

Implementing Sustainable Development: A Case Study of New Brunswick Municipalities

By

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ABSTRACT

Municipal planning processes in New Brunswick remain dictated by inflexible provincial policies with a focus on infrastructure. Even without the flexibility to plan, local governments in New Brunswick have incorporated the imperatives of sustainability within their planning processes to varying degrees. These processes may not be as formal as an Integrated Community Sustainability Plan framework, template or toolkits would advocate, signifying a more relevant solution to advancing municipal sustainability might be a sustainability planning framework that creates the capacity for local ownership and management of the planning process. Removing the hierarchical governance barriers currently limiting the implementation of municipal sustainability planning in New Brunswick is a critical first step.

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TABLE OF CONTENTS

ABSTRACT..... 4

ACKNOWLEDGEMENTS 5

LIST OF FIGURES 7

LIST OF TABLES:..... 7

LIST OF ACRONYMS 8

INTRODUCTION..... 9

Research Purpose..... 9

The Research Question..... 10

MUNICIPAL SUSTAINABLE DEVELOPMENT..... 11

Sustainable Development in a Municipal Context 11

An Overview of Municipal Sustainable Development in New Brunswick..... 12

Municipal Legislation 17

GAS TAX FUNDING PROGRAM AND SUSTAINABILITY PLANNING 19

The Gas Tax Funding Program..... 19

Integrated Community Sustainability Plans (ICSP)..... 19

MUNICIPAL GAS TAX FUNDING ALLOCATIONS IN NEW BRUNSWICK 20

ASSESSING SUSTAINABLE DEVELOPMENT AT THE MUNICIPAL SCALE 21

RESEARCH METHODOLOGY 22

Research Objectives..... 22

Research Scope..... 22

Researcher Biases and Assumptions 23

A Multi-Site Case Study Design..... 23

Case Study Site Selection Criteria..... 24

RESEARCH METHODS 24

Documentation Review 25

Key Informant Interviews Participation Selection 26

Interview data management..... 28

Participant Observations..... 28

Southwest New Brunswick regional service commission. 29

Municipal council sessions..... 29

Semi-structured Interviews	29
DESCRIPTION OF THE MUNICIPAL CASE STUDIES	30
Case Study Sites	31
Socio-Economic, Demographics and Geographic Descriptions	31
GROUNDING THEORY ANALYSIS	36
RESULTS	41
DISCUSSION	45
CONCLUSIONS AND RECOMMENDATIONS	49
LIMITATIONS OF THE RESEARCH	54
APPENDICES	71
Appendix 1: Interview Protocol	71
Appendix 2: Research Work Plan and Milestones	74
Appendix 3: Labour Statistics (Statistics Canada, 2011)	76
Appendix 4: Map of New Brunswick Regional Service Commissions	78
Appendix 5: Administrative Agreements-Principles Comparison	78

LIST OF FIGURES

- **Figure 1:** Canada’s Total Gas Tax Contribution to New Brunswick 2005-2010
- **Figure 2:** Distribution of Gas Tax Funding Projects by Category

LIST OF TABLES:

- **Table 1:** List of Integrated Community Sustainability Plans and Green Plans in New Brunswick
- **Table 2:** Metropolitan Areas, Population Rank and Population Change, 2006 to 2011
- **Table 3:** New Brunswick Gas Tax Allocations 2014-2018
- **Table 4:** Performance Measurement Framework Indicators

- **Table 5:** Sustainable Community Indicators
- **Table 6:** Eight Principles for Managing the Commons

LIST OF ACRONYMS

- **CEDA** - Community Economic Development Agencies
- **CIP** - Capital Investment Plan
- **CMA** - Census Metropolitan Area
- **DPC** - District Planning Commission
- **ESMI** - Environmentally Sustainable Municipal Infrastructure
- **GTF** - Gas Tax Fund
- **ICSP** - Integrated Community Sustainability Plan
- **ICP** - Intelligent Community Forum
- **NB** – New Brunswick
- **PMC** - Planning Management Committee
- **PMF** - Performance Measurement Framework
- **PRAC** - Planning Review and Advisory Committee
- **RSC** - Regional Service Commission
- **RSDA** - Regional Services Delivery Act
- **UNESCO** – United Nations Education, Scientific and Cultural Organization

INTRODUCTION

Research Purpose

Local government bodies, such as cities and municipalities, have the opportunity to provide leadership and advance sustainable development. Ling, Hanna, and Dale (2009) suggest that municipalities are the leaders, on the “front line of implementing sustainable community development” (p. 1) giving them the local capacity to drive sustainability. This places municipalities in the position to create “resilient and adaptable communities” (Dale, Foon, & Herbert, 2011, p. 7) on a case-by-case basis that defines sustainable development meeting individual community needs.

Defining sustainable development, or sustainability (commonly used interchangeably) (Robinson, 2004, p. 370), remains place based with no clear set of quantified indicators to measure progress toward sustainable development (UNEP, 2012). Kates, Parris, and Leiserowitz (2005, p. 13) advocate that by defining how sustainable development is measured, one can define sustainable development. A common definition of sustainable development notwithstanding, the issue is how it is “measured in practice” (Robinson, 2004, p. 374). As such, understanding the progress and evaluating the success of sustainability instruments (e.g., policy, funds, and plans) remains a case-by-case necessity that as noted by Bohringer and Jochemc (2007, p. 1) has led to a deluge of indicator lists and publications on the subject. This may be because, although global in context, sustainable development is place based, requiring a range of application scales (Dale, Dushenko, & Robinson, 2012, p. 46) and as such, a one size fits all approach that applies one set of generic indicators would not provide an accurate understanding of the local baseline conditions or an effective evaluation process.

Others suggest that the process of achieving sustainability and the learning process related to the understanding of the problems associated with it (Rametsteiner, Pulzl, Alkan-Olsson, & Frederiksen, 2011, p. 64) is as important as establishing a set of measurable indicators recognizing that it is an evolving process and a moving target (Dale A. , 2001). Bohringer and Jochemc (2007, p. 2) argue that overall, sustainability indicators are inconsistent and misleading with respect to guiding policy development. Nevertheless, even though sustainability may be inconsistent and place based, sustainability indicators were noted as a key step for decision-making processes by the United Nations (United Nations Conference on Environment and Development, 1992, p. 347). Furthermore, Dale et al (2012, p. 9) support the need for a set of sustainable indicators in every community. Many municipalities have varying or no clear target timeframes or indicators to measure the effectiveness of policies intended to advance sustainable development (Kates, Parris, & Leiserowitz, 2005, p. 17). This area of how to understand the progress of implementing sustainability, like every other area of sustainability, requires additional research, which is where this research is focused using four diverse New Brunswick case studies (Robinson, 2004, p. 378).

The Research Question

This research explores sustainable development in certain New Brunswick municipalities after the first decade of the Gas Tax Funding Program (2005 – 2014). It explores, specifically whether and if so how, municipalities in New Brunswick know they are advancing sustainable development, the role of the Gas Tax Fund and Integrated Community Sustainability Plans.

Questions used to guide the research included the following.

- 1) What process have municipalities used to develop sustainable development plans?

- 2) How are sustainable development indicators and benchmarks developed, understood and incorporated?
- 3) What challenges are there to advancing sustainable development? How are these challenges addressed?
- 4) How do municipal staff use the sustainable development plan?
- 5) Has the sustainable development plan been integrated into other planning processes, and what effect has this had on implementation?
- 6) How has the Gas Tax Funding Program influenced the plan development?
- 7) How do municipalities envision, within the context of sustainable development, utilizing the next phase of Gas Tax Funding Program?

This thesis provides an overview of municipal sustainable development, the role of the Gas Tax Funding Program in municipal planning processes, and planning policies in New Brunswick. A multi-case study research design and final grounded theory analysis as a result of constant data comparison (Corbin & Strauss, 2014) provide additional insights to guide future policy instruments such as the Gas Tax Funding Program 2005 – 2013 trilateral policy instrument, that may require municipal level sustainability planning processes.

MUNICIPAL SUSTAINABLE DEVELOPMENT

Sustainable Development in a Municipal Context

In 2005, Canadian municipalities received an incentive to develop Integrated Community Sustainable Plans (ICSPs) when the Canadian Federal Government introduced the Gas Tax Funding Program (GTFP) (Canada-New Brunswick, 2005). As a Federal – Municipal Government policy instrument, the GTFP supported municipal level sustainability planning in

the development of healthy and vibrant communities through the integration of economic, environmental, social and cultural sustainability objectives (Canada - New Brunswick, 2005).

The Gas Tax Funding Program required every municipality that received funds to develop an ICSP or similar document by March 2010 (Government of Canada, 2014). Additionally, recognizing the importance of public participation and a broader multi-stakeholder approach (Dale, Dushenko, & Robinson, 2012, p. 86), (Rametsteiner, Pulzl, Alkan-Olsson, & Frederiksen, 2011, p. 69), the GTFP required any plans developed to include public participation maximizing the benefits of setting and achieving sustainability objectives (Canada-New Brunswick, 2005).

An Overview of Municipal Sustainable Development in New Brunswick

In 1962, as a result of the New Brunswick Commission on Finances and Municipal Taxation's assessment of municipal government (referred to as the Byrne Commission) (Province of New Brunswick, 2015) the province legislated a new Municipalities Act. This centralizing of governance, seen at the time to address the sustainability of communities and provide equitable access to basic needs such as health and education, fundamentally changed the structure of rural administration in New Brunswick by abolishing the "County Councils" (2015) and establishing a new system under the authority of the Provincial Government.

In May 2007, more than 45 years after that transition, the Province of New Brunswick commenced a series of pilot projects intended to promote community sustainability as part of the New Brunswick Public Engagement Initiative and the agenda for achieving self-sufficiency by 2026 (Province of New Brunswick, 2008). Due in part to the results of those pilot projects, a New Brunswick Self-Sufficiency Task Force (The Self-Sufficiency Task Force, 2007, p. 36)

suggested that the Government of New Brunswick move quickly to implement the recommendations which had sent a message recognizing the need for transformative change, reinforced with the core imperatives of sustainable development. Contrary to the 1962 centralization of services, the messages recorded during the consultations suggested that decentralization and support of small communities was more sustainable. A key recommendation called for a comprehensive regional planning process for all areas of the province highlighting the environment, sustainable development, land use, housing infrastructure, and social and economic development. Coincidentally, at the same time the Canadian Commission for UNESCO recommended new methods for engaging citizens as integral to any planning process. (Council of Ministers of Education-Canada, 2007).

In 2010, more than 30 groups across New Brunswick collaborated, without provincial or municipal government involvement, to develop the Green Print: Towards a Sustainable New Brunswick (New Brunswick Environmental Network, 2010). This was an action plan that contained goals and “green metres” to measure progress of sustainability by governments and others.

In 2012, the provincial government literature described sustainable development as a “community that meets its present and future social, economic and environmental needs” with a tag line of “enough for everyone forever” (Province of New Brunswick, 2015, p. 2). This aligned with the Brundtland Commission’s original definition that sustainable development is meeting the needs of the present without compromising the ability of future generations to meet their own needs (Brundtland Commission, 1987). The provincial literature promoted planning processes and provided example table of contents for Integrated Community Sustainability Plans

or Green Plans that indicated support for, but did not require, municipalities to plan and/or include sustainability principles of social equity, economic viability and environmental quality (2015, p. 3).

In 2012, Margaret Tusz-King reinforced, in her report “Local Government, Sustainability and Climate change: A Resource for Elected Municipal Officials in New Brunswick (Tusz-King, M., 2012), the importance of local government as those closest to the people. As she reflected on climate change impacts, she noted that due to their community planning, emergency measures, provision of clean water and ability to understand the issues they were in the best position to govern the wellbeing of each community

More recently provincial planning staff have been promoting sustainable planning in a “Provincial Framework and Principles; Creating Sustainable Communities in NB” presentation (Province of New Brunswick, 2014) at conferences and workshops. Finally, communications accessed on the Government of New Brunswick website (Province of New Brunswick, 2015) reflect an enthusiastic promotion of citizen-based sustainability planning offering a toolkit that included an indicators fact sheet and referred users to one of the case studies used in this research, the City of Saint John.

Inconsistently, the Government of New Brunswick has not required municipalities to develop an Integrated Community Sustainability Plan (ICSP) or similar document as suggested in the Canada – New Brunswick Gas Tax Funding 2005-2014 agreement (Canada-New Brunswick, 2015) to access funds. As a substitute, the province used a portion of the Gas Tax Fund to employ consultants to work with the 15 Community Economic Development Agencies (CEDA) operating regionally in the province in 2006 (Province of New Brunswick, 2015).

Consultants were tasked with incorporating sustainability principles in regional plans that encompassed unincorporated as well as incorporated (i.e., municipalities) areas.

Even though not a requirement to access Gas Tax Funding, a number of New Brunswick municipalities did voluntarily complete an Integrated Community Sustainability Plan (ICSP) as described in Table 1. To do so, each municipality had to determine their own capacity to conduct the planning process as resources to do so were not specifically allocated by the province in the Gas Tax Funding transfers to municipalities (Province of New Brunswick, 2015).

Finally, the Government of New Brunswick website, when determining who is responsible for sustainability planning, provides links to several agency branches responsible for planning, sustainability and evaluation, as well as another for managing the Gas Tax Funding Program (GTFP). These are all branches within the Department of Environment and Local Government. This is evident in the working links provided to a Sustainable Development & Impact Evaluation Branch (Province of New Brunswick, 2015), a Provincial and Community Planning Branch (Province of New Brunswick, 2015), as well as a Community Funding Branch (Province of New Brunswick, 2015); only the latter is responsible for managing the GTFP.

Table 1: *List of Integrated Community Sustainability Plans and Green Plans in New Brunswick*

(Province of New Brunswick, 2015)

MUNICIPALITY	PLAN NAME
Alma	Vision Alma
Bouctouche	Un Plan Vert pour la Ville de Bouctouche

Cap-Pelé et Beaubassin-est	Une stratégie verte
Caraquet	Green Down Town Caraquet
Cocagne	Transition Town
Dieppe	5 Year Green Plan
Fredericton	First to Kyoto
Grand Falls	Greening Grand Falls' Town Services
Kedgwick	Kedgwick Green Plan
Memramcook	Le plan vert
Moncton	Adapting to the New Millennium
Petitcodiac	Petitcodiac and Area Sustainability Strategy
Port Elgin	Picture Port Elgin
Sackville	Sustainable Sackville
Saint-Isidore	Village of Saint-Isidore Green Plan
Saint John	Integrated Community Sustainability Plan
Saint-Léonard	Green Plan
Shippagan	Une vision ...des actions

Municipal Legislation

Canadian municipal legislation originates from legislation enacted in Upper Canada in 1849 (The Law Society of Upper Canada, 2015). That legislation, known as the *Baldwin Act* (2015), established the role, function and structure of local authorities in the British North American colonies. In 1867, the *Canadian Constitution Act* (SC, 1867) created provincial governments granting them responsibility for making rules related to municipal institutions. At that time, less than 20 per cent of citizens lived in municipal areas compared to the approximately 80 per cent today (Lidstone, D., 2004).

Section 92(8) of the *Constitution Act* delegates powers to the provinces respecting “municipal institutions in the province” (SC, 1867). Municipal authority to regulate use of land is a provincial power under the "property and civil rights" heading in Section 92(13) of the *Constitution Act* (SC, 1867). That delegation of land use planning to local governments is subject to powers retained by the provinces. Consequently, the laws controlling land use are primarily provincial, although there are exceptions created by federal control over land used for First Nation reserves, airports, railways, harbours and other purposes regulated by federal law (SC, 1867). New Brunswick has delegated minimal powers to local governments to control local matters but not concerning planning which-remains in the control of the provincial government (R.S.N.B, 2015).

In 2011, the Province implemented the *Regional Services Delivery Act* (RSDA), proclaiming a new system of local governance in New Brunswick (Regional service delivery act; C- 37, 2012). Subsequently in 2012, there were 12 Regional Service Commissions (RSC) (Province of New Brunswick, 2015) created (See Map in Appendix 4). This replaced the District

Planning Commissions (DPC) system that had been operating in the Province serving 98% of the land area of the Province and 69% of the citizens including all the unincorporated areas and 67 of the 101 municipalities (Bell, J., 2011). .

The 12 Commissions have five main objectives including strengthening the capacity of local governments while maintaining their community identity, increased collaboration, communication and planning between communities, and modernized legislation supporting local and regional decision-making (Province of New Brunswick, 2011). Their mandate includes regional planning, local planning in unincorporated areas, solid waste management, regional policing collaboration, regional sport, recreational and cultural infrastructure planning and cost sharing, as well as regional emergency measures planning (2011).

The Commissions, comprised of incorporated as well as unincorporated areas, were charged with ensuring communities receive services but were not assigned the legislated authority to tax for said services, in the *Regional Services Delivery Act* (R.S.N.B., 2012). The municipal members of the Commission have retained the authority to tax and continue to do so within their legislated boundaries (Telegraph Journal, 2014) to provide the services they are responsible for and given authority to manage in the *Municipalities Act* (R.S.N.B, 2015).

As a result, in New Brunswick there are three legal instruments directing municipal planning activities, the *Municipalities Act* (R.S.N.B, 2015), the *Community Planning Act* (R.S.N.B., 1973) and the *Regional Services Delivery Act* (R.S.N.B., 2012). Interestingly, the use of the term sustainable development, or some variation of, is not included in any of these policies.

GAS TAX FUNDING PROGRAM AND SUSTAINABILITY PLANNING

The Gas Tax Funding Program

After years of lobbying by municipalities across Canada, the Gas Tax Funding Program (GTFFP) was established in 2005. Administered by Infrastructure Canada, it currently provides two billion annually to provinces and territories responsible for allocating the funds to Canadian municipalities to help build and revitalize their public infrastructure assets (Government of Canada, 2014). To do so, incorporated areas develop projects locally and “prioritize them according to their needs” (Canada-New Brunswick, 2005, p. 2). The Government of Canada (2013) reported over 3,600 municipalities and 13,000 projects across Canada had benefited from the financial support and flexibility of the program since its inception in 2005. On April 1, 2009, the Government doubled Gas Tax Fund payments from \$1 billion to \$2 billion per year for Canada’s municipalities (Government of Canada, 2009). On December 15, 2011, federal legislation made the payments under the GTFFP a permanent source of federal infrastructure support (Government of Canada, 2013, p. 173).

Integrated Community Sustainability Plans (ICSP)

The ICSP planning process was initiated across Canada as a requirement of the federal government when introducing the first round of Gas Tax Funding Program in 2005 (Canada-New Brunswick, 2005). Introduced to encourage communities to plan and develop actions, the ICSP was a requirement of bilateral agreements between the Government of Canada and each province for Gas Tax Funding transfers.

To meet this requirement and receive transfers summarized in Figure 1, the Province of New Brunswick developed agreements with Community Economic Development Agencies to

develop “Community Growth Strategies” that incorporated the principles of Integrated Community Sustainability Plans (Province of New Brunswick, 2010, p. 13). Even though the Province funded these regional strategies, municipalities could still conduct an Integrated Community Sustainability Plan process, if they chose to find their own funds.

Fiscal year	Canada's Contribution
2005-2006	\$13,927,000
2006-2007	\$13,927,000
2007-2008	\$18,570,000
2008-2009	\$23,212,000
2009-2010	\$46,424,000
TOTAL	\$116,060,000

Figure 1: Canada’s Total Gas Tax Contribution to New Brunswick 2005-2010

Note: Adapted from *Agreement on the Transfer of Federal Gas Tax Revenues Under the New Deal for Cities and Communities, Schedule H – Integrated Community Sustainability Plans*, p. 11 by Government of Canada and the Province of New Brunswick, 2005

MUNICIPAL GAS TAX FUNDING ALLOCATIONS IN NEW BRUNSWICK

In the Province of New Brunswick, the Gas Tax Funding allocations to the incorporated areas (e.g., villages, cities, rural communities) are determined on a per capita basis. Currently, as per the 2014 Canada New Brunswick Gas Tax Transfer agreement (Canada-New Brunswick, 2015) the allocations to municipalities described in Table 3 are dependent on the completion of a Capital Investment Plan (CIP). The template and requirements for the CIP are posted by the Department of Environment and Local Government staff on the Provincial website (Province of

New Brunswick, 2015). Once a plan has been submitted, evaluated and accepted by the Province an agreement contract is finalized with the Department of Local Government (Province of New Brunswick, 2015)

The Minister of Environment and Local Government controls the allocation of Gas Tax Funds for the unincorporated areas (e.g., Local Service Districts) as defined in Table 3. This portion of the Gas Tax Fund is distributed on a regional basis not a per capita (Province of New Brunswick, 2015). The province identifies regions that encompass the unincorporated areas of the province and funds are distributed within those regional boundaries on a project-by-project basis.

Table 3: *New Brunswick Gas Tax Allocations 2014-2018*

(Province of New Brunswick, 2014)

Total Federal Transfer	\$225,276,000
1.35% Admin to Province	\$3,041,227
Balance	\$222,234,773
20% Unincorporated Areas Allotment	\$44,446,955
80% Municipal Allotment	\$177,787,818
Total Distribution Amount	\$218,267,600

ASSESSING SUSTAINABLE DEVELOPMENT AT THE MUNICIPAL SCALE

Evaluating sustainable development at a municipal scale remains a challenge in most if not all regions of the world (Sustainable Cities International, 2012). This may be due to the challenge of developing a common set of indicators that can be adopted and integrated into

vertical and horizontal scales of policy that recognizes the complexities and the “needs of citizens” (2012, p. 4) in each municipality. Supporting that is the challenge of determining data relevance, at these policy scales, for each community (Dale, Foon, & Herbert, 2011, p. 2). However, it may be that sustainability is just such a complex place-based and normative process when applied within various landscapes that it requires the long-term capacity of local governance actors to integrate effectively. Capacity in this context refers to the important participatory role of key actors in sustainable development to influence change and create resilient communities (Walker, Holling, Carpenter, & Kinzig, 2004, p. 3). All this suggesting additional research is required to understand the role of local actors and policies in sustainability processes.

RESEARCH METHODOLOGY

Research Objectives

The primary objective of this research is to explore how municipalities perceive they have implemented sustainability in New Brunswick after the first decade of the Gas Tax Funding Program (GTFP). To do so, I explored individual perspectives related to describing and implementing sustainability and planning processes, and the role of the GTFP, to provide additional insights to inform future policy instruments that require municipal level sustainable development planning and evaluation processes.

Research Scope

This descriptive multi-site case study explores multiple stakeholder perspectives on sustainability planning and measures, based on their experiences with planning processes at a municipal level 2005-2013. The research results will add to the body of knowledge of municipal

level sustainability processes by providing a greater understanding of agreed upon and diverse views of stakeholders. Additionally, the research provides new insights on sustainable development implemented at a municipal level sustainability in four New Brunswick municipalities that received Gas Tax Funding 2005 – 2013.

Researcher Biases and Assumptions

The research area of interest was due in part to personal experience with local governance models in the province of New Brunswick, which included past co-chair of the Board of Directors for a regional service commission. My interest in this subject was also motivated by the knowledge that the 2014 Federal Gas Tax Funding Program no longer included sustainability planning for municipalities to receive funding (Government of Canada, 2014).

To address biases my personal experience may have brought to the research, a case study design using selection criteria that all cases had to meet and an interview protocol to ensure consistency of data collection across all interviewees was applied.

A Multi-Site Case Study Design

Because this research is interested in understanding the complexities that can be “drawn from multiple events shared among diverse cases” (Lauckner, Paterson , & Krupa, 2012, p. 7), a multi-site case study design was applied. Four case studies were chosen to allow individual cases to be sufficiently explored as supported by Creswell in Lauckner et al (2012, p. 6).

The multi-site case study approach as described by Yin (2003) incorporates a number of data collection methods. These included interviews and observations of representative samples of elected officials, planning staff, community leaders, and policy makers in four municipalities within the province of New Brunswick. This process provided qualitative evidence such as

words as well as textual information (i.e., population, projects) acquired through municipal and provincial public record portals associated with the Gas Tax Funding Program (i.e., Integrated Community Sustainability Plans, project reports) (Eisenhardt, 1989, p. 5).

This combination of research data collection methods supported “methodological triangulation” (Denzin, 2009, p. 309) when applied to the “research phenomenon” (Flick, 2007, p. 14) facilitating the validation of data through cross verification of multiple sources (i.e., archived documentation and literature review, participant interviews and observations in varied meeting settings).

Case Study Site Selection Criteria

Case study site selection used the following criteria.

1. Each case study site had received Gas Tax Funding.
2. Each case study site had submitted a plan to the Province.
3. Two case study sites had greater than 100,000 CMA populations that included urban and semi-urban communities; two had populations less than 5000 with primarily semi-rural and rural communities.
4. Each case study site was located in the southwestern portion of the Province.

RESEARCH METHODS

This research included three data collection methods; participant observations, archive analysis, and semi structured interviews combined with an extensive literature review of government websites, webinars and documents.

Participant observations at one Regional Service Commission in the province, as well as online municipal council sessions occurred between April and June 2015. The Regional Service

Commission observation occurred where the two rural and semi-rural case study site representatives, as required by Provincial legislation (Regional service delivery act; C- 37, 2012), participate with the objective of overseeing the development of a regional plan (2012, p. 14).

The remaining urban and semi-urban case study sites were observed using an online public web viewing systems (Rogers TV, 2015). Note taking during observations provided an additional source of data. To ensure objectivity and limit research bias during the note taking process and the subsequent transcription, three primary questions were used to control for personal bias.

1. Why am I recording this particular item?
2. Is my paradigm influencing my observations and if so how?
3. What knowledge does this bring to my research?

Documentation Review

A review of federal, provincial and municipal archives collected from online government sites, or supplied during interviews, provided an added method of comparative analysis. As noted by Eisenhardt (1989, p. 532) Glaser and Strauss support this comparative analysis for adding to the understanding of the municipal sustainability planning processes and sustainability projects.

Finally, an online literature review using EBSCO Environment Complete, Regional Business News, and SociIndex with full text, Academic Search Premier, Google Scholar, and Royal Roads University Summons was conducted to provide a broader understanding and reference to the research subject.

Key Informant Interviews Participation Selection

The selection of research participants used purposive sampling (Palys, 2008) to support a representative sample of the key actors and decision-makers involved in each case study. This commenced with the determination of the current elected Mayor for each case study site using the Provincial online resources (Province of New Brunswick, 2015). An email communication to each Mayor using Interview Protocol details described in Appendix 1 described the research scope and objectives and requested their participation in the interview process.

Additional interview participants were selected using one or more of the following processes.

1. Snowball sampling that occurred during the interview process.
2. Forwarding of the initial Mayoral email to a staff.
3. The respondent to an email request to the municipal case study office, when no response from the Mayor was received after three resends.
4. Municipal officials, planning staff, community leaders, as well as provincial government staff known by the researcher and/or listed in documents reviewed

The research participants did not include federal level perspectives as the research focused exclusively at the municipal level, as the ultimate recipients of the Gas Tax Funding Program (GTFP), to incentivize municipal leadership in sustainability.

Twelve participants involved in municipal planning processes at the local and provincial levels were interviewed for this research. It became evident early in the interview process and data analysis, that conceptual saturation was occurring and no new information was emerging from new sources even with the augmentation of interview questions to delve deeper into the subject (Bricki, 2007, p. 11)

Interviews were conducted over a seven-month period accommodating schedules as much as possible. Those interviewed had diverse backgrounds and all had varying degrees of post-secondary education in the social or biological sciences, as well as experience working with communities and boards either in their long-term positions or over the span of their careers.

Interview recordings were transcribed either manually by the researcher or by an external service¹. Once transcribed, all interview text was incorporated in the NVivo software² in the relevant case study nodes.

A manual review of each interview text using open coding was conducted resulting in a number of labels, incorporated in the software as nodes within the individual case study nodes, assigned to large portions of the data, summarizing what was happening. Note taking occurred during this process to assist with analyzing and understanding the data. Once completed a final line-by-line manual review was conducted to complete the initial coding. This initial coding resulted in more than 231 nodes.

Next, axial coding was conducted, identifying similar relationships among the open codes. This analysis-coding phase resulted in 37 similarities within all four case studies. The final coding phase occurred as patterns and connections emerged from all the text. The data were then reviewed, selectively coding any data that related to the core attributes, which included metrics, report, community, challenges, vision, health, communications, and people.

¹ <http://transcribeme.com/>

² NVivo is software that supports qualitative and mixed methods research. <http://www.qsrinternational.com/what-is-nvivo>

A second level of analysis was applied to the interview text using NVivo auto code software to determine relationships between the original nodes providing additional rigor and address researcher biases.

An ongoing collection of information and a constant comparative method conducted throughout the research process supported grounded theory analysis. Described by Corbin and Strauss (2014) as a constant comparison of information permitting the emergence of underlying patterns and concepts beyond the obvious words and texts, grounded theory analysis further addressed researcher bias.

Interview data management

Interviews were conducted in person with the exception of two phone interviews. All interviews were audio-recorded using a portable digital device. Interview audios were downloaded to NVivo software and subsequently deleted from the recording device. The audio files were then saved in a PC folder and security protected. All participants have retained anonymity when the tapes were transcribed using a pseudonym coding process. All interview information recorded was considered confidential, and as such, no one else except the researcher had access to the tapes.

Participant Observations

The four case study sites were observed using varying methods. All were observed using online viewing systems (CHCO TV, 2015) (Rogers TV, 2015) and two were observed participating in the context of the regional service commission model (Province of New Brunswick, 2015). The final analysis encompassed the notes summarized during the observations that described in bullet form notes the meeting structure, community attendance and participation, agenda and discussion topics, and the interactions of participants.

Southwest New Brunswick regional service commission.

One session of the Southwest New Brunswick Regional Service Commission was observed during this research where two of the case study site representatives participate on the Board of Directors with several representatives of the unincorporated areas in the region.

Municipal council sessions.

All municipal case study sites hold monthly council meetings, with most open to the public. Dates and agendas are accessible on their respective websites or by request. For the purposes of this research, four municipal council sessions were viewed between April and September 2015. Saint John and Moncton council meetings were viewed three times using the online TV system (Rogers TV, 2015) that records and stores council session for viewing at any time. Grand Manan and St. Andrews were each viewed once using the live-feed viewing systems on the local independent community television station (CHCO TV, 2015). St. Andrews and Grand Manan were also observed during their participation in the Southwest New Brunswick Regional Service Commission.

Semi-structured Interviews

Semi-structured interviews, over a five-month period commencing in February 2015, were conducted in four New Brunswick municipalities and with provincial government staff, in varying settings that met the criteria described in this paper. Interview questions were primarily open-ended permitting the participant views and individual case dimensions to be fully explored (Baker & Edwards, "n.d", p. 9).

As anticipated, the core interview questions described in Appendix 1 were augmented as required to provide greater understanding of a participant's responses. This augmentation of

interview questions as new “foci and questions emerge” (Baker & Edwards, "n.d", p. 9) and concepts were developed is common with case study methodology (Eisenhardt, 1989, p. 536).

DESCRIPTION OF THE MUNICIPAL CASE STUDIES

New Brunswick has a population of 751,171 (Statistics Canada, 2011) living within 71,377.18 square kilometres representing a population density of 10.5 persons per square kilometre compared to the national population density of 3.7 persons per square kilometer. In 2011, 61.1% of the population of New Brunswick lived inside a Census Metropolitan Area (CMA) or Census Agglomeration (CA) representing an estimated 462,017 persons while the number of persons living outside a CMA or CA was 289,154. This latter number includes those populations living within smaller municipalities (e.g., towns, villages and rural communities) as outlined in Table 2 which lists only seven of the total 107 registered municipalities in New Brunswick (Government of Canada, 2013) as being a CMA or CA.

Table 2: *Metropolitan areas, population rank and population change, 2006 to 2011*

(Government of Canada, 2013)

CMA or CA Name	Type	2011	2006
Moncton	CMA	138,644	126,424
Saint John	CMA	127,761	122,389
Fredericton	CA	94,268	86,226
Bathurst	CA	33,484	34,106
Miramichi	CA	28,115	28,773
Edmundston	CA	21,903	22,471
Campbellton	CA	17,842	17,878

Case Study Sites

For the purpose of this research, four case study sites in New Brunswick were selected within the southwestern coastal region of the province; Town of St. Andrews, Village of Grand Manan, City of Saint John, and the City of Moncton. Municipalities in this region were selected to reduce researcher time associated with travel as well as their proximity to the coastal region. The two latter case studies are included in Table 2 population summaries having a CMA year round population of more than 100,000 while the two former case studies having a year round population of less than 5000 are incorporated in the Government of Canada summary as being outside of a CMA, as presented in Table 2.

The two smaller populace municipalities were considered rural to semi-rural due their location outside of a Census Metropolitan Area (CMA) and their low overall population. The two larger municipalities, within a CMA, were considered urban and semi-urban due to their downtown core populations and their less populace semi-urban corridor populace living outside of the downtown core. In 2013, in the Province of New Brunswick, approximately 64% of the population lived within a CMA (Government of Canada, 2013).

Socio-Economic, Demographics and Geographic Descriptions

A community profile for each case study site was summarized using information accessed through the Province of New Brunswick Community Profiles portal (Province of New Brunswick, 2015). Additional information presented was compiled from a number of other sources referenced throughout this section.

City of Saint John Case Study: Located on the southern New Brunswick coast area Saint John is the largest city in New Brunswick. Incorporated in 1785, the city has a census

metropolitan area (CMA) population of 127, 761 with 70,063 living within the city core (Statistics Canada, 2011). The population density per square kilometre is 38 on a total land area of 3,362.95 square kilometers.

Saint John has a median family income of \$68,520 (Saint John, 2015). The primary occupations, as listed in Appendix 3, employing 56.6% of the labour force, are the sales and service, trades, transport and equipment operators, and business and finance sectors. Employment in the education, law and social, community and government and health sectors employ less than 20% of the labour force, and work in the natural resource sectors providing the lowest employment >2%.

Promoted as a “historically-rich and culturally diverse city” (Saint John, 2015), in 2012 the city was named a Top 7 Intelligent Community by the Intelligent Community Forum (ICF)³ (Intelligent Community Forum, 2015) an international think-tank that studies the economic and social development of the 21st Century community. In 2010, the city was designated as a “Cultural Capital of Canada” and in 2011 was named the winner of CBC Maritime's “Cultureville” contest. Contrasting these recent accolades, Saint John was most recently presented in the media as having one of the highest child poverty rates in Canada (Telegraph Journal , 2014).

Community services available in the city include a multi-modal public transportation system (i.e., bus, taxi), an international airport, two hospitals, a university and community college, and three recreational facilities (i.e. YM/WCA, Harbour Station, and Canada Games

³ <https://www.intelligentcommunity.org/>

Aquatic Centre) as well as two municipal parks. Additionally, a multicultural centre is accessible providing integration services for immigrants.

City of Moncton Case Study: The City of Moncton known as the “hub of the Maritimes” (City of Moncton, 2015) has a census metropolitan area (CMA) population of 138,644 with 69,074 living within city core (Statistics Canada, 2011). The population density per square kilometre is 489.3 within a land area of 2,406.31 square kilometers.

Moncton has a median family income of \$71,290 (City of Moncton, 2015). The primary occupations, as listed in Appendix 3, employing 58% of the labour force, are the sales and service, trades, transport and equipment operators, and business and finance sectors. Employment in the education, law and social, community and government and health sectors employ 19.5% of the labour force, and work in the natural resource sectors providing the lowest employment >1%.

In 2009, Moncton was named a Top 7 Intelligent Community by the Intelligent Community Forum (ICF) (Intelligent Community Forum, 2015)⁴. In 2008, Moncton was designated the “most polite and honest city” by Readers Digest (Moncton, 2015). In 2014, the city was ranked as the “lowest cost location for business in Canada” (Moncton, 2015) by KPMG, an international audit, tax, and advisory services corporation (KPMG, 2015).

Community services available in the city include a multi-modal public transportation system (bus, taxi, and train), an international airport, two hospitals, two universities and two community colleges, and a downtown multi-use sports and entertainment centre in early

⁴ <https://www.intelligentcommunity.org/>

development phase. Additionally, the city has developed an immigration strategy (City of Moncton, 2015) providing integration services for newcomers.

Town of St. Andrews: The Town of Saint Andrews was designated as a National Historic Site in 1998 (St. Croix Estuary Project Inc ~ Eastern Charlotte Waterways Inc., 2014, p. 23). With a population of 1,889 and a population density per square kilometre of 226.2 on a total land area of 8.35 square kilometers (Statistics Canada, 2011), it is much higher density than the county average, in which the town is geographically located, is 7.8 (2011). There is a significant seasonal flux in population in the Town of St. Andrews due to the large number of residences owned by non-residents as well as the students who take up residence during the academic year at the college and may not stay during the summer months (pers.comm, 2015).

St. Andrews has a median family income of \$27,294 (Statistics Canada, 2011) The primary occupations, as listed in Appendix 3, employing 55.6% of the labour force, are the management, sales and service, trades, transport and equipment operators, and education, law and social, community and government services sectors. Employment in the art, culture, recreation and sport and health sectors employ less than 10% of the labour force, and work in the natural resource sectors providing the lowest employment >1%.

Community services available in the town include two primary schools, a community college, a recreational facility, as well as the Huntsman Marine Science Center, the Fisheries and Oceans - St. Andrews Biological Station, and the historic Algonquin Resort facilities (Town of St. Andrews, 2015). A regional multicultural centre located in an adjacent municipality serves the town (Charlotte County Multicultural Association, 2015). Additionally, the town is leading the development of a multi-modal transportation system to integrate bus- dial-a-ride- taxi

systems, to connect the various county communities with essential services that are being increasingly centralized to larger municipalities (Hanson, 2014).

Village of Grand Manan: The Village of Grand Manan is an island community, located in the lower Bay of Fundy, accessible only by boat (two ferries service the island) and air. It was incorporated in 1995, as a single village, as a result of an island wide amalgamation of several small communities, most notably Seal Cove which was designated a National Historic Site remaining relatively “unchanged since the 19th century” (St. Croix Estuary Project Inc ~ Eastern Charlotte Waterways Inc., 2014, p. 40). The island is 24 kilometres long and 11 kilometres wide (Village of Grand Manan, 2015) with a population of 2,377 and a population density per square kilometre of 15.8 within a land area 150.86 square kilometers (Statistics Canada, 2011).

Grand Manan has a median family income of \$ 49,147 (Statistics Canada, 2011). The primary occupations, as listed in Appendix 3, employing 62.1% of the labour force, are the natural resources, agriculture and related production sector, and the sales and services, trades, transport and equipment operators and related occupations. Employment in the education, law and social, community and government, and management sectors as well as the business, finance and administration sectors employ 25% of the labour force, and work in the health sector employing 5.9%.

Community services include a transportation system, ferry and airport (providing transportation to mainland areas), one hospital, a LEED certified community and recreational facility, and two privately operated parks.

GROUNDING THEORY ANALYSIS

The Province of New Brunswick signed a ten-year agreement 2005-2015 (*Canada-New Brunswick, 2005*) with the Government of Canada outlining the terms and conditions for accessing the Gas Tax Funding Program. Schedule H of that agreement described the requirement for Integrated Community Sustainability Plans (ICSP) noting them as “supporting the development of sustainable healthy and vibrant communities” (2005, p. 40). An additional clause in the agreement noted that in New Brunswick, ICSPs would be incorporated in existing planning processes such as Community Growth Strategies of each Community Economic Development Agency (p. 40).

As the result of a program review (Government of Canada, 2009), municipalities are no longer required to develop an Integrated Community Sustainability Plan. Currently administrative agreements to access the GTF are developed based on the submission and approval of a provincially specified five-year Capital Infrastructure Plan template outlining the priorities of the municipality. Each five-year plan must meet objectives set by the province including making progress on “improving Local Government planning and asset management” processes (Province of New Brunswick, 2015).

Provincial agreements with municipalities, requested during interviews with provincial staff, for the transference of Gas Tax Funding were not considered public and not accessible from the province for this research.

All case study communities had filed a current municipal plan with the Province in accordance with the *Community Planning Act* (R.S.N.B., 1973) at the time of this research, while

only Saint John and Moncton had completed an Integrated Community Sustainability Plan (ICSP) (Province of New Brunswick, 2015).

The City of Moncton's ICSP, *Shaping Our Future: City of Moncton Sustainability Plan (An Integrated Sustainability Plan)* (Dillon Consulting Limited, 2011) incorporated five community objectives (i.e., green, healthy, vibrant, prosperous and engaged), 24 goals and more than 75 indicators developed with environment as the "central pillar of sustainability" (2011, p. 2).

The City of Saint John's Integrated Community Sustainability Plan (Dillon Consulting Limited, 2008) unlike Moncton's, noted that sustainability was "about more than protecting the environment" (2008, p. 5) and incorporated "20-year goals and sustainability principles" under six elements of sustainability: social, cultural, economic, environment, infrastructure and governance (p. 7).

The same consultant developed both plans incorporating a community consultation process, which included online surveys and public meetings, as well as in the case of Saint John, two stakeholder workshops to develop objectives, actions, indicators and targets.

The Town of St. Andrews conducted a background analysis (Resource and Educational Consultants, 2009), which included a community consultation process before completing their municipal plan in 2010, with a purpose of providing "policies and proposals to guide and control the economic, social and physical development of the town" (Town of St. Andrews, 2010).

Grand Manan, the newest municipality incorporated in 1995, filed a Rural Plan in 2004 listing objectives to "balance development pressures, environmental integrity, and community identity" (Village of Grand Manan, 2004) as one of 42 municipal bylaws (Village of Grand Manan, 2015).

The Canada - New Brunswick Agreement (Canada-New Brunswick, 2005) required the Province to submit a public outcomes report every five years (Province of New Brunswick, 2010). At the time of this research, only one report (2010) was publicly accessible on the Government of New Brunswick website. Email inquiries to the Province in August 2015, as a follow up to interviews conducted with provincial staff, to access the 2014 report indicated that the report was in the final stages of review and would be posted to the Government of New Brunswick website in the near future.

The 2009 report (Province of New Brunswick, 2010) noted that the Gas Tax Funding Program (GTFP) in New Brunswick supported “construction, refurbishment, life extension and/or expansion of publicly owned infrastructure” (2010, p. 2). These infrastructure projects, summarized in Figure 1 referred to as Environmentally Sustainable Municipal Infrastructure (ESMI) were observed as essential for the delivery and administration of “potable water, wastewater collection and treatment, solid waste energy efficiency and clean energy local roads and bridges, and public transit” (p. 2). GTFP capacity building dollars were assigned to only local public service providers.

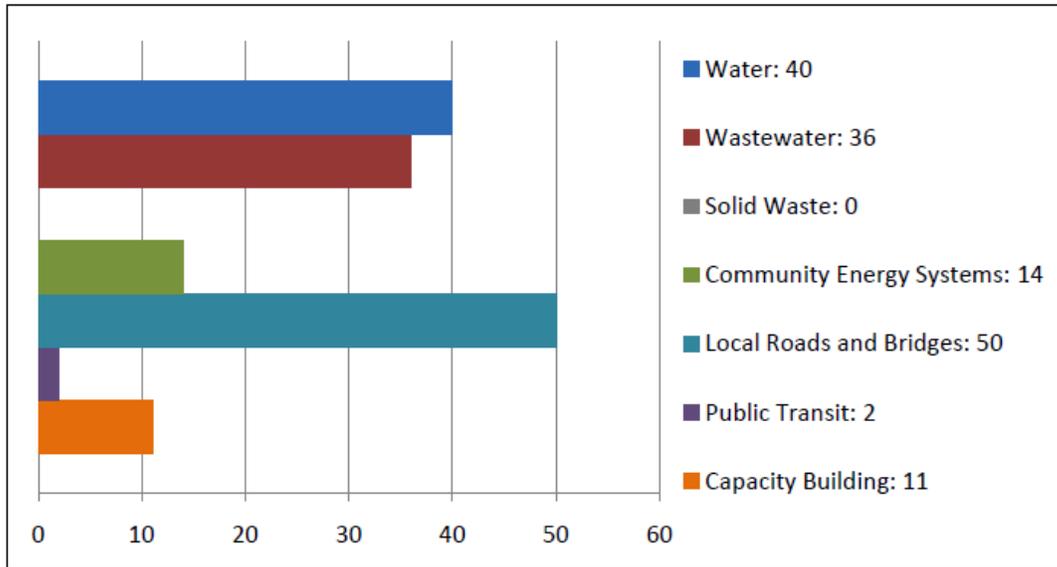


Figure 2: Distribution of Gas Tax Funding Projects by Category

Note: Adapted from *New Brunswick Gas Tax Fund Outcomes Report*, p. iii, by Capital Management Engineering Limited, 2010 (*Province of New Brunswick*, 2010)

Additionally, the Province required that each municipality that received Gas Tax funding, file an annual report using a “Performance Measurement Framework” (PMF) template and indicators provided by the province that allows the Province to track results from all of the projects undertaken, summarized in Table 4 (Province of New Brunswick, 2010, p. 17).

These individual reports were not accessible, so content could not be reviewed for the purpose of this research.

Table 4: *Performance Measurement Framework Indicators*

Water	Length of water main repaired, replaced or added Decrease in energy consumed Number of new connections to Municipal or regional water systems
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Wastewater	Number of new connections to a municipal or regional wastewater treatment system Length of wastewater collection lines repaired, replaced or added
Solid Waste	Decrease in energy consumed Weight of material recycled or diverted from landfill Volume of methane captured
Community Energy Systems	Number of power generation plants Decrease in energy consumed
Local Roads and Bridges (including Active Transportation)	Length of highway improved to meet Provincial standards Travel distance reduced Length of improved or realigned highway that reduce travel time Increased trail or sidewalk use
Public Transit	Increased public transit ridership or capacity Reduction in fuel consumption Number of reduced vehicle use

In New Brunswick, a list of optional sustainable development indicators summarized in Table 5 suggests social, environmental and economic indicators that could be used to assess a “community’s level of sustainability” (Province of New Brunswick, n.d., p. 1) during planning and subsequent plan evaluation processes.

The document advocates sustainability as having three key goals: “a healthy environment, a vibrant economy, and social well-being” (n.d., p. 1).

Table 5: *Sustainable Community Indicators*

(Province of New Brunswick, n.d.)

Environmental Indicators	Social Indicators	Economic Indicators
<ul style="list-style-type: none"> • Number of boil orders issued for the drinking water supply in your community • Number of people driving to work alone per day • Average number of smog free days • Percentage of land in the community in parks or public open space 	<ul style="list-style-type: none"> • Population density per kilometer • Life expectancy • Annual population change • Number of people on social assistance • Average number of people using the food bank 	<ul style="list-style-type: none"> • Average age of the population • Unemployment rate • Economic diversification • Sale of locally produced goods or locally harvested products • Capital costs to repair municipal/rural infrastructure

RESULTS

The need for flexibility in sustainability processes is an imperative reinforced as a result of this research. All participants noted that tools dictated by the Province employed within antiquated legislation negates the flexibility required, recognizing each community is unique and that sustainability is an evolving process (Dale A. , 2001). Additionally, some interviewees noted that communities that did develop Integrated Community Sustainability Plans (ICSP) thought they may be “too prescriptive and too overwhelming for municipalities” to implement successfully.

This prescriptive approach to planning seen in those that did submit an ICSP, suggested there is an influential role of the individual in sustainability processes as noted by Dale (2001). This was noted in all cases, whether an ICSP was completed or not. The influence of staff and

elected officials, based on their individual experience and education, to affect sustainability processes was highlighted by one participant as “sustainable development is something that higher level politicians have to understand and have to be versed on to be willing to in some cases overrule their staff”.

Moreover, a number of interviews emphasized this personalized role of staff in planning process including “when I came I recognized it was a necessity” and “it didn’t happen because I wasn’t here at that time.” This staff personalization of planning processes can be viewed as both a barrier and a driver for sustainability. A barrier in the context that implementing sustainability requires, as one interviewee noted, “partnerships and committees are needed to achieve those goals... it’s not just engineering and environmental, it’s all departments”. On the other hand, every individual can be viewed as a driver for change, engaging elected individuals in a position to effect legislative change to understand the benefits of sustainability planning.

However, even staff influence on planning processes was seen as constrained by the province due to legislation that dictates municipal planning limiting their capacity to expand on planning processes making them applicable to their local needs. Several interviewees supported this as a constraint of sustainability in New Brunswick, noted by one interviewee as being “extremely centrally controlled” and municipalities have to “do what has been legislated and told to us to do by Fredericton” leaving “very little wiggle room or freedom to basically do anything that is outside the provincial legislation”.

Although legislation was viewed as a barrier to municipal sustainability planning, there was generally support for the new asset management planning requirement to access the GTFP funds as “infrastructure in New Brunswick is old and in need of repair”, as noted by one

interviewee. But, information also suggested that the gas tax funding distribution with only an infrastructure focus does not lead to sustainability, emphasized by one interviewee stating that “it is not pipes in the ground, it is quality of life for people” which requires “flexibility to use it for non-infrastructure needs.”

Contrastingly, one case study did find the GTFP to be flexible in its application, permitting its use to fund a development project in response to a social issue that was gaining negative national media attention. Although this too was noted as being due to the role of the individual provincial leadership and political influence at the time, not due to an effective distribution model. A distribution model currently based on population that “has no real validity for what needs are or where we are going” and typically “provides minimal funds to depressed areas” as noted by interviewees. Other than British Columbia, New Brunswick is the only other province that has chosen to employ this centralized system of GTFP distribution inhibiting the ability of municipalities to develop their own plans based on localized needs.

This recognition of localized needs in each municipality was evident in the cases of Saint John and Moncton that developed very different ICSPs even though they used the same consultant. This uniqueness was most likely due to the benefits of sustainability planning which recognizes the flexibility requirement for each municipality to develop a plan without a one size fits all planning approach.

Further supporting the need for flexibility in municipal planning processes is the fact that processes to evaluate locally plans were found to be unique for each case study community. These ranged from a simple internal annual review by Council to reporting from all municipal departments on the status of specific objectives.

Although the Province was given flexibility in the distribution of the Gas Tax Fund Program, in both the initial GTFP agreement and the new 10-year agreement going forward as summarized in Appendix 5, the province did not cede that same degree of flexibility to their municipalities. In fact, there are a number of changes, in the new administrative agreement with New Brunswick (Government of Canada, 2014) highlighted in Appendix 5, that emphasize the provincial jurisdiction over municipalities going forward versus the language in the original agreement suggesting collaboration with all levels of government in the original agreement.

This further exemplifies the New Brunswick government's hierarchal control of municipal processes preventing flexibility to govern at the level closest to the people. This is further reinforced in the new agreement that incorporated "regional delivery mechanisms" (Government of Canada, 2014) in place of an inclusive broader community delivery language supported by Dale (2001). Furthermore, both the current and original agreements recognize the need for investment in smaller jurisdictions; however, the new agreement now incorporates a population criterion (Government of Canada, 2014) suggesting sufficient investment in smaller jurisdictions will not occur.

Overall, this research found that the Gas Tax Funding Program (GTFP) played a minimal role in the advancement of sustainability in New Brunswick due to the inflexible provincial implementation model. Integrated Community Sustainability Plans, or the incorporation of sustainability in municipal plans, was found to be conducted for one of two reasons: 1) it was anticipated to be a future legislated requirement or 2) to access funds. In the case of the latter related to the GTFP, municipalities anticipated that even though it was not a requirement in New Brunswick initially, it would become so in the future in order to access the program. All

interviewees seemed to recognize the value of sustainability in their planning processes, describing it in all cases, similar to the Brundtland Commission definition but interestingly with an emphasis on tangible developments (i.e., infrastructure). This was evident in interviewee statements that included the suggestion that sustainable development “was tied into the other pillar of infrastructure and infrastructure needs” within their planning process and a community member who described sustainable development as “bringing the greatest benefit to the community from any initiative...a government sponsored infrastructure project”.

Interviewees noted that the provincial government does seem to recognize the value of sustainability plans and that community involvement is key, suggesting that is why the earlier regional sustainability plans developed by the Commissions were not used, as they “really did not include community”. Although all plans submitted to the Province by municipalities are used by government staff to “ensure the municipalities are requesting funds to support the priorities listed in their plans” this too can be viewed as another level of control negating any flexibility in implementation by a municipality for their unique context (Dale A. , 2001). One interviewee noted that “stronger more viable communities do sustainability planning” while also emphasizing communities are not encouraged to spend money on something they do not have the capacity to sustain.

DISCUSSION

Executing policy, such as sustainability planning, is best undertaken at a level of government where it is not only effective but “closest to the citizens affected and thus most responsive to their needs, to local distinctiveness, and to population diversity” (Canada Ltée (Spraytech, Société d'arrosage) v Hudson (Town), 2001), also known as the subsidiarity principle

(Dale, Herbert, Newell, & Foon, 2012). There is a decentralization trend in federal and provincial legislation and case law, reflecting an increasing stature of municipalities and the role they play (Lidstone, D., 2004). However, a corresponding transfer of resources has not accompanied this devolution. Additionally, Muldoon, Lucas, Gibson and Pickfield (2009, p. 115) have emphasized the important role of municipalities in environmental regulation.

In New Brunswick, this decentralization trend is evident with the creation of the Regional Service Commissions (RSCs) (Province of New Brunswick, 2015). The RSCs have created an opportunity to increase the capacity of municipal governments to plan collaboratively and take advantage of resource sharing opportunities on a regional basis, bringing incorporated and unincorporated areas to the same table to develop a regional strategic plan and to make decisions collectively. To date, provincial policies have not been updated allowing for the transfer of real authority to the Commissions (and subsequently local governments) for planning and resource management decisions or the administration of local resources (i.e., capacity building, planning) required to implement planning processes.

This may be related in part to the current political structure in New Brunswick that continues to sponsor a quasi-decentralization of power to local authorities, as in the case of the Commissions. As such, local control as the next step in local governance reform has not occurred, even though government commissioned reports over the past two decades recommend increased regional planning, sanctioning greater authority for local managers, most recently the Report of the Commissioner on the Future of Local Governance (Finn, 2008).

Although provincial planning systems remain focused on economic development without an embedded vision of sustainability that encompass social, cultural and environmental services, each case study, in spite of very little flexibility in their planning processes, has instinctively, incorporated sustainability in their planning. As in the case of St. Andrews and Grand Manan, where these processes may not be as formal as an Integrated Community Sustainability Plan template or toolkits would advocate, suggesting a more applicable solution would be a flexible sustainability planning policy supported by the province with development and integration processes that allow local ownership and management of the plan processing. Perhaps one solution would be the application of Principles of the Commons (On the Commons, 2015) that advocates the collective management of resources within a defined community with a focus on equitable access, use and sustainability.

Instead of this collective management approach, the current Provincial planning policies have created several layers of overlapping and controlling bureaucracy interfering with the advancement of sustainability at the local level. Municipalities in the Province have retained their Planning Advisory Committees (PAC) as per legislation (R.S.N.B, 2015), while the Commissions, as required by the *Regional Services Delivery Act* (R.S.N.B., 2012) “provide land use planning services to all Local Service Districts” (Southwest New Brunswick Service Commission, 2015), the unincorporated areas. To do so they have established a Planning Review and Advisory Committee (PRAC) (2015). Creating an additional planning layer, the Southwest Regional Service Commission, where St. Andrews and Grand Manan case studies reside, has created a Planning Management Committee (PMC), comprised of municipal CAOs, volunteer citizens, Commission staff and Board members. The PMC objective is “to provide

advice and guidance” to the RSC Board of Directors related to “high level operational and strategic directions for Community Planning” (pers. comm., RSC staff, 2015).

This fragmented planning system and lack of transference by the Province of planning and equitable decision-making authority has created barriers to sustainability. This was also evident in the time spent observing case study actors in varied settings, which served to highlight the fragmentation of planning systems, both development and implementation. Elected officials of municipalities mandated to plan within one piece of legislation and appointed (sometimes self-appointed)[sic] representatives of unincorporated areas operating with no legislative authority under another piece of legislation, are expected to operate under yet a third piece of legislation causing confusion and preventing progress towards any form of collective planning. This observed fragmentation is a result of the dated legislation and the reluctance of the Province to transfer authority to the local governance systems. As a result, barriers are created for local actors working within antiquated planning systems to collaborate, in spite of the fact that the data reveal a unanimous understanding of sustainability and the need to integrate it into local plans.

One could view the Regional Service Commissions’ objectives as supporting the pillars of sustainability. Their planning mandate, currently focused on waste management and land use planning, could be considered the initial objectives for social, environmental and economic foci in longer term planning activities. Unfortunately, without the authority to adjust tax rates or to conduct regional planning the commissions are not able to promote sustainability (Telegraph Journal , 2015). Additionally, under the current system, the Commissions are unable to respond and conduct planning at the local level in response to adjusting community service needs such as

declining waste management due to reduced consumer waste in recent years (pers. comm. PMC, 2015).

The Regional Service Commissions (2015) mandate reflects this support of sustainability, which states:

The Regional Service Commissions will be responsible for the development of a Regional Plan, the aim of which would be to better coordinate and manage development and land use within each of the 12 regions. More specifically, the Regional Plans will focus on strategies that foster sustainable development practices, that encourage coordinated development between communities, that influence and guide the location of significant infrastructure (e.g., major roadways, facilities, trails), and that enhance coordination of commercial / industrial development. Regional Plans will also serve as an important tool in better managing, protecting and harmonizing urban and rural landscapes and resources. (Southwest New Brunswick Service Commission, 2015)

CONCLUSIONS AND RECOMMENDATIONS

More than 30 years after the Brundtland Commission coined the term sustainable development, its implementation locally remains challenging for some communities, as seen in the New Brunswick case studies. Even though municipalities are, on case-by-case basis, incorporating the pillars of sustainability in planning processes, they remain un-integrated in overall planning processes for each of the case study sites reviewed. One reason may be that the benefits of long-term collaborative participation and commitment of citizens and institutions to sustainable development planning processes through policy change, active engagement and

allocation of resources needed to create incentives for local communities to implement sustainability has yet to be recognized (Braun, 2007). Another reason may be that consultants were used to conduct both the regional plans in 2007 – 2009 incorporating sustainability pillars as well as the municipal Integrated Community Sustainability Plans. Consultants are employed to achieve a plan within a set time and budget negating the need for the time and resources required for meaningful engagement and long-term commitment of citizens.

Still viewed as a challenge and a barrier, community engagement is seen as taking too long, too expensive with too many views and subsequent actions to be incorporated by those charged with developing and implementing final plans. Perhaps this lack of community engagement, which would in turn educate the broader public on the municipal sustainability processes, is one explanation for the lack of response from community members to my requests for interviews. This was particularly exemplified by one potential interviewee who indicated they “would have nothing to offer on the subject” even though they had been involved in municipal planning processes for some time.

Additionally, municipalities that do want to conduct more integrated local planning find their efforts once again strangled by outdated policies that require provincial oversight and permissions to complete, if started. This is evident even in the newly updated *Municipalities Act* (R.S.N.B, 2015) that still advocates provincial control over municipalities. Additionally, there is still a one-size fits all municipal plan outline developed by the province that each municipality must adhere to with little flexibility to meet local unique needs.

A more recent example is the Capital Investment Plan (CIP) now a requirement of the Province and a condition for receiving Gas Tax Funding. So one can conclude that municipal planning processes are dictated at the provincial level and that while this centralized control over

planning processes continues, local sustainability planning and integration will not effectively occur. More critically, in the last decade there has been an increasing emphasis on place-based decision-making, which the Province does not seem to recognize nor value.

Contrastingly, based on the research, one can make the observation that small communities with somewhat geographically predefined boundaries, as in the case of the Village of Grand Manan, are able to address sustainability without fixed planning templates and processes allowing more flexibility to engage, collaborate and act based on the local players socio-economic and environmental needs. This was further evidenced in the Town of St. Andrews with over 400 inputs in their planning process versus less than 100 in the both the City of Moncton and the City of Saint John. This suggests that smaller communities are more engaged in their community planning processes and are able to influence their plans through an active community engagement process whether consultants are engaged or not.

Perhaps the continually shifting support for sustainable development planning stems from the persistent challenge of working across several government silos necessary to implement sustainability plans. Integrated Community Sustainable Development plans and respective policies would require cross-departmental and jurisdictional collaboration to be implemented effectively. Without this involvement and cooperation of several departments and agencies, plans could not be implemented (Finn, 2008, p. 124). Valentin and Spangenberg (2000, p. 391) suggest that every community should be able to develop a unique “set of indicators” within their defined shared system. This then allows for the opportunity to evaluate through comparison to other similar communities that incorporate certain requirements and conditions. Valentin and

Spangenberg (2000) further emphasize the importance of citizen involvement in the development of indicators as crucial to strengthen their community identity and role in sustainability planning.

Since sustainability planning and implementation at local scales remains a challenge, a more appropriate rationale of planning that recognizes the individuality of each community, and flexible boundaries to support service demands (Feiock & Scholz, 2010, p. 145) is required.

This is supported by the principles for managing the commons defined by Elinor Ostrom (2015) summarized in Table 6 could be applied to allow for more flexible local sustainability planning processes.

In applying these principles, rules could then be developed that are unique and suitable for the social, environmental and economic needs of each community.

Table 6: *Eight Principles for Managing the Commons*

1	Define clear group boundaries
2	Match rules governing use of common goods to local needs and conditions
3	Ensure that those affected by the rules can participate in modifying the rules
4	Make sure the rule-making rights of community members are respected by outside authorities
5	Develop a system, carried out by community members, for monitoring members' behavior
6	Use graduated sanctions for rule violators
7	Provide accessible, low-cost means for dispute resolution
8	Build responsibility for governing the common resource in nested tiers from the lowest level up to the entire interconnected system

As a final point, without an updated provincial planning framework that revamps and potentially integrates the Municipalities Act, the Community Planning Act and the Regional Services Delivery Act transferring authority to local government institutions, the flexibility required to conduct and implement place-based sustainability planning will remain a challenge. This research suggests that the original intent of the Gas Tax Funding agreement was to provide the confidence of long-term resource and political commitments to municipalities, but the critical piece of provincial policy change has not yet occurred in New Brunswick.

The research further suggests that policy commitment must come from the provincial government in the form of legislative change and transference of authority back to the regional communities currently operating within policy frameworks that cause mistrust and barriers to progress towards sustainability due to lack of local decision-making authority. This is supported by recent climate change research that has shown that the most innovative communities are those that have policy alignment within local municipal departments and policy congruence between levels of government (Dale A. , 2015)

As such, the Gas Tax Fund and the requirement for an Integrated Community Sustainability Plan could have been the impetus for real sustainability planning at the municipal level in New Brunswick. It is not too late. Now that the fund has become a fixture, the Province can choose to use those funds to create sustainable community planning and long-term implementation through the newly formed Regional Service Commissions that create a forum for municipal and non-municipal regional collaboration.

Finally, if the Province is to continue to distribute the GTFP funds based on a population criterion, then the Regional Service Commissions, similar to the County Councils (Province of New Brunswick, 2015) operating before authority was transferred to the Provincial Government,

would seem a more efficient system. By providing dollars on a regional basis, funds currently controlled by the Province for the unincorporated areas who are as one interviewee noted “living on the fringes of municipalities and utilizing services” their tax dollars do not fund, would be included. This too, supports the concept of flexibility noted as a result of this research as essential to supporting the creation of sustainable communities bounded by locally determined needs.

LIMITATIONS OF THE RESEARCH

Time was recognized as a limitation to the research, which is why a sequential phased design for collection and analysis was implemented.

Interview participants proved additionally challenging due to the lack of response to research participation from all levels of stakeholders in all case study sites. Some requests were simply not responded to while others indicated they could offer nothing on the subject.

Additionally, since this research focused on relatively small municipalities in the southwestern region of one province the transference of this study results to larger areas remains unknown.

A final limitation was that the 15 regional plans completed in the Province 2005–2008 in lieu of Integrated Community Sustainability Plans nor the 2014 Provincial Gas Tax Funding Outcome Report were accessible during my research.

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APPENDICES

Appendix 1: Interview Protocol

Evaluating the Implementation of Sustainable Development: A Case Study of New Brunswick Municipalities

Principle Investigator: Susan Farquharson

Interviewee (Name and Position): _____

Location: _____

Date: _____

1. Introduction

Thank you for your interest in my research and for agreeing to meet with me! You have been selected for this interview process because you have been identified as someone who has a great deal to share about sustainability processes at the municipal governance level. My research project as a whole focuses on exploring how municipalities are advancing sustainable development. I have a particular interest in understanding how sustainable development plans have been developed, utilized and evaluated. I believe the study will benefit from your perspectives on sustainability and your reflections on sustainable development processes.

The purposes of this research are to 1) explore whether, and if so how, municipalities in New Brunswick know they have advanced sustainable development, 2) describe sustainable development indicator and evaluation processes, and 3) develop theories to provide additional insights to guide future policy instruments that require municipal level sustainable development planning and evaluation processes.

2. Procedure Script:

To aid with my note-taking, I would like to audio tape our conversations today if that is ok with you? You can provide your consent for audio recording in the Informed Consent Form which provides details on how the tapes will be used, the overall research and your participation which I will review with you at this time if that is ok. If you have any questions as we review please ask and I will answer them to the best of my ability.

3. Review Informed Consent Form

Key Items:

- Highlight confidentially procedures
- Highlight withdrawal procedures
- Highlight anticipated time commitment for participant
- Signed! Provide duplicate signed copy of consent form

– Do you have any further questions before we start the recorded interview?

4. Commence Interview – start recording. Thank you once again for your agreeing to participate. I have planned this interview to last no longer than one and a half hours. During this time, I have several questions and but I am sure we can finish in the time allotted. So first:

Primary Research Questions	Interview Questions	Additional Probes
Related experience	1. Can you tell me a bit about your present position (or work in the community)	Gender Role Length of time Education How they got there
	2. How would you define sustainable development	Understanding of participant's views and use of SD imperative... social, environmental, economic, culture?
What process have municipalities used to develop sustainable development plans?	3. Tell me about your experience with municipal government sustainable development planning processes	Community, consultants, stakeholder engagement, understanding of SD concepts
	4. How did you engage the community in the development of the plan?	What worked and didn't work in your engagement strategies?
If and how the Gas Tax Funding Program influenced the plan development?	5. Can you tell me why you believe the municipality developed a sustainable development plan	Gas Tax Funding Program?
How municipal (provincial) staff use the sustainable development plan?	6. How do you use the plan? a. Do you see any benefit in integrating this plan with other plans, such as OCPs or disaster management, risk management plans?	Are there any employees directly responsible for implementing the plan?

<p>Has the sustainable development plan been integrated into other planning processes, and what effect has this had on implementation?</p>	<p>7. How does your organization use the municipal sustainable development plans?</p> <ul style="list-style-type: none"> a. Don't: Why? b. Do: Can you give me some examples 	<p>Resource allocation</p> <p>Projects</p> <p>Programs</p> <p>Social, environmental, economic</p>
<p>Noted challenges to advancing sustainable development and how (if) they were addressed?</p>	<p>8. Can you discuss what you see as the major benefits of sustainable development planning plans</p> <ul style="list-style-type: none"> a. What about the challenges b. How are those benefits recognized and communicated c. and challenges addressed 	<p>Community resilience</p> <p>Community involvement</p> <p>New Jobs?</p> <p>Money: Gas Tax Funds</p> <p>Societal changes, resources, evaluation, and monitoring</p>
<p>If and how sustainable development indicators and benchmarks were developed, understood and incorporated?</p>	<p>9. Can you tell me how you determine if the sustainable development plans are effective</p> <ul style="list-style-type: none"> a. How you know sustainable development is advancing in your community b. Can you describe a few examples 	<p>Values, indicators, benchmarks, communication systems</p> <ul style="list-style-type: none"> - Jobs - Growth - Population - Climate change, water, energy - Project based? E.g., Infrastructure - Resources, societal change, economy
	<p>10. In your opinion, what has worked and what hasn't worked in both developing and implementing your plan?</p>	

How municipalities envision, within the context of sustainable development, utilizing the next phase of Gas Tax Funding Program	11. Describe for me how you envision the future of sustainable development planning in X municipality a. Can you tell me why?	Integrated Planned? Value? Resources? Gas Tax Funding Program?
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5. Thank you very much for taking the time to meet with me today for this interview. I really appreciate the time you have taken from your schedule as well as your patience today. Your inputs were wonderful and have definitely contributed a great deal to my study.
6. I see on the consent form that you indicated that you would like to meet again to review the transcribed notes from this interview. Can I contact you to set up a time to review the transcript? It shouldn't take any more than 30 minutes and I may have a few additional questions or clarifications at that time if that is ok with you.
7. My contact information is provided on your copy of the Informed Consent Form and you have my email address from our original contact. Please feel free to contact me at any time if you have any questions. I note that you have requested a copy of the final thesis which is great. I will make sure you receive a copy no later than December 2015.
8. Do you have any questions about the study that you may not have asked previously?

Appendix 2: Research Work Plan and Milestones

Timeframe	Phases	Work plan	Milestones
July -August 2014	Research Proposal Approval Complete and submit ethics forms for human participation	Complete thesis proposal Request and complete ethics review process	Approval of Thesis Supervisory Committee Approval of ethics forms
August 2014 – November 2014	<u>Phase I:</u> Time: Four months Skills: Desk top research, written communication	Data Collection: Literature Review and Government Documents Document individual site demographics to support	Site selection and justification Commence text analysis and generic

	Tools: Email and Qualitative Research software (NVivo)	purposive site selection based on criteria	coding using NVivo software Develop research instrument – interview questions
December 2014 – March 2015	<u>Sequential Phase II</u> Time: Four months Skills: Verbal and Written Communication, listening and patience Tools: Note taking; Recording equipment, transcribing of verbal data, incorporation of data in Qualitative Research Software (NVivo)	Audio recorded interviews with participants Observation of four regional multiple site collaborative planning sessions to understand and corroborate participant	Data comparisons within and across case studies contrasting common or differing themes using NVivo text analysis and coding
April 2015 – June 2015	<u>Sequential Phase III</u> Time: Three months Skills: Verbal and Written Communication Tools: Qualitative Research Software (NVivo)	Modify/expand research questions and follow up for clarification as required to address additional gaps or themes Compare/contrast within and across case study sites results using NVivo software	Understand and validate themes and hypothesis(es)
July – August 2015		Complete comparative data analysis and draft thesis	
September 2015		Submit Draft Thesis to Committee	
October 2015		Oral Defense	

Appendix 3: Labour Statistics (*Statistics Canada, 2011*)

Case Study Site	Saint John	Moncton	St. Andrews	Grand Manan
Total labour force population aged 15 years and over by industry	67,355	78,035	800	1,280
Management occupations	6,105	7,970	140	105
Business, finance and administration occupations	10,120	12,930	85	120
Natural and applied sciences and related occupations	4,840	4,845	60	45
Health occupations	5,555	5,925	55	75
Occupations in education, law and social, community and government services	7,530	9,265	115	95
Occupations in art, culture, recreation and sport	1,100	1,860	15	0

Case Study Site	Saint John	Moncton	St. Andrews	Grand Manan
Sales and service occupations	17,495	22,275	190	255
Trades, transport and equipment operators and related occupations	10,520	10,020	115	215
Natural resources, agriculture and related production occupations	770	810	15	325
Occupations in manufacturing and utilities	2,275	2135	0	30

Appendix 4: Map of New Brunswick Regional Service Commissions



Note: Adapted from *Structure of the New Regional Service Commissions*, website, by the Province of New Brunswick, 2015

Appendix 5: Administrative Agreements-Principles Comparison

2005 – 2014 New Brunswick and Government Of Canada Administrative Agreement On The Federal Gas Tax Fund	2014 – 2023 New Brunswick and Government Of Canada Administrative Agreement On The Federal Gas Tax Fund
<p>Principle 1 – Respect for jurisdiction: Respect for the jurisdiction of New Brunswick over municipal institutions. The desire to recognize Canada’s contribution to cities and communities in New Brunswick. The commitment of Canada and New Brunswick to recognize the merit of partnerships across all levels of government to support the New Deal.</p>	<p>Principle 1 – Respect for jurisdiction: The GTF was designed to leverage the strengths of each level of government and is based on the principle that each has areas of jurisdiction and is accountable to its population. Canada respects the jurisdiction of provinces and territories over municipal institutions.</p>
<p>Principle 2 – A flexible approach: A flexible approach regarding the intra-jurisdictional allocation and the delivery mechanism to be used by New Brunswick to flow money to New Brunswick Communities and the nature of their involvement and the nature of the provincial contribution.</p>	<p>Principle 2 – A flexible approach: In recognition of the diversity of Canadian provinces, territories, regions and communities, the GTF recognizes the need for a flexible approach to program delivery. Wherever possible, the GTF aims to employ regionally adapted delivery mechanisms, including the leveraging of existing delivery mechanisms and reporting structures.</p>
<p>Principle 3 – Equity between provinces and territories: Ensuring that the inter-provincial allocation is as close as possible to a per capita basis while respecting the need to have an adjustment for the smallest jurisdictions, namely the three Territories and Prince Edward Island</p>	<p>Principle 3 – Equity between jurisdictions: The GTF recognizes the importance of ensuring that the inter-provincial/territorial allocation is equitable while supporting meaningful infrastructure investments within the least populated jurisdictions.</p>
<p>Principle 4 – Promote long-term solutions: The principle that Canada is making a 5-year financial commitment with the gas tax but negotiating 10-year gas-tax agreements, with a clause for a review after four years.</p>	<p>Principle 4 – Long-term solutions: The GTF provides predictable, long-term funding for communities, where communities choose projects locally and prioritize them according to their needs, while respecting the principle of incrementality and not displacing current infrastructure investments.</p>
<p>Principle 5 – Transparency: The commitment to put in place an open and transparent governance process for the purposes of implementing this agreement and selecting projects for funding. This process will also</p>	<p>Principle 5 – Transparency: The GTF is administered via an open and transparent governance process, which recognizes and communicates Canada’s contribution to communities’ infrastructure priorities and includes</p>

include, among other things, a commitment to the development of performance indicators, evaluations and regular reporting.	regular program evaluations and progress reporting to Canadians.
Principle 6 – Regular reporting to Canadians: Canada will use federal mechanisms to report on outcomes through the New Deal. New Brunswick will employ its own mechanism for reporting within its jurisdiction.	Not included