CHILD CARE *in* NEW BRUNSWICK: *The* SOCIAL & ECONOMIC IMPACTS

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This study takes a broad view of "child care" and uses the term interchangeably with "early childhood education" and "early education" and "early childhood education and child care" (ECEC), which is more commonly found in the literature and is increasingly used by the sector. ECEC includes all arrangements providing care and education for children outside of compulsory schooling. In the context of New Brunswick, this would include child care centres and community (family) daycare homes.

Table of Contents

List of Figures and Tables

Scope, methodology and limitations

This study was commissioned by the New Brunswick Department of Education and Early Childhood Development to support the work of its Child Care Taskforce. The authors were asked to develop a cost benefit analysis of the potential social and economic impacts of public spending on child care in the province. They were also asked to provide recommendations on child care service delivery based on best practices in other Canadian jurisdictions.

This study uses a mixed methodology, including a selected review of the relevant research literature examining the impact of early education and child care on child, family and socioeconomic outcomes; analyses of relevant NB government documents; key informant interviews and feedback received during a roundtable attended by the taskforce commissioners and government officials.

The quantitative data used in the economic analysis were primarily obtained from the Industry Accounts Division at Statistics Canada, the 2011 Canadian Census, the 2011 National Household Survey, the Education and Early Childhood Development Department and the New Brunswick Health Council.

The multipliers used in the input-output analysis were only available at the provincial level and were from 2010. No newer data or data from smaller geographical areas were available. The precise measure of the child care industry was not available and a proxy was used instead.

The data from the 2011 National Household Survey may be problematic as it was non-mandatory and has been shown to have uneven response rates based on demographic characteristics. Unfortunately, this is the best data currently available.

The effect of the child care sector on income tax revenue and GDP was based on a number of assumptions listed in the text regarding the productivity of women who become employed due to the increase in child care availability.

The predicted use of child care was estimated using current birth rates by community which may change over time which would affect demand. In addition, it was assumed that individuals' only access child care in the community in which they live. The rate of child care use was established at 65 percent of children 0–8 years old to coincide with New Brunswick's anti-poverty strategy. The level of funding per space was established to mirror those offered in Quebec. Two levels of parent fees are modeled to estimate overall costs.

The estimates regarding capital expansions assumes that every additional space for children 0–4 years old will either be built or renovated. The estimates also assume that centres will be built only to the minimum legislated space requirements and do not take into account any returns to scale.

A: A Strong Start For School and For Life

A wide body of research from across disciplines documents the benefits of early childhood education and care (ECEC) for children, families and society. The evidence suggests that accessible, quality ECEC would deliver similar benefits to New Brunswick.

SOCIOECONOMIC BENEFITS OF EARLY EDUCATION AND CHILD CARE

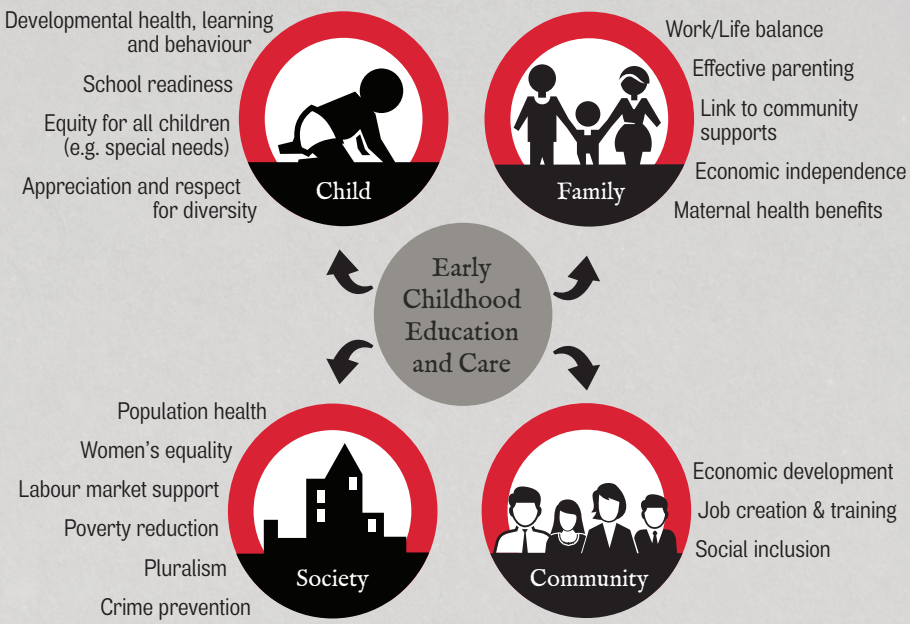
As illustrated in **Figure A1**, early education and care is associated with a wide range of benefits. Early education is a job creator in its own right, while supporting parents as they work or upgrade their skills (Fortin, 2012; Fairholm, 2010; Barnett, 2007). It provides a means of welcoming new immigrant and minority families as it offers opportunities for inclusion (Bennett, 2011; Winsler, 2008). By identifying problems and intervening early, ECEC decreases special education costs (Peters, 2010).[1] Improved education ultimately helps to reduce skills shortages and expenditures in health, justice and social services (Heckman, 2000, 2008; Fortin, 2012). These, in turn, have a positive effect on income inequality leading to a stronger society and economy. These goals are found in the strategic directions of several Government of New Brunswick documents, including but not limited to the Discussion Paper on the 10-Year Education Plan, Putting Children First, the Linguistic and Cultural Development Policy: A Societal Project for the French Education System and Overcoming Poverty Together: The New Brunswick Economic and Social Inclusion Plan, 2014–2019.

ECEC AND HUMAN DEVELOPMENT

Child development is a multi-faceted, inter-related and continuous process of change in which children master ever more complex levels of moving, thinking, feeling and relating to others. Physical, cognitive, social and emotional development occurs as the child interacts

1 Longitudinal research found a $5000/student saving in special education associated with attendance in early childhood education programs.

Figure A1
Early Childhood Education and Care Provides Multiple Benefits to the Individual, Families and Society



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with the surrounding environments of family, the community and the broader society. Public policy is not equally effective at influencing outcomes in all three spheres.

Yoshikawa's 2013 meta-analysis of 40 years of international research identifies advantages from regular attendance in early education that persist into adulthood. Waiting for the school years to improve academic and social outcomes is often too late. It is during the years before school that brain development is most rapid and when children are particularly sensitive to their environments. Nurturing, stimulation and nutrition interact with genetic predispositions to sculpt the architecture of the brain and its neural pathways, influencing learning, behaviour and physical and mental health over the life course.

As illustrated in **Figure A2**, adversity in early childhood in the form of harsh, neglectful or inconsistent parenting, combined with poor social demographic factors, has an impact on brain development. This creates a cascading effect that manifests throughout the life cycle:

- In preschoolers: Aggression or withdrawal; developmental delays.
- In adolescents and young adults: Poor academic performance; greater school dropout rates; early pregnancy; risky behaviour, including substance abuse; and mental health problems.
- In adults: Obesity; type 2 diabetes; cancers and heart disease.

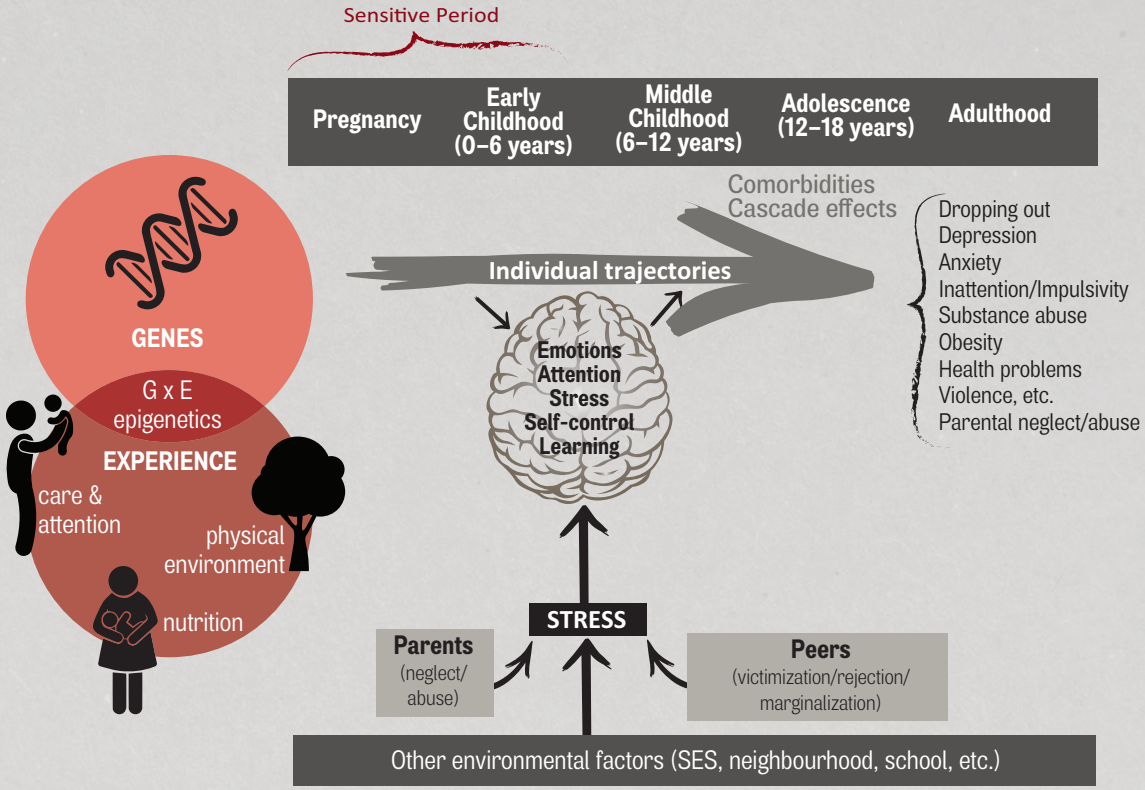
These in turn create intergenerational cycles of poor outcomes. Quality ECEC programs have been found to help mitigate the detrimental effects of adverse home and other environmental factors on early development (Walker et al., 2011; Allen, 2011).

The home environment has the strongest influence on children's competencies prior to school entry (Sammons, et al., 2007, 2011; Sylvia et al., 2008). These competencies include language skills, cognitive abilities and the ability to interact with other people. Assessments of kindergarten-aged children using the Early Development Instrument (EDI) show high levels of vulnerability.[2] For example, research from the University of British Columbia links vulnerability as measured by the Early Development Instrument to poorer performance on provincial testing in Grades 4 and 7 (Mustard, 2007). Manitoba research links vulnerability in Kindergarten with poor academic results, including increased grade repetition, and incomplete school leaving, at Grades 10 and 12 (Mustard, 2007).

Language skills are a strong and early predictor of cognitive achievement, social competency and emotional regulation. Children's early oral vocabulary knowledge continues to grow rapidly throughout early childhood and to overlap with reading acquisition in primary school. Children with low language skills at school entry are unlikely

2 The Early Development Instrument is used in 11 out of 13 Canadian jurisdictions (except NB and PEI). Teachers administer the tool during the latter half of kindergarten to provide a population level assessment of children's development in five categories: physical, social, emotional, cognitive and general knowledge. Results vary widely by community, however on average about one in four children show early vulnerabilities which could impact future outcomes.

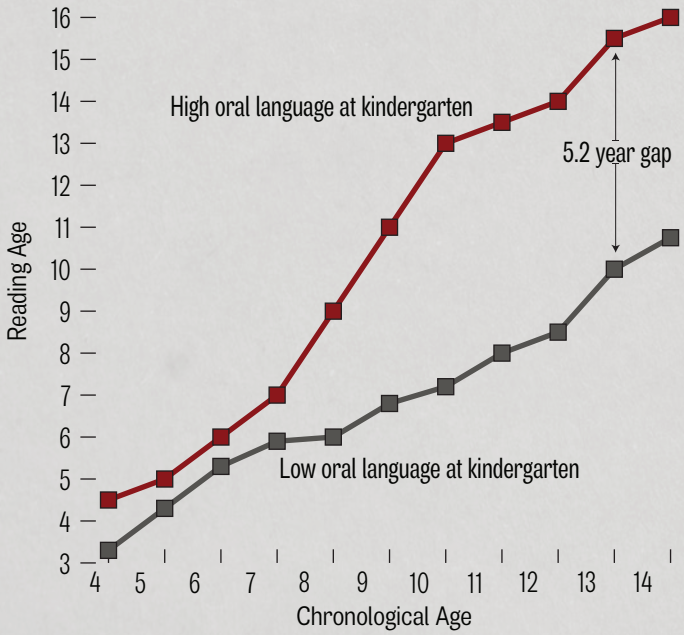
Figure A2
Adverse Influences on Early Brain Development and Potential Outcomes



Adapted from: Garner, A., Shonkoff, P. (2012); Kandel, E., Schwartz, J. & Jessel, T. (2000); Mustard, F., McCain, M., Shanker, S. (2007)

to have the process reversed by the school system. A large U.S. study illustrated in **Figure A3** shows how small problems at school entry magnify greatly so that a 9-month developmental gap at age 6 becomes 5.2-year gap at age 13.[3] Reducing academics inequities and their resulting long-term consequences are therefore dependent on improving the competencies of children before they start school.

Figure A3
Effects of Oral Language Weakness on Reading Growth

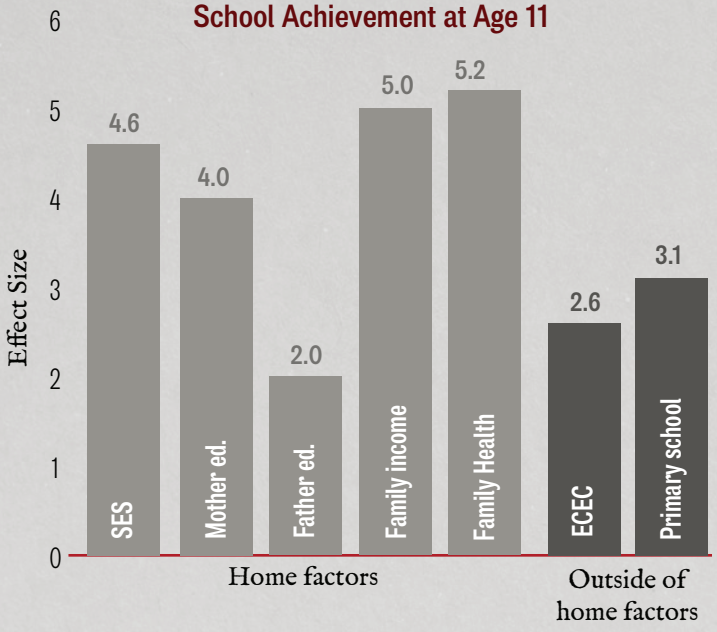


Quality ECEC programs have been found to amplify benefits for all children and help to mitigate the detrimental effects of adverse home and neighbourhood environments on school readiness (Schweinhart, 2012; Pianta & Howes, 2009). Children who benefit most from participation in quality ECEC programs, but who are the least likely to attend, are those living in families disadvantaged by poverty (McCain et al., 2011).

A large study from the United Kingdom shows the effect size of home versus outside factors, by age 11 (Sylva et al., 2008, Sammons et al., 2011). As shown in **Figure A4,** the home environment, including the health of family members and family income and socioeconomic factors, exert the most influence on child outcomes. However, the strongest outside-the-home influencers are participation in ECEC and the quality of early schooling. The effect size of ECEC was found to be stronger than home visiting, neighbourhood factors or parenting programs alone. Work from North Carolina even indicates that good

3 (Hart & Risley, 1995, Sparks et al., 2014)

Figure A4
Home and Outside Factors Affecting School Achievement at Age 11



quality early education can compensate children for lower quality primary schooling (Campbell, 2001). These studies provide important information for policy-makers. While it is difficult for public policy to alter family dynamics, it does exert considerable influence over the availability and quality of ECEC and primary schooling.

PUBLIC POLICY INFLUENCES ON ECEC

ECEC programs are most effective when they are universally available; are part of a children's service network; include health and parenting supports; and are accompanied by adequate paid parental leave and income transfers (Commission on Social Determinants of Health, 2008). The OECD Quality Network (Organisation for Economic Cooperation and Development, 2011) lists four factors required for effective ECEC programs:

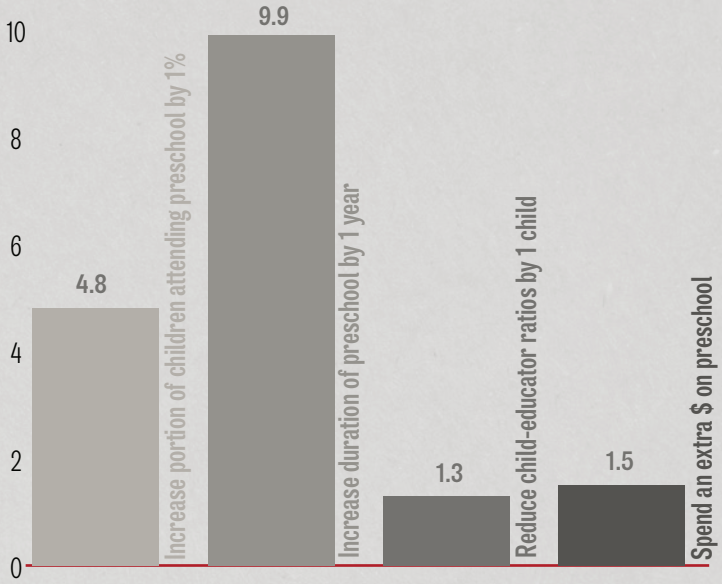
1. The children attend regularly. The effect size is greater when programs are available to all children rather than targeted to children in low-income families.
2. ECEC programs are adequately staffed.
3. Sufficient numbers of educators have a degree in early childhood education.
4. The teaching approach is child-centred, with a high portion of child initiated activities.

The Network does not set targets for staffing levels or educator qualifications, nor does it specifically define the curricula. Rather, it finds a correlation between these factors and outcomes for children. These are considerations for policy-makers as they grow access to ECEC services.

Results from the International Programme for International Student Assessment (PISA)[4] support these findings. The 2009 reading assessment of students at age 15 shows that, in most countries, pupils who attended preschool programs perform better than those who did not attend. Here public policy makes a difference.

Longer attendance in ECEC programs, smaller child-to-staff ratios and higher public expenditures per child during the preschool years all enhanced the reading scores of pupils at age 15, as shown in **Figure A5**. The largest differences are associated with a higher portion of preschoolers attending ECEC and the number of years children attend. Increasing the duration of preschool programming is associated with an average 10 point score increase for each year of ECEC attendance by children ages 3–6 years.

Figure A5
Score Point Difference on PISA Reading Assessment at Age 15 Generated by ECEC Policies



ECEC's positive influence on educational outcomes makes it a compelling area for investment. Education is the ultimate tool to address many economic and social challenges. It creates wider options for careers, raises employment and lowers chronic unemployment, leading to higher standards of living and a reduction in the social ills associated with poverty. A more educated workforce creates a more innovative and productive economy.

ECEC AND FERTILITY

Jurisdictions have reason to be concerned about declining birth rates. Aging populations and low birth rates are associated with stagnant economic growth and real concerns about the viability of

4 PISA is a triennial survey of the knowledge and skills of 15-year-olds near the end of their compulsory schooling. PISA provides comparative international data in three core-learning areas: mathematics, reading and science. Sixty-five jurisdictions participate in PISA. In Canada, only the 10 provinces participate in PISA.

social programs. On average, childless and retiree households do not spend as much of their income as families with children, and a larger portion of the disposal income of retirees is spent outside their communities. Yet the childless and retirees rely on the labour of the next generation to fund their old age security. Even those with private wealth rely on the goods and services produced by the next working generation. By raising tomorrow's workers, parents help to make everyone's retirement more viable.

Among developed countries, only in the U.S. (2.01) and France (1.99) are mothers having sufficient children to maintain population levels. New Brunswick's birth rate is 1.54, below the Canadian average of 1.61.[5]

Low birth rates arise from the conflict between working and raising children, which discourages women from childbearing. Governments respond with paid parental leaves and cash benefits to help families manage work-life balance but what seems to boost fertility most is available, affordable child care. By cutting the cost of combining work and motherhood, child care supports both. Studies show expanding child care to cover 60 percent of children younger than 5 years old led to an increase of 0.5 and 0.7 more children per woman. For jurisdictions struggling with the ramifications of very low fertility, increases of this magnitude would be sufficient to approximate replacement level fertility (OECD, 2011).

Child care not only influences a woman's decision to work, but also effects her ongoing attachment to the workforce and her decision to have children. Higher child care costs result in a lower birth rate for unemployed women, more women leaving employment and fewer women returning to paid work following childbirth. Low fee child care helped boost Quebec's maternal employment rate and its birth rate from the lowest among all Canadian provinces to one of the highest. Good, affordable child care signals to women that work and having children are compatible. That is good for women, good for productivity and good for New Brunswick revenues.

Funding, Governance and Service Delivery

Program Funding

New Brunswick's $44-million child care budget is distributed through five funding streams (See **Table B16**). Funds support staff wages and training, provide additional support for children with special needs, subsidize fees for low-income families and provide a small capital fund for repairs and renovations. The only fund that offsets child care operating costs is the Quality Improvement Funding Supports (QIFS) which supplements staff wages to a maximum of $5/hour. QIFS is directed at improving staff wages to support recruitment and retention and in doing so, offset pressures on parent fees.

5 Statistics Canada, CANSIM, table 102–4505.

Table A1: Funding Rate for Child Care Staff Receiving Wage Enhancement (QIFS)

$5.00/hour	Eligible employees who have recognized Early Childhood Education training or university degree in any discipline from an approved Canadian institution.
$3.07/hour	Primary staff members and Administrator/primary staff members who do not have recognized Early Childhood Education.
$2.75/hour	Administrator and Relief Staff who do not have recognized Early Childhood Education training or a university degree.

Source: Quality Improvement Funding Support Program (2015-2016) Handbook

The QIFS is administratively heavy, involving an annual application and quarterly reporting of staff hours by operators, and the processing of monthly payments to 756 operators by the department. Operators also receive a 14 percent administrative fee. The QIFS is also a difficult process to oversee. Despite increases to the fund, child care staff reported little movement to their wages between 2010–2014, according to the Early Childhood Education Report, while child care fees rose. If the province were to consider any major expansion of child care, the current QIFS process would be not be sustainable.

Public contributions for child care are low in New Brunswick. The QIFS subsidizes operating costs by about $1,700/space on average, or about 25 percent of overall costs, leaving parent fees to cover the remaining 75 percent. This is high in comparison to PEI where parents contribute 50 percent of operating costs or Quebec where parent fees account for only 15 percent.

High fees are a barrier to parents using regulated child care, but they are also a drag on quality. Child care providers struggle between setting fees low enough to attract parents and fill spaces and high enough to recruit and retain staff. Despite low wages parents still can't afford the fees, leading to vacancies that undermine program viability. Corners get cut and quality suffers. It is a squeeze play with no winners.

Governance and Service Delivery Options

New Brunswick child care services are unplanned, under resourced and fragmented. While Kindergarten, child care and family resource programs are under a single department, there remains a schism in the delivery of services. Child care is designed to support parent employment, while Kindergarten focuses on children's cognitive development. Separate funding, mandates and oversight for family support and intervention programs create further divisions and challenges for families. Families, particularly those with multiple children and/or children with special needs, get their children's care in one place, education in another, parenting supports in still another and travel further afield for special needs supports.

Reviews of delivery models in Ontario (Corter et al., 2012; Janmohamed et al., 2014) and Atlantic Canada (HERG, 2012) found that when programs were consolidated at a single site (usually the school), absenteeism decreased, there was greater compliance addressing special needs and parental stress was reduced. Staff members benefited from working in inter-disciplinary teams. Strategies for children with special needs were shared and applied by all staff working with the children, often reducing the amount of time special interventions were required. Moreover, integrated programming was found to serve more families for the same costs.

As shown in **Table A2**, In comparison to other provinces New Brunswick's qualifications for early childhood educators are not high. Its maximum academic requirement is a 1 year certificate and the density of trained educators per children is the lowest in Canada. A process is underway to have all directors and primary staff members working with infants and preschoolers in centre-based facilities take 30 hours of training in the designated early learning curriculum. The University of New Brunswick is also developing an online degree program in ECE. These may provide a model to improve workforce qualifications and develop professional leadership.

Following the example of other jurisdictions New Brunswick may be advised to adjust its age span for child care. For example Quebec regulates programs for children 0–4 years under its day nurseries legislation. After school care for children 5–12 is guided by program standards overseen by schools. Ontario allows recreation programs to provide out of school care for children 9–12 years.

A concentration on children 0–8 years allows for more intentional pre- and in-service training and more focused programming. It also mirrors the 0–8 early learning continuum the Department of Education and Early Childhood Development has instituted.

Given the underdeveloped infrastructure for child care in New Brunswick it would be both difficult and expensive to expand services from the current base. However, there is strength in NB's school system. Schools exist in every community. They are designed for children and many, at least in rural areas, have surplus space. There is capacity within the school infrastructure to directly operate child care and to align child care/early childhood services for younger children, creating a continuum of care from infancy through Kindergarten and into school.

Schools are also well also placed to address access inequities. As child care licence holders they are able to provide options, particularly in small communities where no child care providers exist. The school's classrooms, libraries, gyms, playgrounds and kitchens and lunchrooms are able to serve children and families during and outside regular school hours.

Concerns about schools institutionalizing the care and playtime of children are acknowledged. However, considerable national and international evidence documents that when schools expand their mandates to include programming for younger children, after-hours care and family activities, they become more responsive to the communities they serve. In turn, community trust in schools is enhanced (Corter et al., 2012; Janmohamed et al., 2014; HERG, 2012).

Table A2: Provincial Educational Requirements and Professional Standards for Staff in Regulated Child Care Centres/ Family Child Care

PROVINCE	ACADEMIC CREDENTIAL FOR PRIMARY STAFF	ENTRY LEVEL REQUIREMENT	PROFESSIONAL CERTIFICATION	PROFESSIONAL DEVELOPMENT	ECES/PRESCHOOL GROUP	FAMILY CHILD CARE ORIENTATION
NL	1 year certificate	Yes	Certification	30 hours / 3 years	1	Yes
PE	1 year certificate	Yes	Certification	30 hours/ 3 years	1	Yes
NS	2 year diploma	Yes	Classification	30 hours/ 3 years	2	Yes
NB	1 year certificate			One time/30 hours	0.5	
QC	3 year diploma				2	Yes
ON	2 year diploma		Registration		1	
MB	2 year diploma	Yes	Classification		1.3	Yes
SK	1 year certificate	Yes	Certification		1	Yes
AB	1 year certificate	Yes	Certification		1	
BC	2 year diploma	Yes	License	40 hours/5 years	1	Yes

Source: Early Childhood Education Report 2014

The following recommendations would operationalize this direction.

Recommendations for programs for children 5–12 years old:

1. Operators: Schools are responsible for sufficient before- and after-school and holiday programming to meet demand for children ages 5 to 12 years. Schools may directly operate the program or contract with child care, recreation or other program providers as appropriate. Schools, in consultation with parents, would establish the hours of operation.

2. Staffing: Staffing for school-aged programs includes persons with a range of qualifications responsive to the ages and interests of the children, including cultural and language workers, recreationists, early childhood educators, child and youth workers, educational assistants, teachers and high school students; supervised by staff knowledgeable of child development.

3. Curriculum: Validated program approaches will guide programs for older children. High Five is an example of a developmental program for middle childhood.[6]

4. Funding and fees: Schools assume the facilities costs for out of school programs. Staff wages and benefits, program supplies, and food are covered with parent fees. Schools may recoup reasonable administrative costs but will not generate excess revenue from the provision of after-school programs. School districts may establish centralized billing and fee collection systems to reduce administration. The Region of Waterloo provides an effective example.[7]

5. Schools that directly operate programming receive the same operational funding as available to child care centres.

PROGRAMS FOR CHILDREN 0–4 YEARS OLD AND THEIR FAMILIES

Existing early childhood programs serving younger children have the option of becoming Early Childhood Centres. Early Childhood Centres consolidate existing early childhood services within a community or catchment, including child care centres, community child care, child/parent drop-in, and family resource and information programs. Early Childhood Centres also provide a base for the delivery of pre- and post-natal and special needs programs and interventions. Early Childhood Centres follow the provincial early years curriculum, employ appropriately qualified staff, adhere to an established wage and fee schedule and have a parent advisory board.

To support the development of children who would not otherwise participate in an early years program, Early Childhood Centres are funded to provide up to 20 hours a week of programming for children 3–4 years old in their catchment.

Community child care providers are attached to an Early Childhood Centres to participate in professional development and access programming support and resources. Early Childhood Centres also provide a convenient location for families accessing intervention and special needs supports. In this way, intervention programs come to families, rather than requiring parents to bring children to multiple locations.

Recommendations for programming for children ages 0–4 years:

1. Consolidate current early childhood service and funding streams, including licensed child care centres, community day care homes, child/parent drop-in, resource and information programs into Early Childhood Centres. Early Childhood Centres provide full-, part-time and occasional child care for children ages 0–4 years; drop-in play programs for children with their parents/guardians and/or caregivers; parenting information and resources; and are a platform to deliver public health and intervention services.

2. Early Childhood Centres are funded to provide 20 hours a week of programming to all children 3–4 years old.

3. Operators: Early Childhood Centres may evolve from new agencies or by expanding the mandates of existing early childhood programs.

4. Staffing: Staffing complement includes early childhood educators, family support workers and special needs and intervention staff. The mix of qualifications responds to the varied needs of families, allows for staffing efficiencies and provides staff with opportunities to broaden their skill sets to encompass both child care and family supports.

5. Curriculum framework: Early Childhood Centres use the *New Brunswick Curriculum Framework for Early Learning and Child Care: English* and the *Curriculum éducatif pour la petite enfance francophone du Nouveau-Brunswick: Français*, along with the accompanying support tools.

6. Location: The preferred location for Early Childhood Centres is in schools. Newly built and renovated schools would include sufficient designated space for viable Early Childhood Centres. Early Childhood Centres would have priority for surplus space in schools and enjoy security of tenure.

6 http://highfive.org/what-high-five/mission-vision-and-principles

7 www.wcdsb.ca/schools/Register for School/Elementary Registration/kinder/pdf/FAQ_-_OneList_Billing_Invoices.pdf

7. Funding and fees: Consolidate current operational funding streams for child care and family resource centres, information and referral programs into a single grant to Early Childhood Centres based on staffing needs. This promotes program stability while encouraging the Early Childhood Centres to maximize outreach to families. It reflects the type of funding formula used for after school care — another step in aligning the two systems.

8. Programs that choose not to convert to, or merge into, Early Childhood Centres may continue operating under current funding and regulatory rules. All service expansion will use the model of school-offered programming for 5–12 year olds and integrated Early Childhood Centres for children 0–4 years.

Recommendations for infrastructure supports:

9. Infrastructure support: Include child care in the planning mandates of school districts and municipalities. Restrict new licenses to programs that fall within the children's service plan.

10. Accountability: Establish a province wide fee and salary scale. Manitoba, PEI and Quebec provide examples of efficient, transparent fee and wage schedules. These systems are administratively effective allowing department resources to be refocused on supporting program quality.

11. Transition team: Establish a transition team with representatives in and outside government to provide expert support to schools and child care providers transitioning to the new service delivery model.

B: Predicting the Costs and Benefits of Investing in Child Care

The child care sector is unique as it affects those providing care and those employed in the service, it creates opportunities for parents who are freed from child care duties, and it impacts the child whose human capital is enhanced. Predicting the costs and benefits of the sector is challenging because of all the layers involved.

This report uses a variety of techniques to determine the economic benefits of public spending on child care. We first focus on the how the child care sector is connected to other industries and how investing in child care affects these other industries. This analysis uses input-output models to estimate how investing in child care leads to increased spending in other industries.

We use estimates from previous studies to predict how investing in child care in New Brunswick will affect the labour market participation of mothers. We then estimate how these new workers will stimulate economic activity and ultimately affect the GDP. We also estimates the new tax revenue and income assistance savings that will be generated as more mothers enter the labour market.

Calculating the costs of child care is a bit more straightforward. We first estimate the increased demand for spaces based on providing child care in New Brunswick at the provincial target of 65 percent. Once we have an estimate of the new spots needed, we can calculate the programming and capital costs to provide these spots.

All the different analysis outlined above help paint a picture of how investing in child care impacts the economy of New Brunswick. They provide guidance on the possible benefits and costs of increased public spending in the sector.

THE CHILD CARE SECTOR AS A SOURCE OF LOCAL ECONOMIC DEVELOPMENT

Public money for child care creates a ripple effect of spending; in other words, a dollar invested in child care leads to increased spending in other industries. For instance, child care programs spend money on salaries, supplies, food and rent, which in turn impacts other businesses in the supply chain. Therefore, to calculate the effect of the child care sector, it is important to quantify all the effects of spending in an industry on the entire economy.

An input-output analysis can be used to estimate the effct of child care spending on local economic development. This analysis is a quantitative economic technique that estimates the interdependencies between different industries in an economy. Government and private industry commonly use these input-output multipliers to show the direct and indirect effects. The direct effects can be considered the first round of impacts. This first round includes the potential impact on the GDP (gross domestic product[1]) of those industries that expand production to satisfy the increased demand for their product. The indirect effects result from backwards linkages in the economy, when the firms producing the commodity purchase additional goods and services from other firms. In the case of child care, the direct effects are the effects from the child care industry itself (i.e. salaries to workers, rent/mortgage on building, etc.). The indirect effects are the effects of the child care industry on other industries through the purchase of food, janitorial services, supplies, etc.

Input-output models are not a measurement of the full impact of the child care sector. They only calculate the links between one industry

1 The GDP is the monetary value of all the finished goods and services produced within a particular region during a specific time period.

and its suppliers. For instance, in the child care sector this would generally be supplies, labour and food. They do not capture the investment effects of caring for and educating young children. It also does not measure the role child care plays in supporting parents to work which we will separately estimate in the next section. Nor does it include money spent in households on other goods due to increased public spending on child care (induced effects). For example, they do not include the effect of a family spending more as a result of increased earnings from maternal employment.

To examine New Brunswick, this report will use multipliers compiled by the Industry Accounts Division from Statistics Canada. We have listed the GDP, Labour income and Jobs multipliers. The GDP multiplier calculates the total value added to the provincial economy by each dollar of increased direct spending. The labour income multiplier measures the overall increase in wages due to job growth (what workers have to spend). Finally, the employment multiplier is used to calculate the number of new jobs created. Finally, these multipliers are calculated within province and throughout all provinces. Within province does not include imports and exports from other provinces generated by increased spending on child care, whereas, the all provinces multipliers allows for inter-provincial trade. Both sets of multipliers are based on models from 2010 and include the most up-to-date information available.

Table B1 lists the multipliers calculated by Statistics Canada for the Social Assistance industry for each province.[2] Statistics Canada does not calculate multipliers for child care services specifically, so this report will use social assistance as a proxy for child care services. The Social Assistance industry is a broader category of industries that includes individual and family services, community food and housing, vocational rehabilitation services, and child day care services. Therefore, child care is a subset of the broader social assistance industry. By using a proxy we are making the assumption that the social assistance industry has similar levels of interconnectedness between industries as child care alone. This is a reasonable assumption.

2 Data for Newfoundland and PEI not available.

Table B1: Provincial Input-Output Multipliers for Social Assistance (Includes Child Care), 2010

	WITHIN NEW BRUNSWICK			ALL PROVINCES		
	TYPE I MULTIPLIERS			TYPE I MULTIPLIERS		
PROVINCE	GDP BASIC PRICE	LABOUR INCOME	JOBS	GDP BASIC PRICE	LABOUR INCOME	JOBS
AB	1.58	1.42	1.22	1.75	1.55	1.29
BC	1.23	1.20	1.09	1.30	1.25	1.11
MB	1.75	1.84	1.26	2.18	2.32	1.37
NB	**1.15**	**1.10**	**1.05**	**1.29**	**1.18**	**1.08**
NL	x	x	x	x	x	x
NS	1.33	1.22	1.14	1.51	1.34	1.19
ON	1.11	1.08	1.04	1.12	1.09	1.05
PE	x	x	x	x	x	x
QC	1.27	1.20	1.12	1.35	1.26	1.15
SK	1.70	1.59	1.16	2.15	2.00	1.26

Source: Retrieved from Provincial Input-Output Multipliers, 2010, Catalogue no. 15F0046XDB. Compiled by the Industry Accounts Division /Statistics Canada

The data in **Table B1** can be interpreted as follows. Examining the first three columns, we can predict that every $1 spent on child care in New Brunswick will return $1.15 to the economy in increased spending and $1.10 in increased labour income. Finally, every additional job in child care creates 1.05 jobs. Another way to look at the employment multiplier is to estimate the number of jobs per million dollars spent on the industry. In this case, approximately 34 jobs will be created per million dollars of investment in child care. The next three columns look at the impact on inter-provincial trade generated by the expansion of child care. The estimates in **Table B1** can be considered conservative estimates of the real effect.

It is important to note that these effects are at the provincial level and do not indicate that the benefits would be uniformly distributed across the province. Some regions may benefit more than others, but we are not able to estimate this with the data available. For comparison **Table A** in the Appendix summarize multipliers for child care from different geographic areas and from a wide variety of authors.

When using multipliers, it is often preferable to make relative versus absolute comparisons. **Table B2** lists the rank of the social assistance multiplier compared to the other 152 industries in New Brunswick. Social assistance, which includes child care, is ranked 107 out of 152 industries in terms of creating economic growth, 115 in terms of creating labour income growth and 122 in employment impact. In other words investing in child care is a better economic prospect than investing in a third of the other industries in New Brunswick. These findings are in line with other studies from

Table B2: Rank of Input-Output Multipliers for Social Assistance (Out of 152 industries) in New Brunswick, 2010

	WITHIN NEW BRUNSWICK			ALL PROVINCES		
	TYPE I MULTIPLIERS			TYPE I MULTIPLIERS		
	GDP BASIC PRICE	LABOUR INCOME	JOBS	GDP BASIC PRICE	LABOUR INCOME	JOBS
RANK	107	115	122	91	121	123

Source: Retrieved from Provincial Input-Output Multipliers, 2010, Catalogue no. 15F0046XDB. Compiled by the Industry Accounts Division /Statistics Canada

different regions comparing industry multiplier effects.[3] **Table B** in the Appendix lists input-output multiplier effects for other industries and services in New Brunswick.

CHANGES IN WORKFORCE PARTICIPATION DUE TO CHILD CARE

Family favorable policies such as child care, allow parents to enter the work force. As seen in **Table B3**, New Brunswick's population of around 750,000, includes 88,865 children between the ages of 0 and 11. These children all potentially need child care services. **Table B4** shows that 62 percent of New Brunswick families include young children. Of these, lone parents head 16 percent of all families. The ability of lone parents to work is even more affected by child care availability.

Table B3: Number of Children in New Brunswick

TOTAL POPULATION	**750,352**
AGES 0–4	36,480
AGES 5–9	36,625
AGES 10–11	15,760
0–11 YEARS	**88,865**

Source: 2011 Canadian Census

Table B4: Percentage Breakdown of Families by Children and Heads of Household

FAMILIES WITHOUT CHILDREN	38
COUPLE FAMILIES WITH CHILDREN	46
FAMILIES WITH LONE FEMALE HEAD OF HOUSEHOLDS	13
FAMILIES WITH LONE MALE HEADS OF HOUSEHOLDS	3
TOTAL FAMILIES WITH CHILDREN	**62**

Source: 2011 Canadian Census

It is also helpful to understand the labour force characteristics of the individuals that may be affected by child care availability. The first labour force characteristic to examine is the labour force participation rate. The traditional way to report the labour force participation rate is to add up all employed adults plus all those who are unemployed but actively looking for work. These figures do not include individuals who are not looking for work but want a job (discouraged workers). These people are not seen in the traditional measure of labour force participation and often include parents of young children. **Table B5** shows that in New Brunswick, about 64 percent of the adult population is working or looking for work and of that 64 percent, about 10 percent are not employed. The female population has a lower labour force participation rate but also a lower unemployment rate.

3 See Centre for Spatial Economics (2009) and Liu, Ribeiro, and Warner (2004) for examples.

Table B5: Labour Force Participation in New Brunswick

PERCENT OF POPULATION IN LABOUR FORCE	64.1
PERCENT OF POPULATION UNEMPLOYED	10.4
PERCENT OF FEMALES IN LABOUR FORCE	59.9
PERCENT OF FEMALES UNEMPLOYED	8.3

Source: 2011 National Household Survey

New Brunswick has a high percentage of working mothers. **Figure B1** shows the employment rate for women (age 15–54) with at least one child by education levels. It highlights the strong correlation between educational attainment and participation in paid work. The employment rate is the percentage of women in the labour force working for pay.

It is important to determine child care needs across communities, rather than an overall provincial estimate. **Table B6** shows the percentage of families with a lone female head of household ranges from around 9 percent to more than double at around 20 percent depending on community. The percentage with lone male heads of households also vary significantly by community. **Table B7** further highlights the differences across communities by showing the labour force participation rate and unemployment rate for females across communities. As can be seen in **Table B7**, column 2, the labour force participation rate ranges from 44 percent (Dalhousie area) to 71 percent (Dieppe area) and the unemployment rate ranges from a low of four percent (Sussex area) to almost 30 percent (Neguac area). This report breaks New Brunswick into 33 communities (with the three biggest urban cores subdivided) following the New Brunswick Health Council community boundaries. **Table C** in the Appendix gives information on which areas belong to which communities and **Figure A** in the Appendix illustrates the community boundaries.

Figure B1

NB Employment Rates for Females With at Least One Child 0–9 years by Education Level

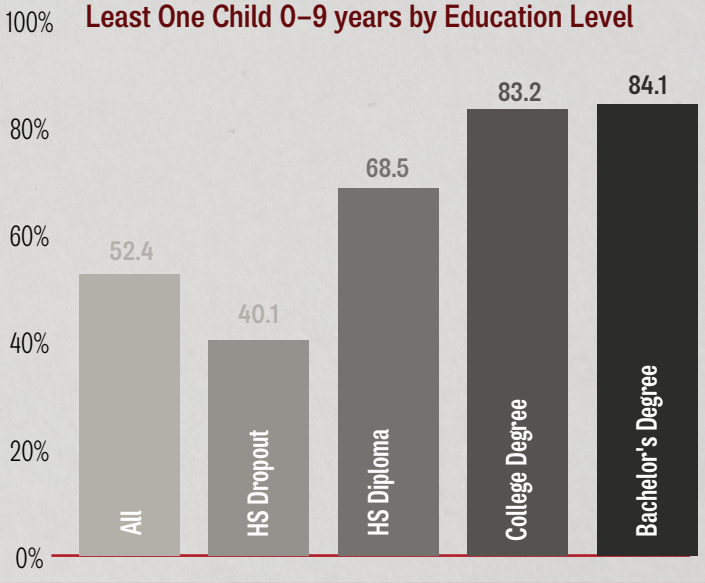


Table B6: Percentage of Households by Lone Heads of Households by Sex

COMMUNITY NAME	PERCENTAGE OF HOUSEHOLDS WITH LONE FEMALE HEAD	LONE MALE HEAD
Kedgwick Area	13.7	4.8
Campbellton Area	16.1	3.8
Dalhousie Area	13.4	3.8
Bathurst Area	11.1	3.2
Caraquet Area	15.9	4.3
Shippagan Area	18.5	5.7
Tracadie-Sheila Area	16.5	4.9
Neguac Area	17.8	5.2
Miramichi Area	13.8	3.4
Bouctouche Area	14.2	3.8
Salisbury Area	11.4	3.3
Shediac Area	9.2	2.9
Sackville Area	10.6	2.7
Riverview Area	11.2	3.0
Moncton	13.8	3.1
Dieppe Area	9.4	2.4
Hillsborough Area	10.2	3.3
Sussex Area	10.0	2.7
Minto Area	12.3	3.1
Saint John Area	19.5	4.0
Grand Bay-Westfield Area	9.5	3.8
Quispamsis Area	9.5	2.5
St. George Area	12.4	4.0
St. Stephen Area	14.5	2.8
Oromocto Area	9.9	3.0
Fredericton	13.8	2.9
New Maryland Area	9.9	3.0
Nackawic Area	9.6	3.1
Douglas Area	8.9	3.6
Florenceville-Bristol Area	11.9	3.0
Perth-Andover Area	12.9	4.0
Grand Falls Area	10.5	3.4
Edmundston Area	10.1	3.1

Source: 2011 National Household Survey

Table B7: Labour Force Statistics for Women by Region

COMMUNITY NAME	IN LABOUR FORCE (%)	UNEMPLOYED (%)
Kedgwick Area	-	-
Campbellton Area	48.9	8.4
Dalhousie Area	44.1	10.5
Bathurst Area	54.7	9.3
Caraquet Area	52.2	7.4
Shippagan Area	51.6	14.0
Tracadie-Sheila Area	55.9	8.8
Neguac Area	52.7	29.1
Miramichi Area	55.6	11.0
Bouctouche Area	55.4	10.3
Salisbury Area	58.8	7.9
Shediac Area	59.3	9.6
Sackville Area	63.2	13.0
Riverview Area	66.2	6.8
Moncton	65.2	6.8
Dieppe Area	70.7	5.7
Hillsborough Area	59.9	12.0
Sussex Area	57.1	4.1
Minto Area	49.6	17.3
Saint John Area	59.0	8.7
Grand Bay-Westfield Area	66.1	5.2
Quispamsis Area	63.3	6.6
St. George Area	58.4	15.5
St. Stephen Area	50.2	6.5
Oromocto Area	63.3	6.8
Fredericton	62.7	7.9
New Maryland Area	68.1	5.7
Nackawic Area	58.0	7.5
Douglas Area	66.1	8.9
Florenceville-Bristol Area	57.8	9.8
Perth-Andover Area	52.1	9.7
Grand Falls Area	57.2	8.4
Edmundston Area	56.8	6.6

Source: 2011 National Household Survey

IMPACT OF SUBSIDIZED CHILD CARE ON MOTHERS' EMPLOYMENT RATES

Many studies have estimated the impact of subsidized child care on mothers' employment rates, as shown in **Table B8**. These studies have spanned a number of different countries and timeframes. Although none are perfectly comparable to New Brunswick, there is still much to learn about potential impacts. Overall, evidence of the impact of subsidized child care on the labour supply of mothers is mixed. Germany and the Netherlands reported moderate increases, while subsidized child care in Norway and Sweden has had very little impact. The lowest effect size was found in Sweden. This is because at the time of Sweden's child care reform, over 80 percent of children ages 3–6 years were already in child care so there was little room for growth. By contrast in Kentucky, California and Québec, where maternal labour force participation was low, the enhanced availability of child care produced a much larger effect size. Subsidized child care had the biggest effect on single parents and those with low levels of education. In New Brunswick mothers with low education levels are least likely to be in the workforce, leaving considerable room for employment growth among this group in particular.

Due to differences in policies and geography, it is impossible to exactly predict what would occur in New Brunswick if child care services were expanded. However, it is possible to make educated guesses on the bounds of changes that may occur based on what has happened in other jurisdictions. For instance, using the most conservative estimates from other jurisdictions, if the employment rate of mothers[4] increased between 1 and 7 percentage points, then between 994 and 7,146 more New Brunswick mothers would be employed. However, we must still ask: Can the women who are freed up from child care duties find work? And if there are jobs, will they chose to work?

A large majority of mothers in New Brunswick who are unemployed also do not hold high educational qualifications. The occupations that will see the highest growth in demand over the next decade are listed in **Table B9**. It includes the top 25 occupations with the most anticipated job openings required to maintain current levels of economic activity due to attrition and new job growth between 2016 and 2025. It also lists the minimum level of education required for each occupation, the percent of women now in the job category and the average annual income for that occupation.

A large number of the most in-demand occupations in the next decade do not require high levels of education and already employ a large percentage of women. This would indicate that jobs are available for mothers entering the labour market however the majority of these jobs are not 9 to 5. Child care operating during traditional hours may not be a sufficient inducement for these women to work. It is also important to note that these are provincial projections. Job openings are not evenly distrusted throughout the province. While child care may enable more woman to work; jobs may not be available in their communities.

The occupations highlighted in the table do not take into account the potential of an expanded child care sector as a job creator itself. Most jobs created by the child care sector stay in the community as educators, support staff, cooks, maintenance and so on. Many of the jobs created by the child care sector would also be suited for women entering the job market.

4 We will count mothers as being women who are living with at least one child in the household and who are between 15–54 years old.

Table B8: Summary Table of Studies Estimating the Impact of Subsidized Child Care on Mothers' Employment Rate

LOCATION	STUDY	DATA SOURCE	EMPLOYMENT RATE PERCENTAGE POINT INCREASE OF MOTHERS
Canada (Québec)	Haeck et al. (2013)	National Longitudinal Survey of Children and Youth (1998–2008)	Overall: 6–13 % Two Parent: 5–14% Single H.S. Education: 27%
Canada (Québec)	Lefevbre (2009)	Survey of Labour and Income Dynamics (2002–2004)	Overall: 4.7–7.0% Low Education: 10.1–19.2%
Canada (Québec)	Baker et al (2008)	National Longitudinal Survey of Children and Youth (1994–2003)	Married: 7.7 %
Canada (Québec)	Lefevbre & Merrigan (2008)	Survey of Labour and Income Dynamics (1993–2002)	Overall period: 7.3% 1999–2002: 7.6–8.1%
Germany	Bauernschuster & Schlotter (2015)	German Socio Economic Panel (1996–2001)	5–8.2%
Netherlands	Bettendorf et al. (2012)	Labour Force Survey of Statistics Netherlands (1995–2009)	Overall: 1.5–3.4% Short-run effect: 1.5–2.3% Medium-run effect: 2.3–3.4%
Norway	Havnes & Mogstad (2011)	Administrative Registrars from Statistics Norway (1976–1979)	Overall: 1.1%
Sweden	Lundin et al. (2008)	Statistics SE (2001, 2003)	0.0068
United States (Kentucky)	Berger & Black (1992)	Survey of single mothers in Kentucky; Current population survey May 1988	8.4–25.3%
United States	Blau & Teken (2007)	National Survey of America's Families (1999)	0.33

IMPACT OF INCREASED MATERNAL EMPLOYMENT ON TAX REVENUE

Assuming that all the new entrants into the job market are high school dropouts, this would increase provincial tax revenue by $790 per worker, which would translate into $785,260 in tax revenue if the labour market expanded by 1 percent (994 new workers) to a $5,645,340 tax increase based on a labour force expansion of 7 percent (7,146 low-educated mothers entering the workforce). If all the new entrants into the job market are comparable to the average New Brunswick worker and earn the average wage for a woman with dependent children, this would increase tax revenue by $2,453 per worker. At the low end (994 new workers) this would increase tax revenues by $2,438,282. If the employed labour force increased by 7,146 average workers tax revenues would increase by $17,529,138. In addition, the government revenue would see increases due to lower use of social welfare, social transfers and other credits for low-income families.

Table B9: Top 25 Occupations with the Most Anticipated Job Openings between 2016 and 2025

	EDUCATION REQUIRED						
OCCUPATION	ON THE JOB TRAINING	HIGH SCHOOL DIPLOMA	COLLEGE/ APPREN-TICESHIP	UNIVERSITY DEGREE	GRADUATE DEGREE	% OF CURRENT WORKFORCE IS FEMALE	AVERAGE ANNUAL EMPLOYMENT INCOME
Registered nurses and registered psychiatric nurses				Yes		94.1%	$58,018
Retail and wholesale trade managers				Yes	Maybe	42.7%	$42,917
Nurse aides, orderlies and patient service associates		Yes				86.9%	$24,308
Retail salespersons		Yes				54.8%	$21,101
Administrative assistants			Yes			96.9%	$30,338
Other customer and information services representatives		Yes				65.7%	$26,682
Light duty cleaners	Yes					74.1%	$19,054
Home support workers, housekeepers and related occupations		Yes				94.9%	$15,075
Administrative officers			Yes			83.4%	$41,343
Janitors, caretakers and building superintendents	Yes					21.7%	$28,285
Transport truck drivers		Yes				1.4%	$38,731
General office support workers		Yes				88.4%	$32,342
Cashiers	Yes					82.6%	$11,518
Elementary school and kindergarten teachers				Yes		88.2%	$50,953
Cooks			Yes			58.7%	$17,065
Carpenters			Yes			1.9%	$29,415
Heavy equipment operators (except crane)		Yes				1.0%	$42,787
Licensed practical nurses			Yes			90.1%	$35,236
Construction trades helpers and labourers	Yes					4.2%	$27,201
Receptionists		Yes				92.2%	$23,155
Automotive service technicians, truck and bus mechanics and mechanical repairers			Yes			0.0%	$37,482
Food counter attendants, kitchen helpers and related support occupations	Yes					72.0%	$13,356
Security guards and related security service occupations		Yes				16.0%	$24,621
Financial auditors and accountants				Yes		56.0%	$60,124
Accounting and related clerks		Yes				84.1%	$31,865

Source: Top 25 occupations and education requirements provided by the Post-Secondary Education, Training and Labour Department, New Brunswick.
% of current workforce and income downloaded from http://www1.gnb.ca/0105/op-pp/Default.aspx?l=e.

THE EFFECT OF INCREASED MATERNAL EMPLOYMENT ON GDP

The GDP of New Brunswick was $31.9-Billion in 2013. The GDP is the monetary value of all the finished goods and services produced within a particular region during a specific time period. The GDP is used to gauge the health of the economy by examining its increase or decrease over time. If the GDP grows by 5 percent, it means that the economy has grown by 5 percent.

An important economic fact (Solow, 1956) is that the GDP basically reacts in proportion to the increase in the number of persons employed, provided that the new individuals hired are just as productive as existing workers. Numerous studies[5] of the impact of Québec's child care programs have estimated that women who are induced to enter the labour market are as productive as the average worker already in the labour force, based on the number of weeks and the number of annual hours worked. In addition, Lefebvre, Merrigan and Roy-Desrosiers (2011) found that available, affordable child care had the same impact on the employment rate of mothers of children ages 0–5 years as for women with and without a university degree. Therefore, for women with children 5 years old and younger, it can be assumed that their average productivity is similar to currently-employed workers.

Table B10: Effect of Maternal Employment Rate Increase on Income Tax Revenue

	DOLLAR INCREASE IN REVENUE	
EDUCATION LEVEL OF NEW ENTRANTS	1% INCREASE TO EMPLOYMENT RATE	7% INCREASE TO EMPLOYMENT RATE
Low	$785,260	$5,645,340
Average	$2,438,282	$17,529,138

Source: http://www2.gnb.ca/content/gnb/en/departments/finance/taxes/personal.html

We can create conservative estimates of GDP growth using a range of productivity estimates to estimate the overall effect on GDP of more mothers entering the workforce because of increased access to child care. To estimate the low end, we assume that the impact on employment is concentrated on those who did not complete high school and therefore assume that their level of productivity is also lower. Women, age 15–54 who did not complete high school and who has at least one child, earned $17,789 in 2011 according to the 2011 National Household Survey. The average woman with at least one child earned $34,971. The median income for the province was $55,090.

On the low end, if we assume only high school dropouts are induced to enter the labour market due to the availability of child care, they would be 32 percent as productive as a New Brunswick worker earning the median income. To estimate a conservative high end, we assume that the new entrants are similar to currently employed mothers, and are therefore 63 percent as productive as the average New Brunswick worker.

This information can be used to calculate the high- and low-end effect of increased maternal employment on GDP, which can be seen in **Table B11**. An estimated 994 to 7,146 more mothers will work, which represents an increase of 1–7 percentage points.[6] If all the new job entrants have low educational levels, this will increase GDP by between 0.16 percent and 1.12 percent. If the new entrants are similar to mothers already in the workforce, the GDP will increase between 0.32 percent and 2.24 percent. Therefore, GDP is calculated to increase by between $51-million and $357.2-million at the low end and between $102-million and $714-million using conservative upper bound estimates. These returns are lower than commonly reported because of the constraints on employment growth in New Brunswick. Mothers with post-secondary credentials are already largely in the labour force, meaning most job growth will involve women with high school education or less.

Table B11: The Effect of Increased Maternal Employment on GDP

	PERCENT INCREASE IN GDP		DOLLAR INCREASE IN GDP	
EDUCATION LEVEL OF NEW ENTRANTS	WITH 1% INCREASE IN EMPLOYMENT RATE	WITH 7% INCREASE IN EMPLOYMENT RATE	WITH 1% INCREASE IN EMPLOYMENT RATE	WITH 7% INCREASE IN EMPLOYMENT RATE
Low	0.16%	1.12%	$51,040,000	$357,280,000
Average	0.32%	2.24%	$102,080,000	$714,560,000

Source: http://www2.gnb.ca/content/gnb/en/departments/finance/taxes/personal.html

THE CHILD CARE SECTOR'S OTHER EFFECTS

Child care not only affects GDP and employment, it has also been shown to affect the use of social assistance. In particular, Andren (2005) and Connelly and Kimmel (2003) both found that child care availability has a large effect on the attachment of sole parents to social assistance. This has implications for New Brunswick as there were 2,849 parents with children ages 4 years and younger on income assistance in 2013–2014 and 3,111 parents with children 5–11 years of age on income assistance in 2013–2014.[7] While families rely on social assistance for a number of factors, accessible, affordable child care would allow many parents to transfer from welfare to work. As **Table B12** illustrates, if child care were available, an estimated 25 percent of parents would be able to leave social assistance for paid work, for an annual provincial savings of $17.1-million.[8]

5 Lefebvre & Merrigan (2008); Baker, Gruber & Milligan (2008); and Lefebvre, Merrigan & Verstraete (2009)

6 This is estimated at the provincial level. The data do not exist to estimate the increase at any level of geography lower than the province.

7 Data provided by the EECD/EDPE.

8 Calculation based on Schedule A of the Family Income Security Act for a 1 parent/1 child household receiving payments under the Transition Benefit Program

Table B12: Predicted Effect of Child Care (CC) on Income Assistance (IS) Costs

	NO CC	WITH CC	REDUCED SI CASES	SI SAVINGS
# FAMILIES ON IS WITH CHILDREN 0–4 YEARS	2,849	2137	712	$8,190,875
# FAMILIES ON IS WITH CHILDREN 0–11 YEARS	3,110	2333	778	$8,941,250
TOTAL	5,959	4469	1490	$17,132,125

The lack of child care can significantly hinder the acquisition of education for parents. This is especially true for younger parents who have children before they finish schooling. New Brunswick has a large number of teen births (mothers 14-19 years of age) and this number is on the rise. For example, in 2010 there were 34.8 births per 1000 to a teen mother in the province. This rate has increased by 17.6 percent since 2001.[9] When teenage parents do not receive the support and resources they need, a variety of detrimental consequences may occur. In particular, many young mothers do not graduate from high school, affecting future employment and earnings. More assessable child care services would help to ameliorate the effects of early parenthood by providing support to continue schooling or enter the labour market.

Child care availability can also help parents attain higher levels of education. Herbst and Tekin (2011) found that child care subsidies increase the chance a single mother will enroll in post-secondary education by 13 percentage points. In addition, they showed that child care subsidies increase the chance a single mother will participate in a job training program by 8 percentage points. Since mothers' educational levels are directly linked to child outcomes, educating mothers is an important way of breaking intergenerational cycles of poverty.

Child care also supports community stability particularly in more remote areas where it is an asset in recruiting and retaining essential workers such as teachers, health care and police.

COSTS OF CHILD CARE — PROGRAM COSTS

As part of its anti-poverty strategy New Brunswick established a target to provide child care to 65 percent of its children. This report calculates child care costs using the 65 percent target for children ages 0-8 years. We choose this age group because it mirrors directions the province is adopting around the organization of other children's services and programming, including curriculum approaches to early learning. As discussed earlier, focusing on younger children would enable more intentional programming. It also reflects a preference among children 9–12 years old who feel they have outgrown child care and wish to participate in alternative out-of-school activities.

9 Source: McKay, 2013

Roughly 7,000 babies are born in New Brunswick each year.[10] To examine the demand across New Brunswick in different communities, the current capacity along with the estimated demand for infant, preschool, and after school child care spaces are presented in **Table B13**. The estimated demand was calculated by community specific birth rates, populations and the 65 percent capacity rate. The assumption made is that the child care spot is in the same community as the child lives. There are some circumstances that this would not hold for instance if a parent used a child care centre near their work instead of home.

Table B14 highlights the predicted number of new spaces needed based on the data provided in **Table B13**. In particular, it is estimated that an additional 7,521 infant spaces, 7,667 preschool spaces, and 10,915 school ages spaces will be needed across the province. Some communities have met or exceeded the capacity goals for some child care levels. For instance, it is estimated that the Minto area has enough preschool and after school spaces. The same is true for six other communities. However, overall, most communities will need to increase their child care spaces to hit the 65 percent capacity target. **Table B14** also indicates that child care is a regional/community issue with strong differences across the province.

Table B15 lists the number of new staff positions required for the increase in child care spaces predicted in **Table B14**. Based on New Brunswick legislated staff:child ratios in child care centres, approximately 4,412 new staff would need to be trained and hired to accommodate the increased enrolment. This number varies significantly across communities. The public cost to educate these additional staff can be estimated at approximately $3,000/staff, which would cost around $13.2-million.

Public contributions as a percentage of the cost of operating child care are comparatively low in New Brunswick. **Table B16** shows the provincial budget for child care totaling $44-million. This supports staff wages and training, provides additional in class support for children with special needs, subsidizes fees for low-income families and has a small capital fund for repairs and renovations. The only fund that offsets child care operating costs is the Quality Improvement Funding Supports (QIFS) which supplements staff wages to a maximum of $5/hour. This subsidizes operating costs by about $1,700/space on average or about 25 percent overall cost of a space, leaving parent fees to cover the remaining 75 percent of costs. **Table B17** lists average child care fees by region. High fees are a barrier to parents using regulated child care, but they are also a drag on quality. Child care providers struggle between setting fees low enough to attract parents and fill spaces and high enough to recruit and retain staff.

10 New Brunswick has a roughly 9.18/1000 person birth rate each year, and a current population is estimated at 751,170. 2013 data found here: http://www.snb.ca/e/1000/1000-01/pdf/2013/T1.pdf

Table B13: Current Child Care Availability and Predicted Use of Child Care

				INFANT SPACES		PRESCHOOL SPACES		AFTER-SCHOOL SPACES	
COMMUNITY/REGION	BIRTH RATE (LIVE BIRTHS PER 10,000)	TOTAL POPULATION (2011)	ESTIMATED YEARLY BIRTHS	CURRENT CAPACITY	ESTIMATED DEMAND	CURRENT CAPACITY	ESTIMATED DEMAND	CURRENT CAPACITY	ESTIMATED DEMAND
Bouctouche Area	76.11	19,492	148	47	193	232	289	223	386
Salisbury Area	104.08	7,469	78	41	101	111	152	198	202
Shediac Area	82.10	30,352	249	97	324	407	486	401	648
Sackville Area	53.09	11,042	59	29	76	128	114	94	152
Riverview Area	98.47	23,529	232	0	301	0	452	0	602
Moncton	106.89	78,495	839	18	1,091	169	1,636	186	2,182
Dieppe Area	135.25	28,141	381	17	495	38	742	31	990
Hillsborough Area	75.86	5,317	40	21	52	86	79	52	105
Sussex Area	96.94	23,139	224	32	292	128	437	67	583
Saint John Area	111.18	75,091	835	11	1,085	45	1,628	37	2,171
Grand Bay-Westfield Area	92.32	10,122	93	12	121	75	182	67	243
Quispamsis Area	102.55	40,158	412	46	535	280	803	267	1,071
St. George Area	98.62	11,289	111	2	145	47	217	27	289
St. Stephen Area	89.50	15,260	137	75	178	263	266	408	355
Minto Area	75.21	9,273	70	59	91	334	136	340	181
Oromocto Area	139.80	18,427	258	99	335	349	502	560	670
Fredericton	113.44	56,224	638	66	829	396	1,244	497	1,658
New Maryland Area	99.13	25,846	256	312	333	1,537	500	2,073	666
Nackawic Area	84.48	11,266	95	72	124	550	186	1,065	247
Douglas Area	101.80	15,803	161	272	209	1,195	314	1,072	418
Florenceville-Bristol Area	105.76	27,019	286	0	371	41	557	145	743
Perth-Andover Area	89.98	10,018	90	61	117	771	176	778	234
Kedgwick Area	89.95	5,673	51	15	66	65	100	57	133
Grand Falls Area	97.09	16,465	160	185	208	1,330	312	1,645	416
Edmundston Area	81.21	26,860	218	69	284	250	425	463	567
Campbellton Area	74.15	12,971	96	36	125	191	188	275	250
Dalhousie Area	63.91	14,926	95	12	124	69	186	98	248
Bathurst Area	72.70	33,041	240	89	312	581	468	526	625
Caraquet Area	64.64	14,468	94	13	122	169	182	295	243
Shippagan Area	71.13	15,086	107	45	139	171	209	219	279
Tracadie-Sheila Area	84.67	14,221	120	10	157	180	235	306	313
Neguac Area	88.85	8,656	77	23	100	64	150	26	200
Miramichi Area	83.83	36,032	302	84	393	455	589	382	785

Table B14: Predicted Number of New Spaces Needed by Community/Region

COMMUNITY/REGION	INFANT SPACES	PRESCHOOL SPACES	AFTER SCHOOL SPACES
Bouctouche Area	146	57	163
Salisbury Area	60	41	4
Shediac Area	227	79	247
Sackville Area	47	0	58
Riverview Area	301	452	602
Moncton	1,073	1,467	1,996
Dieppe Area	478	704	959
Hillsborough Area	31	0	53
Sussex Area	260	309	516
Saint John Area	1,074	1,583	2,134
Grand Bay-Westfield Area	109	107	176
Quispamsis Area	489	523	804
St. George Area	143	170	262
St. Stephen Area	103	3	0
Minto Area	32	0	0
Oromocto Area	236	153	110
Fredericton	763	848	1,161
New Maryland Area	21	0	0
Nackawic Area	52	0	0
Douglas Area	0	0	0
Florenceville-Bristol Area	371	516	598
Perth-Andover Area	56	0	0
Kedgwick Area	51	35	76
Grand Falls Area	23	0	0
Edmundston Area	215	175	104
Campbellton Area	89	0	0
Dalhousie Area	112	117	150
Bathurst Area	223	0	99
Caraquet Area	109	13	0
Shippagan Area	94	38	60
Tracadie-Sheila Area	147	55	7
Neguac Area	77	86	174
Miramichi Area	309	134	403
Provincial Totals	**7,521**	**7,667**	**10,915**

Source: Current child care capacity provided by Education and Early Childhood Development Department, New Brunswick. Birth rate and population by community used to calculate estimated demand provided by the New Brunswick Health Council.

Table B15: Predicted Number of New Staff Positions Required by Community/Region*

COMMUNITY/REGION	INFANT SPACES	PRESCHOOL SPACES	AFTER SCHOOL	TOTAL
Bouctouche Area	49	8	12	69
Salisbury Area	20	6	0	26
Shediac Area	76	12	17	105
Sackville Area	16	0	4	20
Riverview Area	100	67	43	210
Moncton	358	217	141	716
Dieppe Area	159	104	68	331
Hillsborough Area	10	0	4	14
Sussex Area	87	46	37	169
Saint John Area	358	234	151	743
Grand Bay-Westfield Area	36	16	12	65
Quispamsis Area	163	77	57	297
St. George Area	48	25	19	91
St. Stephen Area	34	0	0	35
Minto Area	11	0	0	11
Oromocto Area	79	23	8	109
Fredericton	254	125	82	462
New Maryland Area	7	0	0	7
Nackawic Area	17	0	0	17
Douglas Area	0	0	0	0
Florenceville-Bristol Area	124	76	42	242
Perth-Andover Area	19	0	0	19
Kedgwick Area	17	5	5	28
Grand Falls Area	8	0	0	8
Edmundston Area	72	26	7	105
Campbellton Area	30	0	0	30
Dalhousie Area	37	17	11	65
Bathurst Area	74	0	7	81
Caraquet Area	36	2	0	38
Shippagan Area	31	6	4	41
Tracadie-Sheila Area	49	8	0	57
Neguac Area	26	13	12	51
Miramichi Area	103	20	29	151
Provincial Totals	**2,507**	**1,132**	**773**	**4,412**

*Estimated demand for new staff based on legislated child:staff ratios. Does not distinguish between qualified and non-qualified staffng.

Table B16: Child Care Program Expenditures

	2015 –2016
Quality Improvement Funding Supports (QIFS)/ Wage grants	$23,591,900
Early Learning and Child Care Services (ELCC) On line course curricula	$1,825,000
E.C.I. Support Workers	$2,376,700
Day Care Assistance (DAP)/ Fee subsidies	$15,544,000
ELCC Trust Fund/ Capital fund	$800,000
Total public funding to child care	**$44,137,600**

Source: Department of Education and Early Childhood Development

Table B17: Average Parent Fees by Age and Region

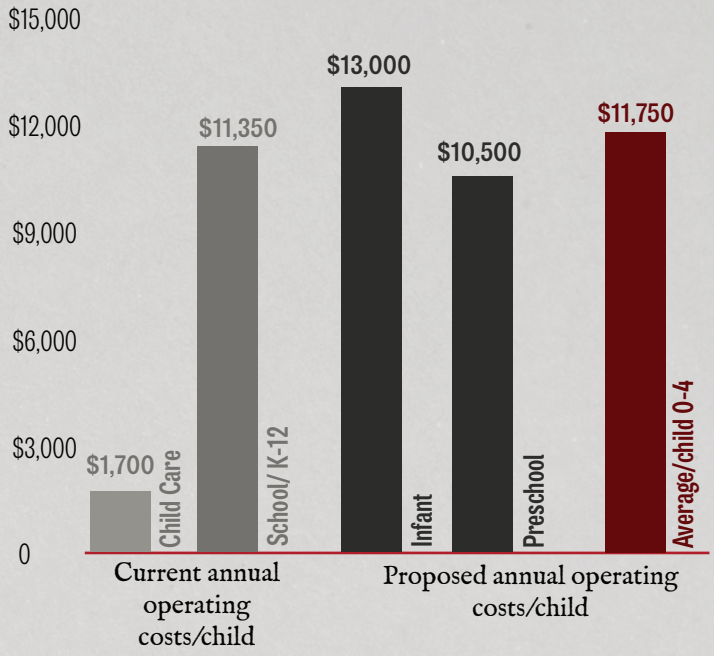
REGION NAME	INFANT	PRESCHOOL	AFTERSCHOOL
Chaleur	$32.16	$22.80	$12.54
Edmundston	$30.40	$26.25	$13.96
Fredericton	$33.13	$28.17	$15.38
Miramichi	$31.70	$26.74	$13.96
Moncton	$34.73	$29.88	$18.45
Peninsula	$32.59	$27.03	$12.99
Restigouche	$29.57	$25.32	$13.88
Saint John	$35.46	$28.82	$15.51
Province Average	**$33.35**	**$28.11**	**$15.72**

Source: Department of Education and Early Childhood Development

To address this challenge we set two benchmarks to model the costs of expanded access to child care. First we use Quebec's example to establish the public cost per space. In Quebec child care is publicly funded at $13,000 for an infant spot, $10,500 for preschool, and $2,890 for school age spaces. This model would bring public funding for preschool aged children closer to the per pupil funding that is available to children enrolled in K–12 education in New Brunswick. To establish the portion parents should pay, we provide two options, one from Quebec and the other from PEI. In Quebec parents' fees contribute 15 percent of program costs for infant and preschool children and 50 percent of the costs for school aged children. In Prince Edward Island, parents pay approximately 50 percent of the overall operating costs. **Figure B2** shows current public spending per child in child care and in school,[11] and proposed spending.

Table B18 represents the total additional public costs of increasing child care access in New Brunswick to cover 65 percent of children 0–8 years old, at the same per space funding levels as Quebec and showing the two different parent fee options. If parents were to pay fees similar to Quebec (15% infant/preschool fees and 50% of school aged fees paid by parents) the additional public cost would be $167-million per year. If parents were to pay the same portion as PEI

Figure B2
Current and Proposed Spending per Child in Child Care and School



(50% overall costs) it would cost approximately $104.9-million per year. **Table B18** does not include current child care expenditures. **Table D** in the Appendix lists additional costs by community.

COSTS OF CHILD CARE – CAPITAL COSTS

Capital costs could be contained if underutilized school and community spaces are used. A large number of child care programs across the country are housed in elementary schools and the same is probably true in New Brunswick. New Brunswick has not conducted a review of school space that would be suitable for child care programming. However, it is generally the case that there is little surplus space in urban schools but child care expansion could be accommodated within rural schools. Therefore, in this report, we will assume that there is no available space to expand child care in schools in the urban centres of Moncton, Saint John, and Fredericton, the three largest population centres in the province. Other communities are able to adsorb new child care spots without needing to build additional facilities but will need to renovate surplus space in schools. In addition, we assume that existing school space can be made available to accommodate school age child care, therefore capital costs for this age group are not included.

The New Brunswick Regulation 83-85 under the Family Services Act (O.C. 83-457) requires a minimum of 3.25 square metres of usable indoor floor space per child. This is exclusive of offices, hallways, washrooms, lockers, kitchen facilities, shower rooms and isolation rooms.

11 McCuaig & Akbari, 2014.

Table B18: Additional Yearly Expenditures for Increased Levels of Child Care

	ADDITIONAL GOVERNMENT CONTRIBUTION			
PARENT CONTRIBUTION % OF OVERALL COSTS	INFANT SPACES	PRESCHOOL SPACES	AFTER SCHOOL SPACES	ALL SPACES
15% infant/preschool; 50% school aged	$83,107,050	$68,427,975	$15,772,175	$167,307,200
50%	$48,886,500	$40,251,750	$15,772,175	$104,910,425

Based on 65 percent coverage for children 0- 8 years, funded at $13,000/infant space; $10,500/preschool space; $2,890/school age space

The median cost to build a new child care centre is $2,690 per square metre.[12] **Table B19** highlights the urban areas (Moncton, Saint John, and Fredericton) where new childcare facilities would need to be built to accommodate excess demand for childcare spaces. It indicates the legislated minimum required space needed to serve those children and the estimate cost to build new facilities. Providing new facilities for the estimated 4,309 infant and 5,684 preschool children would cost approximately $87.4-million. **Table E** in the appendix provides a breakdown of capital costs by community.

12 This figure was provided by the EECD/EDPE. This does not include the cost of buying new land to put the new child care centre.

Renovations to accommodate the additional child care spaces in the non-urban communities are estimated at $2,018 per square metre.[13] Accommodating an addition 3,212 infant spots and 1,982 preschool spots would cost approximately $34-million. Therefore, the total capital costs, for new centres would be $121.4-million. It is important to note that capital expenses will also have a multiplier effect. Considering the multiplier effect of non-residential construction on GDP and jobs for New Brunswick and when interprovincial trade is considered, the onetime initial investment would impact GDP by between $158.8-$206.3-million and create between 1,154 and 1,391 new jobs.

13 This figure was provided by the EECD/EDPE.

Table B19: Cost to Build or Renovate Child Care Centres per Legislated Space Requirement

	INFANT SPACES			PRESCHOOL SPACES		
URBAN/RURAL	NUMBER OF SPACES NEEDED	LEGISLATED REQUIRED SPACE (M^2)	ESTIMATED COST	NUMBER OF SPACES NEEDED	LEGISLATED REQUIRED SPACE (M^2)	ESTIMATED COST
Urban Total	4,309	14,005	$37,627,707	5,684	18,473	$49,693,354
Non-Urban Total	3,212	10,483	$21,063,763	1,982	6,443	$13,001,959
Provincial Totals	7,521	24,488	$58,691,470	7,666	24,916	$62,695,313

Note: The estimated cost is based on the median cost per square metre of $2,690 for building new child care centres in the urban centres (highlighted) and $2,018 per square metre for renovating existing space for non-urban areas (non-highlighted). Please note that the costs do not include the land cost for the new builds.

SUMMARY OF ECONOMIC COSTS AND BENEFITS

Child care is a unique industry and has a unique economic effect. Investing in child care has a multiplier effect on GDP and jobs, meaning that there is a ripple effect of spending money on child care on different industries and that it creates jobs. In addition, to the multiplier effect, it also increases the labour force participation and employment rate of parents. This increased employment increases GDP and tax revenue and decreases social assistance and government social transfers. Child care also affects parents in many ways such as allowing for increased levels of education which in turn will increase productivity. And finally, it affects children in terms of their human capital acquisition.

Using the following assumptions it can be reasonably estimated that if New Brunswick were to invest in its child care services with a target of providing coverage to 65 percent of all children from 0–8 years of age; and if the new spaces were funded at a level sufficient to support quality ($13,000 for an infant space, 10,500 for a pre-school space and $2,890 for a school age space), the benefits and costs would be as follows:

Benefits

- Every $1 spent on child care operations in New Brunswick is predicted to have a $1.15–1.29 impact on GDP and a $1.10–1.18 impact on labour income.
- Every $1 million of investment in child care creates about 34 jobs.
- One time capital spending of $121.4-million to accommodate new demand for child care would impact the GDP by between $158.8-$206.3-million and create between 1,154 and 1,391 new jobs.
- The employment rate of mothers is predicted to increase between 1 and 7 percentage points, which translates to between 994 and 7,146 more mothers in the workforce.
- The impact of increased maternal employment is calculated to increase GDP between 0.16 percent and 2.24 percent, If all the new job entrants have low educational levels, and between 0.32 percent and 2.24 percent points if the new entrants are similar to mothers already in the workforce. This translates into a $51-million to $357.2-million increase in GDP at the low end and between $102-million and $714-million using conservative upper bound estimates.
- If all new workers did not complete high school, tax revenue would increase by $785,260 with a 1 percent increase in labour force participation and by $5,645,340 with a 7 percent increase in participation. If all new workers are similar to the average mother now employed, tax revenue would increase by $2,438,282 with a 1 percent increase in employment and by $17,529,138 with a 7 percent increase in employment.
- Income assistance expenditures would decrease by $17.2-million.

Costs

- Approximately 4,412 additional early childhood educators would need to be trained and hired to accommodate the increase in children enrolled in child care programs. The cost to the province would be approximately $13.2 million if all new staff were ECE trained.
- Predicted new total yearly public expenditures due to an increase in child care capacity would be between $142.7–$174.4 million depending on the fee schedule chosen. This would be in addition to the current $44-million in expenditures.
- Predicted capital expenses of $121.4-million would be required if new child care centres are built and renovated to accommodate increased capacity for 0–4 year olds. Activities for school-age children should be accommodated within existing space in elementary schools.

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Appendix

APPENDIX A

To get some context, it is important to examine multipliers from different geographic areas and from a wide variety of authors. In particular, **Table A** lists the multipliers calculated for child care from a wide variety of sources and for a range of regions. These multipliers do not include estimates of the money spent in households on other goods due to increased public spending on child care (induced effects). For example, they do not include the effect of a family spending more as a result of increased earnings from maternal employment.

Table A lists both a GDP multiplier and an employment multiplier. A GDP multiplier for the child care industry estimates the total value added to the entire economy by each dollar of increased direct spending on child care services. The employment multiplier is an estimate of the number of jobs that would be created by the addition of one new job in the child care industry.

For example, Prentice and McCracken (2004) calculated a 1.16 GDP multiplier and 2.15 job multiplier for Winnipeg, Manitoba. This means that for every dollar spent on child care in Winnipeg, $1.16 is returned to the economy in increased spending. Every additional job in child care creates or sustains 2.15 jobs.

Appendix Table A: Input-Output Multipliers Calculated from Various Regions in Canada and the U.S.

REFERENCE	REGION	GDP MULTIPLIER	EMPLOYMENT MULTIPLIER
Prentice and McCracken (2004)[1]	Winnipeg, Manitoba	1.16	2.15
Prentice (2007a)[1]	Parkland, Manitoba	1.58	1.49
Prentice (2007b)[1]	St. Pierre Jolys, Manitoba	1.58	1.49
Prentice (2007c)[1]	Thompson, Manitoba	1.58	1.49
Pratt and Kay (2006)	New York State	1.35	
Warner (2009)	United States	1.49	
Liu, Ribeiro, and Warner (2004)	United States	1.94	1.41
	Alabama	1.44	1.24
	Alaska	1.47	1.27
	Arizona	1.52	1.27
	Arkansas	1.51	1.3
	California	1.52	1.25
	Colorado	1.54	1.27
	Connecticut	1.51	1.25
	Washington D.C.	1.42	1.19
	Delaware	1.44	1.25
	Florida	1.48	1.25
	Georgia	1.45	1.2
	Hawaii	1.48	1.29
Liu, Ribeiro, and Warner (2004)	Idaho	1.53	1.33
	Illinois	1.59	1.28
	Indiana	1.43	1.23
	Iowa	1.52	1.29
	Kansas	1.56	1.32
	Kentucky	1.46	1.25
	Louisiana	1.47	1.26
	Maine	1.46	1.29
	Maryland	1.5	1.26
	Massachusetts	1.49	1.26
	Michigan	1.5	1.25
	Minnesota	1.6	1.32
	Mississippi	1.32	1.18
	Missouri	1.6	1.31
	Montana	1.53	1.32
	Nebraska	1.51	1.28
	Nevada	1.37	1.17
	New Hampshire	1.49	1.28
	New Jersey	1.46	1.21
	New Mexico	1.56	1.34
	New York	1.52	1.26
	North Carolina	1.43	1.22
	North Dakota	1.53	1.31
	Ohio	1.5	1.28
	Oklahoma	1.55	1.31
	Oregon	1.52	1.31
	Pennsylvania	1.6	1.29
	Rhode Island	1.43	1.24
	South Carolina	1.38	1.2
	South Dakota	1.45	1.27
	Tennessee	1.5	1.24
	Texas	1.5	1.22
	Utah	1.59	1.3
	Vermont	1.51	1.3
	Virginia	1.46	1.22
	Washington	1.55	1.28
	West Virginia	1.45	1.28
	Wisconsin	1.54	1.31
	Wyoming	1.45	1.3

[1]Used primary education as industry in input-out analysis.

Appendix Table B: New Brunswick Input-Output Multipliers, 2010

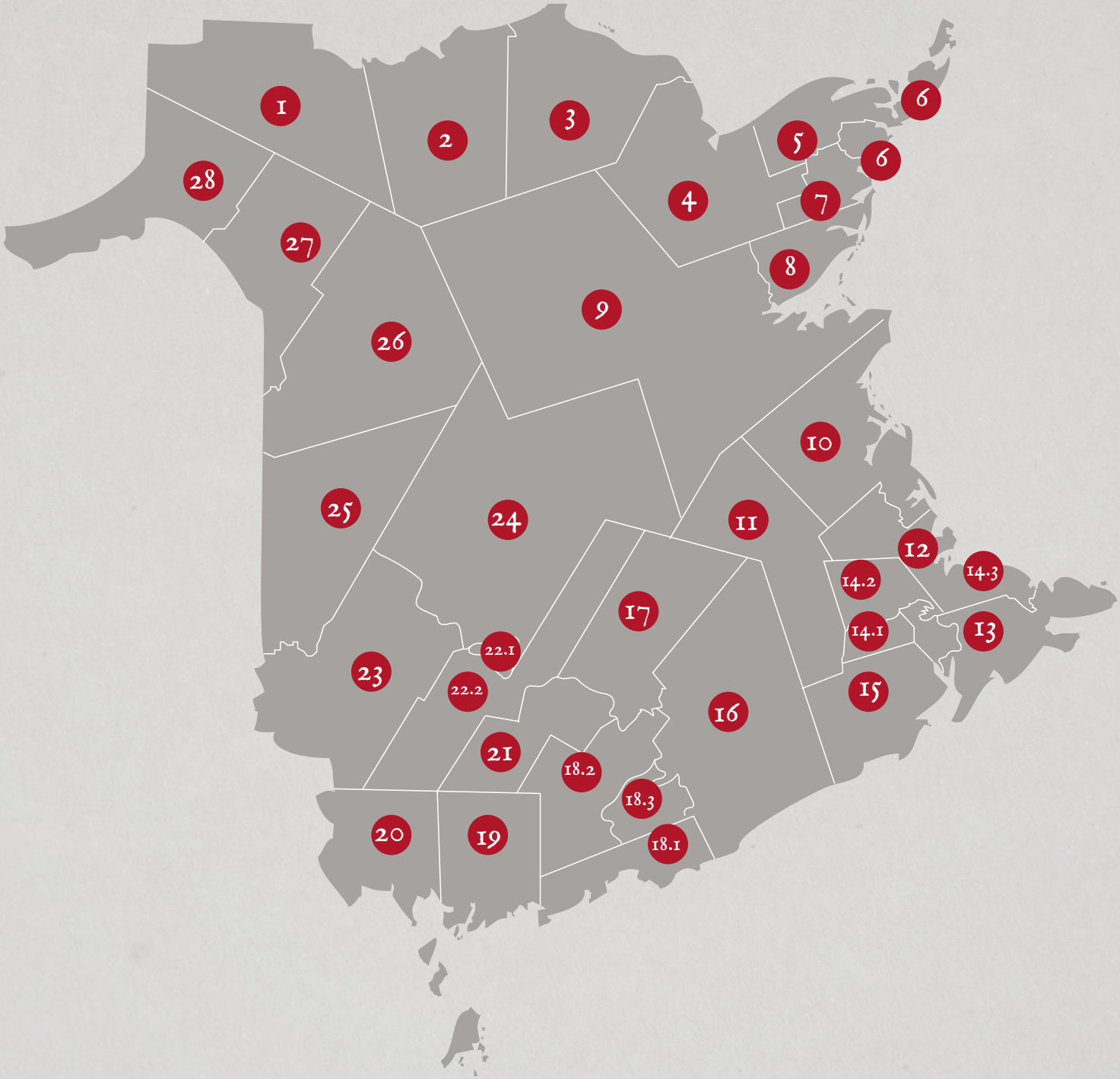
	WITHIN NEWBRUNSWICK			ALL PROVINCES		
INDUSTRY	GDP BASIC PRICE	LABOUR INCOME	JOBS	GDP BASIC PRICE	LABOUR INCOME	JOBS
Crop and animal production	1.42	1.46	1.27	1.93	2.07	1.58
Forestry and logging	1.60	1.57	1.59	2.00	1.91	1.92
Fishing, hunting and trapping	1.18	1.12	1.13	1.42	1.26	1.24
Support activities for agriculture and forestry	1.11	1.09	1.07	1.23	1.17	1.12
Mining, quarrying, and oil and gas extraction	1.19	1.40	1.59	1.39	1.90	2.20
Utilities	1.28	1.33	1.67	1.52	1.60	2.15
Residential construction	1.29	1.25	1.25	1.71	1.61	1.55
Non-residential building construction	1.31	1.24	1.23	1.70	1.54	1.48
Engineering construction	1.33	1.32	1.29	1.72	1.70	1.59
Repair construction	1.38	1.33	1.38	1.92	1.77	1.78
Other activities of the construction industry	1.18	1.34	1.33	1.36	1.68	1.58
Manufacturing	1.54	1.59	1.67	2.98	2.55	2.56
Wholesale trade	1.30	1.35	1.38	1.58	1.69	1.69
Retail trade	1.23	1.19	1.13	1.42	1.36	1.24
Transportation and warehousing	1.40	1.40	1.41	1.92	1.93	1.88
Information and cultural industries	1.19	1.27	1.39	1.39	1.59	1.78
Finance, insurance, real estate, rental and leasing and holding companies	1.37	1.65	1.81	1.62	2.09	2.28
Owner occupied dwellings	1.10	0.00	0.00	1.14	0.00	0.00
Professional, scientific and technical services	1.24	1.19	1.24	1.48	1.40	1.47
Administrative and support, waste management and remediation services	1.19	1.16	1.13	1.36	1.30	1.22
Educational services	1.22	1.19	1.13	1.49	1.40	1.25
Health care and social assistance	1.26	1.18	1.14	1.49	1.36	1.24
Arts, entertainment and recreation	1.50	1.42	1.33	1.79	1.67	1.46
Accommodation and food services	1.35	1.24	1.17	1.82	1.57	1.36
Other services (except public administration)	1.25	1.20	1.09	1.46	1.38	1.15
Repair, maintenance and operating and office supplies	0.00	0.00	0.00	0.00	0.00	0.00
Advertising, promotion, meals, entertainment, and travel	0.00	0.00	0.00	0.00	0.00	0.00
Transportation margins	0.00	0.00	0.00	0.00	0.00	0.00
Non-profit institutions serving households	1.32	1.18	1.14	1.54	1.33	1.23
Government education services	1.06	1.04	1.08	1.11	1.08	1.13
Government health services	1.17	1.11	1.12	1.29	1.19	1.20
Other federal government services	1.18	1.14	1.25	1.31	1.24	1.40
Other provincial and territorial government services	1.59	1.57	1.85	1.90	1.86	2.26
Other municipal government services	1.30	1.31	1.32	1.49	1.49	1.48
Other aboriginal government services	1.41	1.42	1.41	1.60	1.59	1.51

Source: Retrieved from Provincial Input-Output Multipliers, 2010, Catalogue no. 15F0046XDB. Compiled by the Industry Accounts Division / Statistics Canada

APPENDIX TABLE C & APPENDIX FIGURE A

It is important to look at the characteristics of different regions because there are many local labour market and social conditions that affect individuals. In this report, we break up New Brunswick in 28 communities (with the three biggest urban cores subdivided) following the New Brunswick Health Council community boundaries. **Table C** gives information on which areas belong to which communities and **Figure A** illustrates the community boundaries.

Appendix Figure A: New Brunswick Communities



Source: Appendix D from My Community at a Glance 2014, Technical Document (NBHC, 2014)

Appendix Table C: Community and Zone Information

ZONE	COMMUNITY	COMMUNITY NUMBER	NAME
1	Moncton / South-East Area	10	Bouctouche, Richibucto, Saint-Louis de Kent Area
1	Moncton / South-East Area	11	Salisbury, Petitcodiac, Harcourt Area
1	Moncton / South-East Area	12	Shediac, Saint-Antoine, Beaubassin East Area
1	Moncton / South-East Area	13	Sackville, Dorchester, Port Elgin Area
1	Moncton / South-East Area	14.1	Riverview and Coverdale
1	Moncton / South-East Area	14.2	Moncton
1	Moncton / South-East Area	14.3	Dieppe and Memramcook
1	Moncton / South-East Area	15	Hillsborough, Riverside-Albert, Alma Area
2	Fundy Shore / Saint John Area	16	Sussex, Norton, Sussex Corner Area
2	Fundy Shore / Saint John Area	18.1	Saint John, Simonds and Musquash
2	Fundy Shore / Saint John Area	18.2	Grand Bay-Westfield, Westfield, Greenwich Area
2	Fundy Shore / Saint John Area	18.3	Quispamsis, Rothesay, Hampton Area
2	Fundy Shore / Saint John Area	19	St. George, Grand Manan, Blacks Harbour Area
2	Fundy Shore / Saint John Area	20	St. Stephen, Saint Andrews, Campobello Island
3	Fredericton / River Valley Area	17	Minto, Chipman, Cambridge-Narrows Area
3	Fredericton / River Valley Area	21	Oromocto, Gagetown, Fredericton Junction Area
3	Fredericton / River Valley Area	22.1	Fredericton
3	Fredericton / River Valley Area	22.2	New Maryland, Kingsclear, Lincoln Area
3	Fredericton / River Valley Area	23	Nackawic, McAdam, Canterbury Area
3	Fredericton / River Valley Area	24	Douglas, Saint Marys, Doaktown Area
3	Fredericton / River Valley Area	25	Florenceville-Bristol, Woodstock, Wakefield Area
3	Fredericton / River Valley Area	26	Perth-Andover, Plaster Rock, Tobique Area
4	Madawaska / North West Area	27	Grand Falls, Saint-Léonard, Drummond Area
4	Madawaska / North West Area	28	Edmundston, Rivière-Verte, Lac Baker Area
4	Madawaska / North West Area	1	Kedgwick, Saint-Quentin and Grimmer
5	Restigouche Area	2	Campbellton, Atholville, Tide Head Area
5	Restigouche Area	3	Dalhousie, Balmoral, Belledune Area
6	Bathurst / Acadian Peninsula Area	4	Bathurst, Beresford, Petit-Rocher Area
6	Bathurst / Acadian Peninsula Area	5	Caraquet, Paquetville, Bertrand Area
6	Bathurst / Acadian Peninsula Area	6	Shippagan, Lamèque, Inkerman Area
6	Bathurst / Acadian Peninsula Area	7	Tracadie-Sheila, Saumarez and Saint-Isidore
7	Miramichi Area	8	Neguac, Alnwick, Burnt Church Area
7	Miramichi Area	9	Miramichi, Rogersville, Blackville Area

Source: Appendix D from My Community at a Glance 2014, Technical Document (NBHC, 2014)

Appendix Table D: Predicted Government Additional Yearly Expenditures for Increased Levels of Child Care in New Brunswick by Community/Region

				INFANT SPACES		PRESCHOOL SPACES		AFTER SCHOOL SPACES		ALL SPACES	
COMMUNITY/REGION	INFANT SPACES	PRE-SCHOOL SPACES	AFTER SCHOOL SPACES	15%	50%	15%	50%	50%	50%	15% INFANT/ PRESCHOOL; 50% SCHOOL AGED	50%
Bouctouche Area	146	57	163	$1,613,300	$949,000	$508,725	$299,250	$235,535	$235,535	$2,357,560	$1,483,785
Salisbury Area	60	41	4	$663,622	$390,366	$362,216	$213,068	$5,943	$5,943	$1,031,781	$609,377
Shediac Area	227	79	247	$2,507,883	$1,475,226	$704,510	$414,417	$356,793	$356,793	$3,569,186	$2,246,436
Sackville Area	47	0	58	$521,722	$306,896	$0	$0	$84,430	$84,430	$606,153	$391,326
Riverview Area	301	452	602	$3,328,169	$1,957,747	$4,032,205	$2,371,885	$870,444	$870,444	$8,230,819	$5,200,076
Moncton	1,073	1,467	1,996	$11,854,294	$6,973,114	$13,094,584	$7,702,696	$2,883,604	$2,883,604	$27,832,482	$17,559,415
Dieppe Area	478	704	959	$5,279,652	$3,105,678	$6,284,939	$3,697,023	$1,385,167	$1,385,167	$12,949,758	$8,187,868
Hillsborough Area	31	0	53	$347,384	$204,343	$0	$0	$76,404	$76,404	$423,788	$280,747
Sussex Area	260	309	516	$2,868,621	$1,687,424	$2,761,445	$1,624,379	$745,920	$745,920	$6,375,986	$4,057,723
Saint John Area	1,074	1,583	2,134	$11,870,972	$6,982,925	$14,127,777	$8,310,457	$3,083,041	$3,083,041	$29,081,789	$18,376,422
Grand Bay-Westfield Area	109	107	176	$1,209,793	$711,643	$956,986	$562,933	$254,272	$254,272	$2,421,052	$1,528,848
Quispamsis Area	489	523	804	$5,407,773	$3,181,043	$4,668,550	$2,746,206	$1,161,466	$1,161,466	$11,237,788	$7,088,714
St. George Area	143	170	262	$1,577,266	$927,804	$1,518,218	$893,070	$379,281	$379,281	$3,474,765	$2,200,154
St. Stephen Area	103	3	0	$1,133,286	$666,639	$29,807	$17,534	$0	$0	$1,163,093	$684,172
Minto Area	32	0	0	$349,871	$205,807	$0	$0	$0	$0	$349,871	$205,807
Oromocto Area	236	153	110	$2,606,555	$1,533,268	$1,368,479	$804,988	$158,624	$158,624	$4,133,659	$2,496,880
Fredericton	763	848	1,161	$8,432,575	$4,960,338	$7,565,664	$4,450,391	$1,678,018	$1,678,018	$17,676,257	$11,088,747
New Maryland Area	21	0	0	$232,832	$136,960	$0	$0	$0	$0	$232,832	$136,960
Nackawic Area	52	0	0	$571,613	$336,243	$0	$0	$0	$0	$571,613	$336,243
Douglas Area	0	0	0	$0	$0	$0	$0	$0	$0	$0	$0
Florenceville-Bristol Area	371	516	598	$4,104,812	$2,414,595	$4,607,212	$2,710,125	$864,041	$864,041	$9,576,065	$5,988,761
Perth-Andover Area	56	0	0	$620,885	$365,227	$0	$0	$0	$0	$620,885	$365,227
Kedgwick Area	51	35	76	$567,305	$333,709	$307,999	$181,176	$109,357	$109,357	$984,661	$624,241
Grand Falls Area	23	0	0	$252,002	$148,237	$0	$0	$0	$0	$252,002	$148,237
Edmundston Area	215	175	104	$2,371,077	$1,394,751	$1,565,139	$920,670	$150,503	$150,503	$4,086,718	$2,465,924
Campbellton Area	89	0	0	$983,906	$578,768	$0	$0	$0	$0	$983,906	$578,768
Dalhousie Area	112	117	150	$1,237,737	$728,080	$1,044,390	$614,347	$216,786	$216,786	$2,498,913	$1,559,213
Bathurst Area	223	0	99	$2,467,329	$1,451,370	$0	$0	$142,441	$142,441	$2,609,771	$1,593,812
Caraquet Area	109	13	0	$1,199,724	$705,720	$119,225	$70,132	$0	$0	$1,318,949	$775,852
Shippagan Area	94	38	60	$1,044,210	$614,241	$341,364	$200,802	$86,696	$86,696	$1,472,270	$901,740
Tracadie-Sheila Area	147	55	7	$1,619,117	$952,422	$488,998	$287,646	$10,191	$10,191	$2,118,306	$1,250,259
Neguac Area	77	86	174	$850,681	$500,401	$767,345	$451,380	$251,386	$251,386	$1,869,412	$1,203,166
Miramichi Area	309	134	403	$3,410,755	$2,006,327	$1,195,936	$703,492	$582,814	$582,814	$5,189,505	$3,292,632
Provincial Totals	**7,521**	**7,666**	**10,916**	**$87,015,883**	**$66,484,045**	**$71,644,113**	**$54,739,322**	**$15,772,721**	**$21,450,900**	**$167,301,595**	**$104,907,532**

Appendix Table E: Cost to Build or Renovate Child Care Centres by Region

	INFANT SPACES			PRESCHOOL SPACES		
COMMUNITY/REGION	NUMBER OF SPACES NEEDED	LEGISLATED REQUIRED SPACE (M^2)	ESTIMATED COST	NUMBER OF SPACES NEEDED	LEGISLATED REQUIRED SPACE (M^2)	ESTIMATED COST
Bouctouche Area	146	474	$956,550	57	186	$375,628
Salisbury Area	60	195	$393,879	41	132	$266,173
Shediac Area	227	738	$1,488,503	79	257	$517,706
Sackville Area	47	153	$309,658	0	0	$0
Riverview Area	301	979	$2,633,169	452	1,468	$3,949,754
Moncton	1,073	3,487	$9,378,839	1,467	4,768	$12,826,823
Dieppe Area	478	1,553	$4,177,136	704	2,289	$6,156,423
Hillsborough Area	31	102	$206,182	0	0	$0
Sussex Area	260	844	$1,702,611	309	1,006	$2,029,237
Saint John Area	1,074	3,491	$9,392,034	1,583	5,145	$13,838,889
Grand Bay-Westfield Area	109	356	$957,160	107	348	$937,417
Quispamsis Area	489	1,591	$4,278,503	523	1,700	$4,573,086
St. George Area	143	464	$936,154	170	553	$1,115,657
St. Stephen Area	103	333	$672,639	3	11	$21,904
Minto Area	32	103	$207,659	0	0	$0
Oromocto Area	236	767	$1,547,067	153	498	$1,005,622
Fredericton	763	2,480	$6,671,655	848	2,755	$7,410,960
New Maryland Area	21	68	$184,211	0	0	$0
Nackawic Area	52	168	$339,269	0	0	$0
Douglas Area	0	0	$0	0	0	$0
Florenceville-Bristol Area	371	1,207	$2,436,326	516	1,678	$3,385,591
Perth-Andover Area	56	183	$368,514	0	0	$0
Kedgwick Area	51	167	$336,712	35	112	$226,332
Grand Falls Area	23	74	$149,571	0	0	$0
Edmundston Area	215	697	$1,407,304	175	570	$1,150,136
Campbellton Area	89	289	$583,977	0	0	$0
Dalhousie Area	112	364	$734,633	117	380	$767,466
Bathurst Area	223	726	$1,464,432	0	0	$0
Caraquet Area	109	353	$712,072	13	43	$87,612
Shippagan Area	94	307	$619,770	38	124	$250,850
Tracadie-Sheila Area	147	476	$960,994	55	178	$359,338
Neguac Area	77	250	$504,904	86	279	$563,880
Miramichi Area	309	1,003	$2,024,384	134	435	$878,829
Urban Total	4,309	14,005	$37,672,707	5,684	18,473	$49,693,354
Non-Urban Total	3,212	10,438	$21,063,763	1,982	6,443	$13,001,959
Provincial Totals	**7,521**	**24,443**	**$58,736,470**	**7,667**	**24,916**	**$62,695,312**