children's outcomes and the factors influencing these outcomes. Therefore, it is important that we use this mapping study to create a community-wide agenda to ensure that children's development in the early years is not compromised. These maps show the holistic nature of communities and the links between communities and families.

The coordination and collaboration of services within Saskatoon can also be enhanced by this mapping study. Program planners can use these maps to see where their strengths and weaknesses within neighbourhoods have been, and work towards eliminating service gaps in areas at-risk. The maps could also be used to involve parents and other community members in childhood development programs, as well as integrating programs to prevent overlap of services. The end result could be a seamless system of supports for children ages zero to six and their families.

The importance for families and communities to participate in and ensure the best possible future for their children should not go unnoticed. Community mapping is a way to illustrate the links between families, communities and children's development, to bring about positive change. We are aware of a number of ways that the UEY data is being used to improve outcomes in our community. The Saskatoon Public School division is very interested in improving their students' language skills. They have made extensive use of the *Understanding the Early Years* research in designing several of their recent initiatives:

Literacy for Life

In 2004, the public board launched Literacy for Life, a major three to six year program to improve early learning and literacy by improving reading skills. Components include:

- Literacy Grade One: in which grade one teachers are using new teaching methods to have all grade one students reading at or above grade level.
- Just Read: a school and community partnership to increase students reading during their time outside the classroom and foster a life-long love of reading and
- Read to Succeed: an intensive tutoring program to help struggling readers in grades 4-12 improve.

Saskatoon Public Schools has reported very promising results in their first-year progress report.

Other Saskatoon Public School initiatives include:

Full Day, Every Day Kindergarten

Six public schools currently offer full day, alternate day kindergarten. Teachers and parents report that children are thriving in these full day settings. In 2005-06, the public board will be testing full-day, every day kindergarten with an enhanced literacy component to improve students' reading and writing achievements.

Re-designating WB Bate Community School as multipurpose facility

This elementary school, in Meadow Green, is being renovated to become a multipurpose facility: a school with an integrated community centre and public health office, so that people have access to a range of programs and services under one roof. It will open in the fall of 2006.

Saskatoon Catholic Schools have also made extensive use of our research information for their own literacy and kindergarten programs.

As well, the Saskatoon Public Library has also made use of our data, putting more book trailers into neighbourhoods where we had shown that people did not have easy access to libraries. After conducting their own needs assessment in 2004, the public library is retiring their book trailer and planning to build a branch in Riversdale to serve this inner city neighbourhood even better.

Using these results in the future

We will continue to share our findings with educators, program planners, parents, policy makers and others so they can see where their neighbourhoods excel, and where they need to improve. We can all work to address service gaps and overlaps and provide a stronger support system for children and their families.

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