



# Municipalities

Newfoundland and Labrador

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## Public Infrastructure & Municipal Economic Development

A Community Development Project

An Operational Handbook and Workshop Guide



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A Municipalities Newfoundland and Labrador  
Community Development Project

Operational Handbook and Workshop Guide  
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# Operational Handbook

## Introduction and Overview

Traditionally public infrastructure is thought of as the physical assets that are needed to support the basic functions of communities and the economy. Typical examples include roads, bridges, water, sewer, the electricity grid, and telecommunication systems.

In a broader context infrastructure can be referred to as social overhead capital, which in addition to hard assets includes facilities and human resources relied on to provide public services such as health, security, education, social welfare, recreation, culture, and economic development.

### **Diamond defines public infrastructure in the following context:**

1. It requires investment by public authorities because purely private investment and use is uneconomic.
2. It involves large-scale investments in mainly physical but also human capital to achieve long-term benefits.
3. It is integrative in that it links economic agents such as transportation, water, sewer, and telecommunications together to provide a foundation for a community to function.

In Newfoundland and Labrador, infrastructure responsibilities are shared between the three levels of government. Municipal responsibilities are set out in the Municipalities Act and for the most part cover basic services such as transportation, water supply, sewage disposal, solid waste management, and recreation.

Infrastructure that is regional or provincial in scale or lies outside municipal boundaries is provided for the most part by the provincial government. This includes provincial highways, hospitals, schools, education facilities, and public buildings used to deliver government services. In the broader context, it includes most provincial government services including policing, health care, social services, cultural services, natural resource management, and environmental protection to name a few.

Federal responsibilities for physical infrastructure are more limited, but historically have included assets such as large airports, seaports, inter-provincial ferries, search and rescue, and national parks. In terms of overall investment the federal government plays a fundamental role in the provision of infrastructure through funding agreements with provinces and municipalities.

The private sector tends to be relied on for the provision of certain types of infrastructure, particularly regulated utilities such as electricity, telephone, and Internet systems. Increasingly as well, large-scale infrastructure projects are financed and operated through public-private partnerships. Examples include the fixed-link bridge to Prince Edward Island, portions of the Trans Canada Highway in Nova Scotia and New Brunswick, and some coastal ferry services in Newfoundland and Labrador.





## Matching Economic Development Opportunities to Infrastructure Needs

While there is general agreement that infrastructure is an important factor in economic development, there is little consensus about the nature of the relationship. A recent newspaper column (Bangor Daily News, August 5, 2009) praised the City of Saint John, New Brunswick for focusing its economic development strategy on *“things that retain and attract people, ideas, and investment”* rather than on luring particular types of businesses such as manufacturing. This view stressed that quality of life is more important for achieving economic development and that communities should *“focus on polishing the assets that make [them] a great place to live... and economic development will follow.”*

One reader took the columnist to task for this opinion. Conceding that many *‘bright lights’* would agree with the opinion, he described this approach as a *‘linear’* way of thinking about economic development based on dubious logic.

- *“We are building this road and economic development will follow.”*
- *“We are investing in broadband internet and economic development will follow.”*
- *“We are cutting this tax and economic development will follow.”*

While acknowledging the importance of quality of life, the reader contended that economic development *‘never just follows’*. He argued for precisely the opposite approach. First develop a credible economic development strategy, then, along with other factors start thinking about what infrastructure will be needed to help achieve that strategy. Infrastructure is an important factor in the ability of a municipality or region to develop its economy. But the relationship is not a simple one and poses many uncertainties when considering investment needs and priorities.

The 2006 federal budget stated that *“Canada’s quality of life and economic competitiveness depend in part on having reliable, efficient infrastructure”*. Appropriate infrastructure is an important factor but cannot create economic potential on its own. Roads, water, sewerage, and broadband internet are each only one element out of many that influence business location decisions. Some others include human resource skills, wage levels, tax rates, distance to markets, government assistance, and the particular needs of individual businesses.

While the significance of infrastructure is generally recognized, the economic benefits are difficult to quantify. Different types of businesses have different infrastructure requirements. Shopping centres require good roads to handle traffic but do not need much water or sewer capacity. Fish plants may have high water needs but usually dispose of wastewater directly rather than through municipal sewers. Hotels and restaurants need water and good sewer capacity. Welding and fabrication plants require 3-phase electricity but little in the way of municipal infrastructure.

Information and communications technology (ICT) has contributed to a boom in productivity and has become essential for effective participation in today’s economy.

Any community without broadband or cell phone connectivity is disadvantaged in attracting and retaining businesses. ICT strengthens the business environment by improving information flow, human resource skills, service delivery, and marketing. Broadband helps to level the playing field between large versus small, urban versus rural, and established businesses versus new entrepreneurs.

Successful economies also require social and cultural infrastructure to maintain the quality of life in a community. Roads and bridges are necessary for a community to function effectively, but health services, schools, libraries, recreation programs, and community centres ultimately determine how viable and sustainable the local economy will be.

## **Using Existing Infrastructure to Accommodate Economic Development**

Municipalities should endeavour to get the most out of every dollar they invest in infrastructure. Effective infrastructure planning is about much more than getting services to as many households and businesses as possible. It's also about more than ensuring a high standard of construction and maintenance. More than any other factor, effective planning should aim to maximize the utilization of the infrastructure that is developed.

Land use patterns in many Newfoundland and Labrador municipalities are not conducive to good infrastructure utilization. It is not uncommon for communities to be spread out for miles along one main street while abutting backland remains undeveloped. Another common sight is patchwork subdivisions sprouting out in various directions from the perimeters of communities while older areas fall into decline.

Effective infrastructure planning goes hand in hand with good land use planning. Municipalities should develop strategies to encourage businesses and housing to locate in areas where land is available and infrastructure is already in place. Adaptive reuse and redevelopment of land and buildings in older areas where infrastructure already exists is more efficient than building more and more infrastructure. Maximizing the use of existing infrastructure keeps municipal costs and taxes down. It is the most efficient means to manage growth and foster economic development.

The Community Accounts website ([www.communityaccounts.ca](http://www.communityaccounts.ca)) provides some useful data to compare infrastructure utilization in municipalities across the province. By calculating the ratio of street kilometers to the number of residences, a rough indicator can be generated to compare how efficient different municipalities are in utilizing infrastructure.

The following table compares some randomly selected municipalities.

<b>Ratio of Street Distance to Residences</b>			
<b>Municipality</b>	<b>Street Distance (km)</b>	<b>No. of Residents</b>	<b>Street Distance per resident (metres)</b>
Baie Verte	11.3	638	25.5
Clarenville	45.2	2,225	20.3
Eastport	10.9	298	36.6
Gambo	17.0	842	20.2
Happy Valley - Goose Bay	55.7	3,150	17.7
Gander	57.7	4,121	14.0
Harbour Grace	55.9	1,326	42.2
Labrador City	53.3	3,054	17.5
Lewisporte	19.4	1,391	13.9
Mount Pearl	111.7	9,682	11.5
Port aux Basques	40.0	1,935	20.7
Springdale	25.6	1,203	21.2
St. Anthony	22.8	1,082	21.1
Stephenville	68.5	4,597	14.9

Using the ratio of street distance to the number of residences, the table roughly compares the utilization rate of road infrastructure in the different municipalities. The ratio is also useful for comparing water and sewer utilization although not all municipalities have water and sewer along all streets. The table shows that Mount Pearl is the most efficient town with a ratio of 11.5 metres of street per residence. The least efficient municipality is Harbour Grace with 42.2 metres of street per residence, while the average of the selected municipalities is 21.6 metres.

This examination would lead one to surmise that Harbour Grace has a significant surplus of street capacity that is not being used. This would have to be confirmed on the ground, but if it is indeed the case, it indicates that Harbour Grace may have surplus infrastructure that can be used to accommodate new development. In the case of Mount Pearl, the table indicates that the opposite situation exists. The city has a minimum of existing street capacity to accommodate new development.

This case example shows that it is not always necessary to develop new infrastructure to create capacity to accommodate economic development. Many municipalities have existing infrastructure that might be able to accommodate businesses looking to develop or expand.

## **Best Management Practices for Municipal Infrastructure**

This discussion addresses a few best management practices that are being used to improve the economic value that municipalities derive from their infrastructure investments. This section briefly mentions land use planning issues, but does not discuss planning in great detail. For a further discussion of land use planning issues as they relate to economic development refer to the companion Module “Land use planning and Economic Development.”

### **Smart Growth**

Land use patterns are the major variable affecting the costs of public infrastructure and services such as roads, water, sewage, garbage collection, and school bussing. Studies have shown that infrastructure costs are upwardly affected by sprawl and can be reduced by Smart Growth. Most activities that involve distribution, whether it is water flowing through pipes, road and sidewalk networks, or people commuting to work are more efficient with compact land use patterns because less investment, travel time, and energy are involved to reach destinations.

### **Demand Planning**

Historically the conventional approach to infrastructure development has focused on supply. At that time there were fewer concerns with the availability of resources. Infrastructure planning focused on engineering and capital investment as solutions to servicing needs. With today’s recognition of capital and environmental constraints, demand planning has become more important.

By gaining a greater understanding of the nature of total and peak demand, demand planning helps in reducing the scale of needed new infrastructure, extend its useful life, and maximize utilization of capital investments. Demand planning aims to reduce unit consumption so that the need for new infrastructure does not grow in proportion to population and economic growth.

### ***Some practical examples of how to reduce unit demand on infrastructure include:***

- Better leak detection and repair in water and sewer pipes
- Reducing outdoor water use for lawn watering, car washing, etc.
- Promoting or regulating water conservation measures, for example, low flush toilets and recycling rainwater
- Reducing the need for storm sewer systems through low impact development (LID) practices. The objective of LID is to manage storm runoff as close as possible to their source, for example, by draining roof water into rain barrels, and installing rain gardens, grass swales, and protected green space to promote groundwater infiltration.
- Educating businesses and residents to reduce consumption during peak demands.
- Promote land development practices that reduce storm water runoff, for example, reducing paved surfaces

- Installing water reservoirs to supplement needs during peak demand
- Metering water use by individual users and charging for excess usage

### **Tangible Asset Management**

Roads, water, sewer, buildings, waste management facilities, equipment, and other infrastructure are capital intensive to build, own, and maintain. Maximizing the economic value of these assets requires a long-term stewardship approach that minimizes the total capital and operating costs over their life span. Through the Public Sector Accounting Board (PSAB), the Department of Municipal Affairs is working with municipalities to develop a more effective and systematic approach to municipal assets management.

### **Maximizing the Use of Infrastructure**

Maximizing the use of infrastructure is the most efficient means to accommodate municipal growth. In order to plan for maximized use, municipalities must first understand the capacity of their existing assets, and then plan how to achieve fuller utilization of that capacity.

### **Land Use Planning**

Land use planning can be used to control where new development can occur in order to direct growth away from areas where infrastructure capacity has been reached and direct it towards areas where there is still surplus capacity. Planning can also be used to limit the spread of new development into areas that would require major municipal investments in new infrastructure.

## **Funding and Partner Opportunities**

The funding of all activities in the municipal is always a concern. With relatively limited resources and ongoing operational requirements it is often necessary to seek outside sources of funding. This is especially true for infrastructure projects that can take many months to complete and can cost millions of dollars. Depending on the nature of the investment there may be options available that fit your situation. Once you have determined that an investment in infrastructure is required then the best approach is to follow the steps below to help determine your need and how best to source the funding required.

**Step 1:** Determine the infrastructure requirements and the amount of funding required, and the ideal timeline involved.

**Step 2:** Examine what kind of funding would best suit the situation. Are you in the position to repay a loan, or would a grant be the preferred route?

**Step 3:** Because funding programs change over time begin exploring the sources of funding that you have used in the past to determine what their current programs include. Traditional sources include the Department of Municipal Affairs, Infrastructure Canada, Atlantic Canada Opportunities Agency (ACOA), or the Federation of Canadian

Municipalities Green Municipal Fund. Remember that not all program requirements are the same so it is worthwhile to explore all those that you are familiar with.

**Step 4:** If the usual sources of funding are not applicable then it is necessary to begin exploring other sources. Begin by asking other municipalities who may have completed similar work where their funding originated. Ask the usual funders if they are aware of other sources or programs that might be applicable. Remember that occasionally there may be programs that have funding available for very specific items such as recreation infrastructure but it may require some investigating and many questions to find an applicable program. Ask everyone.

**Step 5:** Remember that you may not find a funding source for every project you wish to invest in. All this means is that you must re-evaluate it as an action and determine if you keep it as a high priority and keep looking, or if you leave it for a while and reexamine it again in the future. If you find a funding source then proceed as planned.

Finding sources of funding can be a daunting task but there may be opportunities to increase the investment at the local level through partnerships. While funding sources are often referred to as “partners” there may be opportunities to share the initial investment as well. While there may be multiple local partners such as local businesses, not for profit groups, or non-government entities, the most common partner could be a neighbouring municipality. When seeking partners first examine current partnerships or collaborations and then expand out to others you would like to work with. While it is not always possible to partner on projects, there are sometimes opportunities where shared infrastructure is not only possible but desired. As an important part of the process should be to determine if a partnership for the development of the required infrastructure would be appropriate. For further information on collaboration refer to the companion Module “Municipalities and Regional Economic Development.”

## Conclusion and Follow Up

Infrastructure can form a vital factor in your toolbox of economic development but there are a few points to remember. It is important to have a good understanding of the infrastructure that is available along with the infrastructure that is needed or must be upgraded to be effective as a factor in economic development. In addition to the basics each council must understand the necessity of proper investment and infrastructure management. Fortunately in 2010 all municipalities are required to have completed two specific tools that can be a great aid in infrastructure planning and management. First through the implementation of the Public Sector Accounting Board standards each town must have compiled a Tangible Asset list that should inventory all infrastructure and identify life span and replacement costs. Supplementary to the PSAB work all municipalities also must have an Integrated Community Sustainability Plan (ICSP) developed that addresses long term planning issues, including infrastructure and economic development. As a good starting point and follow up to this Handbook and Guide would be to examine both the PSAB and ICSP information your town has developed.

# Workshop Guide

## Workshop Basics

### Basic Concept:

To assist participants understand the connections between infrastructure and economic development.

### Objectives

- Identify municipal roles and responsibilities for public infrastructure.
- Understand the linkages between infrastructure and economic development.
- Understand the importance of different forms of infrastructure for economic development.
- Understand the benefits, challenges, and limitations of infrastructure for economic development.
- Identify best management practices for municipalities in infrastructure development and maintenance

### Materials

- Printed tables
- Flipchart and markers
- Printed sub-section introductions if desired

### Timeframe

This workshop contains 5 detailed exercises and a full day is required to meet the objectives and complete the tables. A short 5-minute break between exercises is recommended along with a meal break at approximately the midway through the workshop.

### Suggestions

- Provide participants with the written sections at the beginning of the module.
- The introductions for each exercise can be read aloud, distributed to each group to read or discussed in general so long as the basic ideas presented are understood before the activity begins.
- Only distribute materials and handouts immediately prior to each individual exercise.

### Groups

- For this workshop groups should be comprised of participants from the same municipalities.
- If this is not possible or not desired for some reason then groups should at least be comprised of participants from similar municipalities.

## EXERCISE #1

### Taking Stock of Existing Infrastructure

Time: 60 minutes

**Objective:**

This exercise will initiate group participation early in the workshop. It is intended to allow participants to take stock of existing infrastructure and future needs and priorities in their municipalities and regions.

**Exercise:**

- Break participants into small groups of 4-6.
- Have them collectively answer the questionnaire provided below and encourage them to discuss the questions with each other as they are doing so.
- Collect some responses to each question and collate scores on flip chart.
- Discuss common or outstanding results.

**Resources required:**

Questionnaire copies, flipchart.

**Note to facilitator:**

It will be useful to check back to the information gathered here at various points during the workshop. Especially if there is more than one municipality participating or if the scores are low.



Questionnaire						
Stocktaking of Municipal Infrastructure and Services						
Infrastructure & Services	Does your municipality provide this infrastructure or service?	Is it a shared service with another municipality?	What percent of the community is served?	How satisfactory is the service on a scale of 0-10?	Does service need to be expanded, improved, neither or both?	Rank in terms of community priority.
Streets						
Sidewalks						
Water Supply System						
Sewer System						
Storm Drainage System						
Trails and/or parks						
Recreation Facilities						
Fire Protection						
Street Lights						
Garbage Collection						
Waste Disposal Site						
Community Hall						
Theatre, Museum, or other cultural facility						
Special facilities for the elderly & disabled						
Other: Please Specify						

<h2 style="text-align: center;">Questionnaire</h2> <h3 style="text-align: center;">Stocktaking of Other Infrastructure and Services in Your Community and Region</h3>					
	Is this service available in your municipality?	If not, how far away is the closest available service?	How satisfactory is the service on a scale of 0-10?	Does service need to be expanded, improved, neither or both?	Rank in terms of community priority.
Provincial Highway					
Health Care Services					
School(s)					
College or University					
Child daycare					
Library					
Cell phone service					
Broadband internet					
3-phase power					
Theatre, museum, or other cultural facility					
Bus service					
Taxi service					
Ferry service					
Airport					
Port & harbour facilities					
Other: Please Specify					

## EXERCISE #2

### Matching Economic

#### Development Opportunities to Infrastructure Needs

Time: 45 minutes

(30 minutes in small groups and 15 minutes feedback)

**Objectives:**

Assess the importance of infrastructure to the economies of the participants' communities and regions.

Match economic development opportunities in participants' communities and regions with needs for new or improved infrastructure.

**Exercise:**

- Divide participants into same groups as first exercise.
- Identify one or two major businesses in each participant's municipality or region and assess the importance of infrastructure to those businesses by completing the attached infrastructure priority table (15 minutes).
- Identify one or two key economic development opportunities in each group's municipality or region and assess how important infrastructure will be to the development of that opportunity by completing the attached infrastructure priority table (15 minutes).
- Go back to main group and create a table that matches existing economic activities and/or sought-after opportunities with the types of infrastructure that are most important to their viability (15 minutes).

**Resources required:** Flipchart, markers, tape

**Note to facilitator:**

During the discussion refer back to the questionnaire findings from Exercise #1. Compare the infrastructure priorities identified in Exercise #1 with the types of infrastructure identified as important in this exercise.

Infrastructure Priority List	<b>Existing Businesses</b>	
	1:	2:
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

Infrastructure Priority List	<b>New Business Opportunities</b>	
	1:	2:
1		
2		
3		
4		
5		
6		
7		
8		
9		
10		

## EXERCISE #3

### Using Existing Infrastructure to Accommodate Economic Development

Time: 45 minutes

(30 minutes in small groups and 15 minutes feedback)

#### **Objectives:**

Understand strategic approaches to utilizing existing infrastructure to promote and facilitate economic development.

Discuss the capacity and suitability of existing infrastructure that might be taken advantage of to accommodate economic development.

Understand how municipalities can better manage, maintain, and improve what they already have to take advantage of economic opportunities.

Understand the challenges to improving utilization of existing infrastructure capacity.

Compare the importance of infrastructure relative to other factors that can affect the economic health of the municipality or the region.

#### **Exercise:**

- Divide participants into groups of 5-6.
- Discuss the benefits and challenges of relying on existing infrastructure to promote and take advantage of economic development opportunities. Refer to the four objectives above.
- Considering the previous 2 exercises discuss the following questions:
  1. Is there any new infrastructure that would significantly help economic development in your area?
  2. In what ways can you better take advantage of the existing infrastructure?
  3. Are there instances where increased capacity would be more beneficial than investing in new infrastructure?
- Report back to the main group and compare findings and conclusions.

**Resources required:** Flipchart, markers, tape

#### **Note to facilitator:**

Draw out the participants on the experiences in their own municipalities.

## EXERCISE #4

### Best Management Practices

#### for Municipal Infrastructure

Time: 45 minutes

(30 minutes in small groups and 15 minutes feedback)

**Objectives:**

Understand approaches for maximizing long-term value and use of municipal infrastructure investments.

Understand the benefits and challenges of improved infrastructure management.

**Exercise:**

- Divide participants into groups of 5-6.
- Discuss past and current approaches to municipal infrastructure management.
- Discuss the benefits and challenges of improving municipal infrastructure management.
- Discuss approaches to limiting the need for and maximizing the benefits of municipal infrastructure.

**Resources required:**

Flipchart, markers, tape

**Note to facilitator:**

Draw out the participants on the experiences in their own municipalities.

## EXERCISE #5

### Funding & Partner Opportunities

Time: 60 minutes  
(20 minutes for each part)

#### **Objectives:**

Determine possible Partners. Determine possible Funding sources

#### **Exercise: Part 1**

- Divide participants into groups of 5-6.
- Have each group brainstorm any possible partners for infrastructure development or utilization. (10 minutes)
- As one whole group compile the results into a list of possible partners. (10 minutes)

#### **Part 2**

- In small groups again, have each group brainstorm any possible funding sources for infrastructure development or utilization. (10 minutes)
- Bring the groups and compile the results into a list of possible funding sources. (10 minutes)

#### **Part 3**

- Combine all answers into a master list identifying if the possibility is a potential partner, funding source or both, encouraging discussion as to why. The information can be compiled in a table similar to the one below.
- When participants have exhausted their list suggest any of the below items that were not already listed in the discussion.

List of Possibilities	Partner	Funding
FCM Green Municipal Fund	No	Yes
Gas Tax Agreement	No	Yes
Neighbouring Towns	Possibly	Possibly
Building Canada Fund, Infrastructure Canada	No	Yes
Banks or other Financial Institutions	No	Yes

**Resources required:** Flipchart, markers, tape





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