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Potential Uses of Abandoned Rail Corridors for Regional Rail Purposes

Research conducted for the Canada Transportation Act Review

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POTENTIAL USE OF ABANDONED RAIL CORRIDORS FOR REGIONAL RAIL PURPOSES

A report for the Canada Transportation Act Review

REPORT

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A REPORT FOR THE CANADA TRANSPORTATION ACT REVIEW

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Executive Summary

The central question to this paper is:

Is it important to conserve existing rail corridors for possible future use as commuter rail lines?

This paper provides background information dealing with the potential use of existing rail corridors for regional rail purposes in Vancouver, Calgary, Winnipeg, Toronto, Montreal and Halifax. The urban form anticipated for the six cities is reviewed to determine to what degree commuter rail may play a role in the urban transportation system, and as a consequence whether the abandonment of rail corridors would represent lost opportunities. Four of the cities have undertaken some study of the potential for future regional rail/commuter lines, and the other two, Winnipeg and Halifax, are in the process of this work.

The paper suggests that future growth in Canada's urban centres will become increasingly limited by a lack of transportation capacity. It is anticipated that over the next twenty years our largest cities will experience levels of travel that will cause significantly more severe traffic congestion. This congestion will foster growth at suburban and ex-urban nodes rather than in the traditional central areas. The decreased mobility will increase the demand for expanded commuter rail networks as an alternative to auto travel among these areas and from these areas to city cores.

As the urban form spreads to a polycentric pattern around our major cities, the need for longer range rail corridors will become greater. The transportation axes of one hundred years ago – the rail corridors - may well see a renaissance, as growing road congestion and fast growth in satellite cities produces demand for rail service.

Any rail corridor represents an opportunity for alternative transportation uses. In terms of priority, the most important corridors are those that extend current regional rail routes further into the urban hinterland. Of equal significance are corridors within urban areas that may link existing or growing high density nodes. However there are many other transportation-related purposes to which an abandoned rail corridor may be put.

It would be in the public interest to ensure that all rail corridors proposed for abandonment in urban areas or potentially serving urban areas are retained in Federal ownership against the time when Provincial or local governments may request their use for transportation purposes. An estimate of the cost of acquiring land for similar corridors has been made, only for purposes of an understanding of the order of magnitude.

The report provides a summary of "The Rail Banking Program" in the United States, a method intended to preserve rail corridors proposed for abandonment through interim conversion to trail use, and suggests that the program is relevant in the Canadian context. The paper concludes that the current abandonment provisions and processes are not serving the Federal interest to the extent that they do not necessarily act to preserve rail corridors as unique urban resources with the potential to significantly improve our urban transportation networks.

1. INTRODUCTION

Purpose

This report is intended to provide background information dealing with the potential use of existing rail corridors for regional rail purposes in six of Canada's major urban centers: Vancouver, Calgary, Winnipeg, Toronto, Montreal and Halifax. These cities were selected to address both the three largest urban areas and a sampling of the situation throughout the rest of the country. The research was specifically directed to investigate the degree to which the abandonment of rail corridors may result in the loss of a potential use of the corridor for regional rail systems.

This report has been prepared in the context of and with the benefit of the report prepared for the Review Committee by Richard Soberman entitled "Public Transportation in Canadian Municipalities – Implications for the Canada Transportation Act and the Federal Role in Transit." Dr. Soberman has described the current status of regional commuter rail systems in Toronto, Vancouver and Montreal and provided a comprehensive understanding of the role and function of regional commuter rail as an aspect of public transit. Dr. Soberman has outlined the implications of railway rationalization for commuter rail agencies as being:

- "certain routes may be discontinued, thereby precluding opportunities to continue service and expand markets: and,
- "the diversion of traffic from abandoned routes in combination with growth in freight traffic on the remaining routes of the rationalized system routes may limit possibilities for increasing the frequency of commuter services."

Dr. Soberman anticipates that "within relatively short periods of time, commuter rail agencies could be faced with decisions regarding the acquisition of routes in order to continue or expand services."

In this context our report looks specifically at the urban form anticipated for the six cities to determine to what degree commuter rail may play a role in the urban transportation system, and as a consequence to what degree the abandonment of rail corridors would represent lost opportunities to enhance future urban mobility.

To assist in narrowing the scope of this question, the following parameters were established:

- Rail corridors were defined as all corridors indicated in the Canadian Railway Atlas published in 2000.
- Any route was considered as potentially abandoned as consolidation may make even main lines redundant.

2. BACKGROUND ON TRANSPORTATION ISSUES

Our urban structure is changing and will continue to change

Canadians are witnessing a fundamental change in the structure of the cities in which four out of five of us live, work, and play. This change is manifested geographically, but has its roots in economic and technological trends. While central cores of cities remain a key element of urban economies, the arrival and diffusion of new transportation and communications technologies has eroded the traditional relationships among downtown, suburban, and ex-urban (urban shadow) areas. This change represents the next step in a progressive economic process of spatial redistribution of uses that has been shaping North American cities for over one hundred and fifty years, since the Industrial Revolution began a period of rapid urbanization in the mid nineteenth century.

After 1970, as manufacturing began to decline and service sector uses grew in importance, fundamental changes also occurred in the form and structure of land uses. Suburbanization had been, until the 1980s, a largely residential phenomenon – the majority of people lived in suburbs but still worked in central cores or in industrial areas. But beginning in the 1980s, commercial uses began to leave central areas and inner ring neighbourhoods to locate in new, low-density suburban nodes. The author Joel Garreau coined the phrase ‘Edge City’ to describe these new places, which American policymakers soon identified as key growth nodes:

The spatial form of U.S. metropolitan areas has evolved significantly in the last 20 years. The accepted picture of the metropolitan area as a place with one economy, located in downtown skyscrapers and inner ring factories, is no longer valid. Now, 57 percent of office stock is in the suburbs, up from 20 percent in 1970. Today the bedroom suburb, little more than a home to workers commuting to the central city, is rare.

Source: The Technological Shaping of Metropolitan America, Congressional Budget Office, 1995.

This trend is as apparent in Canada. What were once dormitory suburbs are now increasingly urbanized metropolitan areas outside the central city that, like the core, are places for both living and working. Activity which was previously associated with inner-city locations has spread to suburban and ex-urban areas, including wholesaling, retailing, consumer services, and distribution/logistics industries.

The outmigration of businesses from the core was driven by both push and pull factors. Traffic congestion, the difficulty of parking, and high prices, pushed businesses to search for alternatives elsewhere. At the same time, the expansion of road networks in formerly rural areas, the continually declining real costs of automobile ownership, and the easy availability of large parcels of cheap land attracted firms in a variety of sectors to relocate. Further, new communications and distribution technologies were continuing to free businesses from their traditional ties to core locations.

These changes are in evidence in the evolution of the growth of our major cities over the past thirty years. During this time, the urban structure has changed from one dominated

by the downtown employment centre, to one with many centres of economic activity and concentrations of employment. Regional transportation access to the 'new' employment centres, while supplemented by public transit, remains focussed on road facilities, primarily from the major limited access highways. Many people both live and work in the suburbs and rarely visit the central city; others still commute to the core for work, but patronize retail, personal, business, consumer, and social services in the suburbs.

This is not to say our urban centers are “hollowing out”, as some commentators have suggested. Toronto, Montreal, and Vancouver have also witnessed extensive growth in urban sub-centers, complementing their established central areas. International immigration continues to be focused on our largest urban centers, a trend which is unlikely to change in the near future. Infill development and intensification of uses has increased densities in many older areas of Toronto and, to a lesser extent, Montreal. Gentrification of older urban neighbourhoods continues in all three large centers, and in many other Canadian cities. Together, these trends have produced a demand for land within urban areas that is both increasing pressure for suburbanization and making urban lands more valuable – which in turn makes the location of new transportation corridors more difficult. Recent pressures for potential alternative uses of the Canadian Pacific ‘Arbutus’ corridor in Vancouver are a good example.

These shifts in the geography of urban areas are producing new economic roles for both central cities and their surrounding regions. These roles will demand different transportation networks that, while still predominantly auto-oriented, may allow the opportunity for a dramatically increased role for inter-city rail transport. In short, as edge cities and satellite cities continue to grow and become more economically diverse, they are likely to become more viable centers for mass transit service.

Travel demand will continue to increase

As described above, the majority of growth over the past few decades and the majority of the projected growth has occurred and will continue to occur in areas not well served by rapid transit or public transit generally. This relationship is symbiotic – as growth has occurred in areas not well served by transit, it has naturally resulted in the creation of urban forms that are auto-oriented rather than transit-oriented, contributing to road congestion.

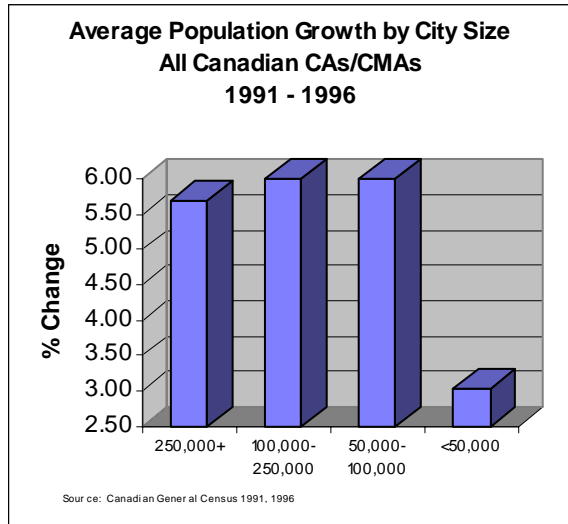
Today, most of the largest Canadian urban centres regularly experience high levels of congestion on arterial roads and expressways during the peak period. In some centers, such as Toronto and Vancouver, traffic congestion has become particularly acute. For example, some 60 percent of the freeway network in the Greater Toronto Area operates at unacceptable levels of traffic congestion during morning and afternoon rush hour periods.

There is no clear quantifiable measure of traffic congestion. In very real terms, congestion is measured by most of us by how long it takes to get to or from work or school. One strong indicator is the unpredictability of travel times. A recent speed/delay study showed rush hour average speeds of 75 km/hr. and 33 km/hr. on consecutive days on the same section of Highway 401 in Toronto. This impact of this variation in travel time bears directly on driver frustration and quality of life, as well as the cost of goods movement and public carrier operations.

Without changes to the current trends, corporate and personal relocation decisions will continue to move development outside major urban centers in Canada. Decreasing travel speeds, increasing commuting times, the impact of incidents and the tremendous reduction in available capacity have all resulted in an increasingly unpredictable transportation network that is beginning to have severe implications for driver frustration, quality of life issues and the economics of goods movement.

Edge cities and satellite cities will grow

The most likely consequence of an expanding economic activity and housing development is the growth of a satellite city region centered on a larger, metropolitan center in the next twenty years.¹ This trend is already in evidence, as the data below demonstrate. According to the chart below, the average population range – which most satellite cities fall into – is 100,000-250,000 in the country over the period 1991-1996, available. Further, as the table below indicates, the average population range in Canada over the same period, six are cities of the size of Toronto or Vancouver. Moreover, all ten cities are in the 100,000+ population range (1996). While this information is consistent with our experience with growth rates in communities, it is also consistent with these trends.



In some ways the future structure of Canada's largest cities is likely to reflect the experience of several centers in the United States, including among others the cities of Atlanta, Boston, Houston, and Phoenix. As our cities evolve into multi-centred regions, a key challenge will be to maintain quality of life and the opportunity to pursue differing lifestyles within a single urban area.

Fastest Growing Canadian Cities 1991-1996

Name	Pop 1991	Pop 1996	% Growth
Courtenay (B.C.)	44,523	54,912	23.3
Barrie (Ont.)	97,150	118,695	22.2
Kelowna (B.C.)	111,846	136,541	22.1
Chilliwack (B.C.)	54,962	66,254	20.5
Abbotsford (B.C.)	113,562	136,480	20.2
Nanaimo (B.C.)	73,547	85,585	16.4
Duncan (B.C.)	30,924	35,803	15.8
Penticton (B.C.)	35,823	41,276	15.2
Vernon (B.C.)	48,139	55,359	15
Kamloops (B.C.)	74,353	84,914	14.2

Exclusive reliance on the expansion of the road network is unlikely to be possible. A transportation network is needed that takes advantage of the historic and new activity centres and links these with high capacity transit. These cities all currently have road and transit networks that can feed a regional rail link. In most cases there is land available for parking and local transit systems that focus on the local downtown or activity centre.

The next twenty years offer a reasonably certain future in some respects

We are very likely, over the next twenty years, to experience:

¹ In this analysis, Statistics Canada's definition of a 'census metropolitan area' is useful, because it includes all suburbs of a major center but excludes satellite cities. An example of a larger economic region might be the 'Lower Mainland/West Vancouver Island' region of British Columbia. In this region, Vancouver is the large metropolitan center and cities such as Abbotsford and Chilliwack are satellite cities.

- increased levels of travel that will cause an increasing extent and degree of traffic congestion;
- the continued focus of growth at suburban and ex-urban nodes – edge cities and satellite cities;
- a consequent demand for an expanded commuter rail network to offer an alternative to auto travel between and among these areas and from these areas to city cores.

This future is extremely likely to occur because significant changes to travel patterns occur only very slowly, and because, in many urban centers, land use patterns are already established through planning policy. All current indicators point to these trends continuing for the foreseeable future.

Increasing environmental regulation is reducing available corridors

Over the past fifty years, all regions of Canada have witnessed a steadily increasing degree of regulatory control restricting the location, nature, and amount of new development and transportation corridors. This control has largely resulted from an increased public understanding of the cost to the environment of greater automobile use, and to a lesser extent, of urban sprawl. It is reasonable to assume that the accelerating trend toward greater awareness of environmental damage will continue to produce greater pressure on policymakers to limit the consumption of greenfield lands and in some areas, of development more generally.

Demographic and social changes that will occur over the next thirty years are likely to further strengthen public commitment to more stringent regulation. As the post-war generation moves into the late stages of careers and early retirement, personal economic success will take a back seat to lifestyle, health and security issues.

The growth patterns described in the previous few pages will be shaped by the application of these values. Planners and designers will have to fit development (including infrastructure) into the environment, rather than adjust the environment to accommodate development. A greater justification will be required for the generation of environmental impacts: the trade-off equation (growth versus environmental impact) will become more one sided. The implications on the transportation industry are the likelihood of much greater difficulty in locating new transportation corridors.

Implications for rail corridor abandonment

As it becomes more difficult to locate new transportation corridors the value of the re-use of existing rail corridors will increase. The estimated property costs today of establishing a new 100 foot right of way through an urban area is approximately \$600,000 to \$1.8M per kilometer for the six cities surveyed. This estimate only includes the land cost, assuming serviced industrial land, not the substantial costs for the approval process and injurious affection to re-acquire a new corridor.

As the urban form spreads to a polycentric pattern around our major cities, the need for longer range rail corridors will become greater. New markets for commuter rail services may exist in satellite cities which were formerly too small to support a regular service. The transportation axes of one hundred years ago – the rail corridors - may well see a renaissance, as growing road congestion and fast growth in satellite cities produces demand for rail service. Ironically, the same forces that created the dominant urban centre by allowing long distance commuting now may push us back to a polycentric form that supports rail transportation.

3. CASE STUDIES - SIX CANADIAN CITIES

In order to determine whether there was a potential issue related to rail corridor abandonment, current and future land use trends in six cities were investigated. The cities involved are Halifax, Montreal, Toronto, Winnipeg, Calgary and Vancouver. The six urban regions vary dramatically in size and area, from Halifax at a population of 330,000 over 2,503 km² to the Greater Toronto Area at 5,000,000 over an area of 7,042 km². Figure 1 provides a relative overview of each of the city- regions.

Method of Data Collection

One of the objectives of this study was to determine regional rates of growth and development. The Canadian Census provided detailed demographic data for the Census Metropolitan Areas (CMA's) for each of the six urban centres. A CMA is comprised of a major city and a number of the adjacent municipalities that StatsCan considers to have social and economic inter-relationships. The CMA level of data was generally consistent with the regional planning frameworks of the Greater Vancouver Regional District (GVRD), the Greater Toronto Area (GTA), the Greater Montreal Area (GMA) and Halifax Region. In the case of Calgary and Winnipeg, both cities exhibit strong central city characteristics and neither had a regional planning model in place, although Winnipeg is in the early stages of developing a regional plan.

The primary sources of information are the regional growth management strategies prepared by governments in Halifax, Montreal, Toronto, Winnipeg, Calgary and Vancouver. There are a variety of reports available, including Official Plans, Strategic Plans and Transportation Master Plans. This information was primarily obtained through city websites, however in all cases, e-mails or telephone discussions with planning staff provided a consistent level of detail.

Method of Rail Corridor Analysis

Our assessment of the potential importance of existing rail corridors was based on a review of the particular city-region's future growth and settlement patterns and stated policy documents. In some cases, this information was supplemented by specific studies that identified a rail corridor for a specific transportation purpose.

Based on this information the existing rail corridors were reviewed to determine their potential for future regional rail use. The corridors have been ranked according to the following system. The series of following exhibits depict current and future growth patterns, the existing rail corridors, and the potential for these corridors to serve a regional rail purpose in the future. The potential use for regional rail has been characterized as 'priority', 'high potential' or 'low potential' in order to simplify the analysis. The characterization is based on the following definitions:

Priority Corridors - existing commuter rail corridors

These corridors are those that are presently being utilized by AMT in Montreal, with 122 km of routes, GO Transit in the Greater Toronto Area with 361 km of routes and West Coast Express in British Columbia with one route of 65 km.

High Potential Corridors- identified for commuter rail use

High Potential Corridors are those that have been identified by a regional transportation study or through our analysis as being important to the future commuter rail transportation infrastructure in a city or region.

Low Potential Corridors (remaining corridors)

Low Potential Corridors are those without an obvious potential for regional rail use.

HALIFAX

Regional Growth Analysis

The Regional Municipality of Halifax was established in 1996 through the amalgamation of the municipalities of Halifax, Dartmouth, Bedford and Halifax County. The two largest municipalities are Halifax and Dartmouth, which had a combined population of about 180,000 in 1996. The existing urban form and rail corridors are shown in Figure 2.

As Table 1 indicates, projected population growth in the Region is expected to increase to 387,371 people by 2021 or about 2,200 people per year. While this rate of growth is not high relative to other Canadian cities in this study, Halifax is still experiencing a moderate rate of suburbanization. This is evidenced by a decline in the population of the City of Halifax and Dartmouth between 1991 and 1996 of about 2,800 people while Bedford grew by about 2,000 people. The suburban growth is primarily in population as about 60% of the Region's employment was located in the urban core of Halifax and Dartmouth in 1996.

Figure 2 illustrates the Region's anticipated growth areas over the next twenty to thirty year planning period. It is apparent that future population growth will contribute to suburban trends, especially in the case of land subject to development pressure.

TABLE 1 – Halifax Statistics

1996 CMA Population	332,518
2021 CMA Population	387,371
1996 City Population	113,910
Forecast Annual Growth	2,200
1996 Transit Modal Share	10.9%
Municipalities in CMA	10
City Area	79 km ²
Regional Area	2,503 km ²
Regional Rail Corridor Length (est.)	35 km

Rail Corridor Analysis

The Region of Halifax is served by a single primary rail line that splits at Windsor Junction and travels on either side of Bedford Basin and Halifax Harbour to serve the cities of Halifax and Dartmouth. This is the only corridor that serves the Regional Municipality of Halifax. Figure 2 identifies this line as a high potential corridor to serve long-term regional commuting demands. A portion of this corridor on the Halifax side features a grade separated, double track, one track of which CN is proposing to remove in the spring of 2001.

MONTREAL

Regional Growth Analysis

The Greater Montreal Area is the second largest urban area in Canada. The CMA established by StatsCan includes 112 municipalities, however many of these communities are presently involved in a program of municipal restructuring. The existing urban form and rail corridors are shown in Figure 3.

As Table 2 indicates, the population in the CMA is expected to increase to 4,031,000 people by 2021 or about 28,000 people per year. This projected high rate of growth has caused the Ministère des Transports to prepare a comprehensive Transportation Management Plan for the Greater Montreal Area. This Plan proposes a series of strategies to maintain connectivity between population growth in the urban fringe and the focus of employment opportunities in downtown Montreal.

TABLE 2 – Montreal Statistics

1996 CMA Population	3,326,510
2021 CMA Population	4,031,000
1996 City Population	1,016,376
Forecast Annual Growth	28,000
1996 Transit Modal Share	20.3%
Municipalities in CMA	112
City Area	177 km ²
Regional Area	4,024 km ²
Regional Rail Corridor Length (est.)	600 km

Rail Corridor Analysis

The Greater Montreal Area is served by four existing commuter rail lines, two of which have recently been initiated and all of which have been designated as Priority on Figure

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3. The first line serves the western portion of Montreal and extends west from the downtown, past Dorval International Airport and off the island to the community of Rigaud located about 50 kilometres from the downtown. The second commuter train extends north-west from the downtown to the community of Deux-Montagnes. The third line extends from the area of Montreal West across the Mercier Bridge to the community of East Delson/Saint Constant. The fourth commuter rail line service travels north-west from the downtown to the community of Blainville located about 30 kilometres from downtown Montreal.

The City's Transportation Master Plan, prepared in April of 2000 proposed the establishment of two other commuter rail services. The first proposed line extends south and east from the downtown across the St. Lawrence River to the community of Mont-Saint-Hilaire. The second service is proposed to extend north-east from downtown Laval about 30 kilometres to the community of Mascouche.

TORONTO

Regional Growth Analysis

The Greater Toronto Area (GTA) is the largest urban area in Canada currently with a population of close to 5M, which is forecast to grow to 7.4M persons by 2031. The Region is comprised of 30 member municipalities. The only regional authority is the Greater Toronto Services Board whose mandate is to promote and facilitate coordinated decision-making among the municipalities in the GTA. To date the only service administered directly by the GTSB is Go Transit, the commuter rail agency. The existing urban form and rail corridors are shown in Figure 4.

As Table 3 indicates, projected population growth in the region is expected to increase to 6,975,000 people by 2021 or about 123,000 people per year. This high rate of growth is expected to continue the rapid suburbanization within and beyond the GTA.

Employment is increasingly dispersed throughout the GTA. Forecasts show modest growth in jobs anticipated in the downtown of Toronto with the majority of growth in the surrounding suburban jurisdictions. Even with only modest growth in the City of Toronto, maintaining the current levels of transit ridership would require doubling the capacity of the existing network.

Figure 4 illustrates the Region's anticipated growth areas over the next twenty to thirty year planning period. These areas have been designated for growth by local municipalities. Communities poised to accommodate the highest amount of new growth include Oakville, Milton, Brampton, Pickering, Ajax and Oshawa.

TABLE 3 – Toronto Statistics

1991 CMA Population	3,898,933
2021 CMA Population	6,975,000
1996 City Population	2,056,703
Forecast Annual Growth	123,000
Modal Share	22.0%
Municipalities in CMA	29
City Area	506 km ²
Regional Area	7,042 km ²
Regional Rail Corridor Length (est.)	990 km

Rail Corridor Analysis

The Greater Toronto Area is served by 13 rail corridors, as shown on Figure 4. Four lines extend in an east west direction, while the other nine lines travel north and north-east from Lake Ontario. Shown as Priority Corridors are the existing six Go Rail routes. Go Rail has also indicated the potential for extensions to existing routes on the Toronto-Hamilton, Toronto-Georgetown, Toronto-Stouffville and Toronto-Oshawa lines. Potential new routes have been indicated for lines to Orangeville, Pickering and Ajax.

WINNIPEG

Regional Growth Analysis

In 1998, the Province of Manitoba initiated a study to review the opportunity to establish a regional government administration for the City of Winnipeg and its surrounding municipalities. This initiative began with the establishment of a panel organized to review and make recommendations respecting the policy and procedural framework guiding land use planning in the greater Winnipeg area, referred to as the Capital Region. The existing urban form and rail corridors are shown in Figure 5.

The Capital Region Review Panel included 16 municipalities in its scope of study. This area was slightly larger than the CMA, which has only 11 municipalities. Table 4 summarizes population data only for the City of Winnipeg. In this summary, it is notable that the projected population in 2021 for Winnipeg anticipates a decrease in population of about 750 people per year. The decrease is linked primarily to the combination of continued out-migration of the working age population and an aging population. To some degree, this decrease is also attributed to increased population growth outside of the City of Winnipeg. However, this growth is very modest and dispersed.

Notwithstanding the projected population decline, the City is prepared to accommodate additional residential growth within its boundaries. This is indicated on Figure 5.

TABLE 4 – Winnipeg Statistics

1991 City Population	615,215
2021 City Population	599,800
1996 CMA Population	667,209
Forecast Annual Growth	- 750
Transit Modal Share	14.4%
Municipalities in CMA	11
City Area	464 km ²
Regional Area	4,078 km ²
Regional Rail Corridor Length (est.)	170 km

Rail Corridor Analysis

Winnipeg, being the western hub of train traffic has one of the most extensive networks of rail lines in the country that extend from or pass through its downtown. Four lines serve southern Manitoba, three extend to western Canada, three serve northern Manitoba and three extend to eastern Canada.

Given Winnipeg's modest growth forecasts and present lack of a regional transportation strategy, there does not appear to be any specific rail corridor of high potential for commuter rail use. Notwithstanding, the Emerson Junction CN line extending south, and the Melville CN line extending west have both been identified as high potential corridors on the basis of their connection between future development lands and downtown Winnipeg.

CALGARY

The City of Calgary is also not organized within a regional government structure. The City of Calgary accounts for about 93% of the population of the Calgary CMA. Calgary anticipates a high rate of growth over the next twenty-five years. As Table 5 indicates, projections anticipate that Calgary will increase to 1,200,000 people by 2021 or about 17,000 people per year. The existing urban form and rail corridors are shown in Figure 6.

Population statistics in the communities surrounding Calgary also indicate strong rates of growth. Notably, the communities of Chestermere, Airdrie and Rocky View all experienced growth rates in excess of 4% per year between 1991 and 1996. However, given Calgary's size in relation to these communities combined with its ability to sustain continued long-term growth, it is likely that the majority of growth will occur within the City.

TABLE 5 – Calgary Statistics

1991 City Population	710,795
2021 City Population	1,200,000
Forecast Annual Growth	17,000
Transit Modal Share	12.6%
Municipalities in CMA	8
City Area	717 km ²
Regional Area	5,083 km ²
Regional Rail Corridor Length (est.)	100 km

Rail Corridor Analysis

Four rail lines extend out from Calgary's downtown, as shown on Figure 6. Canadian Pacific (CPR) lines extend north to Edmonton, west to Vancouver and south to Lethbridge. A CPR line also extends east to Medicine Hat. CN lines run to the north and to the east.

VANCOUVER

Regional Growth Analysis

The Greater Vancouver Regional District (GVRD) is the third largest urban area in Canada and was established in 1967. The mission of the GVRD is to help protect the quality of life in the Region and deliver services in an efficient and cost-effective manner. The boundaries of the Region closely resembles the Vancouver CMA which had a population of 1,831,665 people in 1996. The existing urban form and rail corridors are shown in Figure 7.

As Table 6 indicates, the population of the Region is projected to increase to 2,740,603 people by 2021 or about 36,000 people per year. This high rate of growth combined with the geographic development constraints has led to the rapid growth in communities such as Coquitlam, Langley and Surrey, all of which experienced growth rates between 4% and 5% over the 1991 to 1996 period.

TABLE 6 – Vancouver Statistics

1991 CMA Population	1,602,590
1996 CMA Population	1,831,665
2021 CMA Population	2,740,603
Forecast Annual Growth	36,000
Transit Modal Share	14.3%
Municipalities in CMA	37
City Area	113 km ²
Regional Area	2,820 km ²

Rail Corridor Analysis

The Greater Vancouver Regional District is served by three rail lines with a number of branch lines, as shown on Figure 7. All of the lines, except those owned by BC Rail, travel east and south from the City of Vancouver.

The Region's existing commuter train, the West Coast Express, is a regional rail service that provides commuter service from the communities of Mission, Haney, Maple Ridge, Pitt Meadows, Port Coquitlam, Coquitlam, Port Moody to downtown Vancouver. This service has been in operation since 1995 and uses the existing CPR line, as shown on Figure 7.

Our assessment of these corridors was assisted by the GVRD's Livable Region Strategic Plan. Figure 7 identifies two rail corridors with high potential for the establishment of future commuter rail linkages.

Summary

With the exception of Winnipeg and Halifax, the cities studied are all forecast to have relatively high growth rates with the majority of new development to occur in suburban areas. The form and location of development will offer the opportunity for some of the commuting market to be served by regional rail services. In terms of the potential use of rail corridors for urban transportation purposes there is an order of magnitude difference between the substantial potential in Canada's three largest cities, and the other three centers studied.

4. THE AMERICAN EXPERIENCE IN RAIL BANKING

The issue of the protection of railway corridors for future transportation use has been addressed in the United States of America through an Act of Congress passed in 1983. In that year the US Congress amended the National Trails System Act to create what was called “The Rail Banking Program”, in response to concern about the rapidly shrinking size of the rail network in the United States. Rail Banking was a method anticipated to preserve lines proposed for abandonment through interim conversion to trail use.

By 1916 the United States of America possessed the largest railroad system in the world, with almost 300,000 miles of track connecting most of the settled areas in the nation. Today less than half of the original rail system remains and approximately 2,000 miles of track are abandoned each year.

The legal status of railway lines in many of the United States varies significantly from that in Canada. Most railway companies do not own the land on which the track lies; rather they have easements over the land of adjoining property owners. Unless those easements are rail banked by converting them to a trail the railway’s rights are extinguished and the land reverts to the adjoining property owners. This occurs when the Surface Transportation Board authorizes the abandonment of the lines and the abandonment authority is exercised by the railway company.

The lines shared by Class 1 railway companies, the large railway companies, fall into three categories. Generally, any of the lines in the first category are viable. When offered they have been purchased by new short line operators and regional rail road operators who have typically been able to operate profitably, rebuild traffic and preserve rail services to communities. In fact, the number of short lines in the United States has more than doubled since 1980.

At the other extreme there are some lines shared by Class 1 railway companies that are not viable and meant for permanent abandonment, with no reasonable prospect of future viability. The third category of lines falls between these two extremes. They are lines that are not sufficiently viable today to attract a new operator but which could be viable in the future. It is the third category of lines that the Rails to Trails Act was intended to address.

As part of the initiatives that affected the use of abandoned railway lines the Inter Modal Surface Transportation Efficiency Act of 1991 known as “ISTEA” provided funding for enhancements for bicycling and pedestrian facilities including rail trails. ISTEA has since been replaced by TEA 21, the Transportation Equity Act for the 21st Century. One of the requirements to qualify for federal funding is that sixteen factors be considered in developing a transportation plan. One of these is the :

“Preservation of rights-of-way for construction of future transportation projects, including identification of unused rights-of-way that may be needed for future transportation

corridors and identification of those corridors for which action is needed to prevent destruction or loss.”

In the decade from 1986 to 1996 there were 232 requests for trails filed with the Board involving approximately 5,800 miles of railway corridor. The Board granted 172 of those requests, involving approximately 4,500 miles of railway corridor. Approximately 3,100 miles of trails involving 62,000 pieces of private property were formalized by 1996. A total of \$240 million of Federal funding was granted to convert the lands to trails.

The trail requests that were not granted did not meet the standard for trail use or there may have been other circumstances involved. If there were other public interests or parties seeking to use the rail corridor for actual rail service the trails request would not have been considered.

In 1996 the Act was reviewed by Congress at a series of hearings to determine whether or not it was still effective and achieving its original purposes. Submissions made to Congress at the time suggested that the Act should be amended to ensure that the process to revert back to railroad use was made as easy as possible. It was noted at the hearings that the reversion back to a railroad use was required to undergo a full environmental assessment process. This was proving to be very difficult, time consuming and expensive. It was suggested at the hearings that if the intention of the Act was to preserve the corridors for railroad use then there should be some recognition of a degree of existing rights for the corridors to be used for those purposes.

During the Congressional Hearings it was noted that there is significant potential in abandoned railroad corridors for other forms of transportation, other than walking or bicycling, such as light rail or special purpose bus routes. It is worth noting that it was mentioned in the Hearings that the trails are being preserved for a time “when oil runs out”.

Potential use by urban transit and commuter rail systems is significant

The American Public Transit Association represents, in addition to many other public transit systems, 14 commuter rail systems located in major urban areas of the United States. These commuter rail systems carry over 352,000,000 people a year using 6,400 miles of railroad right of way. The typical commuter railroad system operates over rights of way that are part of the general freight railroad system.

However none of the 14 American systems operates in quite the same way. Some systems own the vast majority of the rights of way that they operate over; other systems rely on agreements with freight railway companies or AMTRAK in order to use the right of way. The key similarity in both cases is that the existing railroad right of way is used; that is, a commuter railroad is not attempting to create railroad right of way when none currently exists. This is the key feature that makes commuter railroads very cost effective when starting a new system.

At the hearings in 1996, testimony was given by the APTA that future use of railroad rights of way by commuter rail systems was a key and significant potential means of providing for improved mobility in American cities. The example used was the acquisition by the Dallas Area Rapid Transit system of over 150 miles of rail corridors in the Dallas area. Because DART does not plan to use these corridors for passenger service for several years, rail banking the corridors for trail use is the ideal interim solution.

There is a direct relevance to the Canadian context

Urban transportation needs in the United States and Canada are essentially identical. While the method of protection, the history of railway corridor ownership and the process of abandonment may differ significantly, the intent and effect of the American experience seems relevant to the Canadian context.

5. FINDINGS AND CONCLUSIONS

The central question to be answered by this paper is:

Is it important to conserve existing rail corridors for possible future use as commuter rail lines?

In order to address this question we can summarize our findings as follows:

1. The largest urban centres in Canada are projected to grow rapidly and result in a proportionally greater growth of suburban areas. In these cities the preservation of existing rail corridors is critical, because growing traffic congestion and changes in urban structures are creating conditions supportive of commuter rail.
2. There are a large number of medium-size cities in Canada that have not been examined as part of this study and are growing rapidly as well – these cities may represent major opportunities, especially those that are satellite cities near the largest urban centres.
3. Any rail corridor represents an opportunity for alternative transportation uses.
4. In terms of priority, the most important corridors are those that extend current regional rail routes further into the urban hinterland.
5. Of equal significance are corridors within urban areas that may link existing or growing high density nodes (such as the Pickering Airport or Dorval); and corridors that run “against the grain” of other routes, thus offering the potential for connections between routes or routes serving peripheral centres.
6. Of lesser significance are a number of corridors that do not serve existing or future growth centres, although portions of such corridors may have the potential for use as non-rail related transportation or infrastructure corridors.
7. Four of the cities included in this analysis have undertaken some study of the potential for future regional rail/commuter use of existing corridors, and the other two, Winnipeg and Halifax, are in the process of this work. The analysis done to date identifies specific rail corridors for urban transportation use in the context of the needs of the community and the anticipated future growth patterns. Several initiatives in the six cities have suggested alternate uses for railway corridors.
8. The railway corridors in urban areas may offer unique opportunities to serve as transportation routes for a variety of transport modes. These corridors are difficult if not impossible to replace or replicate because of the cost, economic and social disruption and political reality.
9. In some locations significant parcels of land exist within rail corridors that are in excess of right-of-way requirements. These locations may offer the potential for station locations or train storage facilities and should be included in any consideration of potential regional rail use.

10. It would be in the public interest to ensure that all rail corridors proposed for abandonment in urban areas or potentially serving urban areas are retained in Federal ownership against the time when Provincial or local governments may request their use for transportation purposes.
11. Interim uses of such rail corridors should be permitted provided they would not pose an obstacle to the reconversion of the corridor to transportation use.

To review, we are very likely, over the next twenty years, to experience:

- levels of travel that will cause significantly more severe traffic congestion;
- the continued focus of growth at suburban and ex-urban nodes – edge cities and satellite cities;
- a consequent demand for expanded commuter rail networks as an alternative to auto travel among these areas and from these areas to city cores.

The creation of new transportation corridors that provide relatively direct routes within urban areas will be very difficult, for a number of reasons. Land purchases are often politically difficult and costs inordinately high. By definition, the lands that would be most suitable as corridors for commuter rail service – areas of high density – are extremely valuable and therefore expensive. As cities expand and new neighbourhoods become established, the ability of a local authority to “bull-doze” a new road or transit route disappears and costs increase.

An estimate of the cost of acquiring similar corridors has been made, only for purposes of an understanding of the order of magnitude. The model used assumed acquisition of land for transportation purposes in the hypothetical context of the creation of a new corridor, assuming that no rail corridor existed. Based on recent surveys of the costs of serviced industrial land, which would likely be the only form of land use that could be converted to a new corridor, the cost of acquiring the land to create all the corridors, Priority, High Potential and Low Potential as shown on Figures 2 through 7 would be approximately \$3.6 B. Broken down by municipality the costs are as follows:

Halifax -	\$21M
Montreal -	\$770M
Toronto -	\$1,500 M
Winnipeg -	\$280M
Calgary	\$325M
<u>Vancouver -</u>	<u>\$690M</u>
Total –	\$3.6B

Current public attitudes that preclude the establishment of new transportation corridors in urban areas also push for better and more efficient transportation systems. While few Canadians would agree with the statement “new transportation corridors should be built through urban neighbourhoods”, few would also likely agree with the statement “we don’t need any more ways to travel between cities – our current system is good

enough". In Canada's largest urban centers, the need for transportation alternatives to the highway network is becoming increasingly acute.

Use of corridors for non-rail transportation purposes has already been demonstrated in several Canadian cities. For example the Region of Sudbury has converted former rail corridors to major arterial roads serving the downtown. The Region of Ottawa-Carleton converted a former railway right-of-way to serve as part of the extensive transitway system.

As a consequence of increasing traffic congestion and the difficulty of creating new transportation corridors, the availability of existing rail corridors for transportation purposes may offer a much more significant benefit than in the past. Rail corridors may, in fact, offer the most feasible opportunity to provide additional access to downtown areas. It would be short sighted to allow them to be abandoned for public use without extensive review and discussion on a corridor-by-corridor basis.

On the basis of these findings we have concluded that the answer to the question as posed is unequivocally 'yes'. We have also found that there are many other transportation-related purposes to which an abandoned rail corridor may be put. The provision of adequate transportation facilities does not involve just one mode of transportation. Walking, bicycling, public transit, automobile facilities, and a variety of rail-related transit facilities are all needed in varying degrees in different locations to provide the transportation network required to meet demand both today and in the future. As one of the most significant costs in developing new transportation facilities is the creation of a corridor on which to provide the facility, railway corridors represent a very significant potential asset.

The Federal Interest

The question has been posed as to what Federal interest would be served by becoming involved in urban transportation issues. Perhaps it is more instructive to ask if the current abandonment provisions and processes are serving the Federal interest. There are three reasons why the Federal interest may not be served by the current legislation.

Rail corridors are unique resources in our cities - Nearly four out of five Canadians now live in cities with more than half of Canada's population living within potential commuter rail distance of our three largest centres. Losing potential future regional rail corridors or urban transit corridors will reduce the ability of our cities to function with an acceptable quality of life. In some cases rail corridors are not realistically able to be recreated as the social and political costs are too high. In these cases the corridors should be treated with the same degree of significance as a unique environmentally sensitive area, as they are irreplaceable and essential to the functioning of the urban system.

The success of the local transportation network is important to the national system - Federal interests in air, water and rail transportation are potentially affected if the air, water and rail terminals in our cities cannot be adequately accessed. The national transportation network is dependent on all aspects of the system functioning well as part of integrated system.

To some degree our cities compete on a global scale - The increasing globalization of the world economy has been well documented. In this world market, Canada's city-regions are the locations where knowledge, labour, and capital come together to compete with other cities around the world for increasingly footloose business and investment. An efficient transportation network is essential to the ability of Canadian cities to remain competitive on the world scene. In a knowledge-based economy, where the ability to attract skilled labour is similarly critical, the preservation of a high quality of life in our urban centers is equally important.

It is worth noting that the majority of western nations, including the United States and Britain, provide direct financial support to local governments through a variety of funding regimes, many of which are premised on enabling local governments to achieve federal objectives. The White Paper on the Future of Transport recently released by the British Government, proposes to devolve some of the responsibility for transportation planning to local government structures, and at the same time provide new authority at the local level to levy a variety of user fees to fund transportation infrastructure. In the United States similar programs establish objectives related to air quality and fund local transportation improvements conditional upon achieving specific benchmarks.

The Federal role can be limited to ensuring opportunities are not lost

The Federal interest could be limited to that of ensuring that the corridors remain available for transportation purposes, thus enabling the Provincial and local interest to function in the most effective manner.

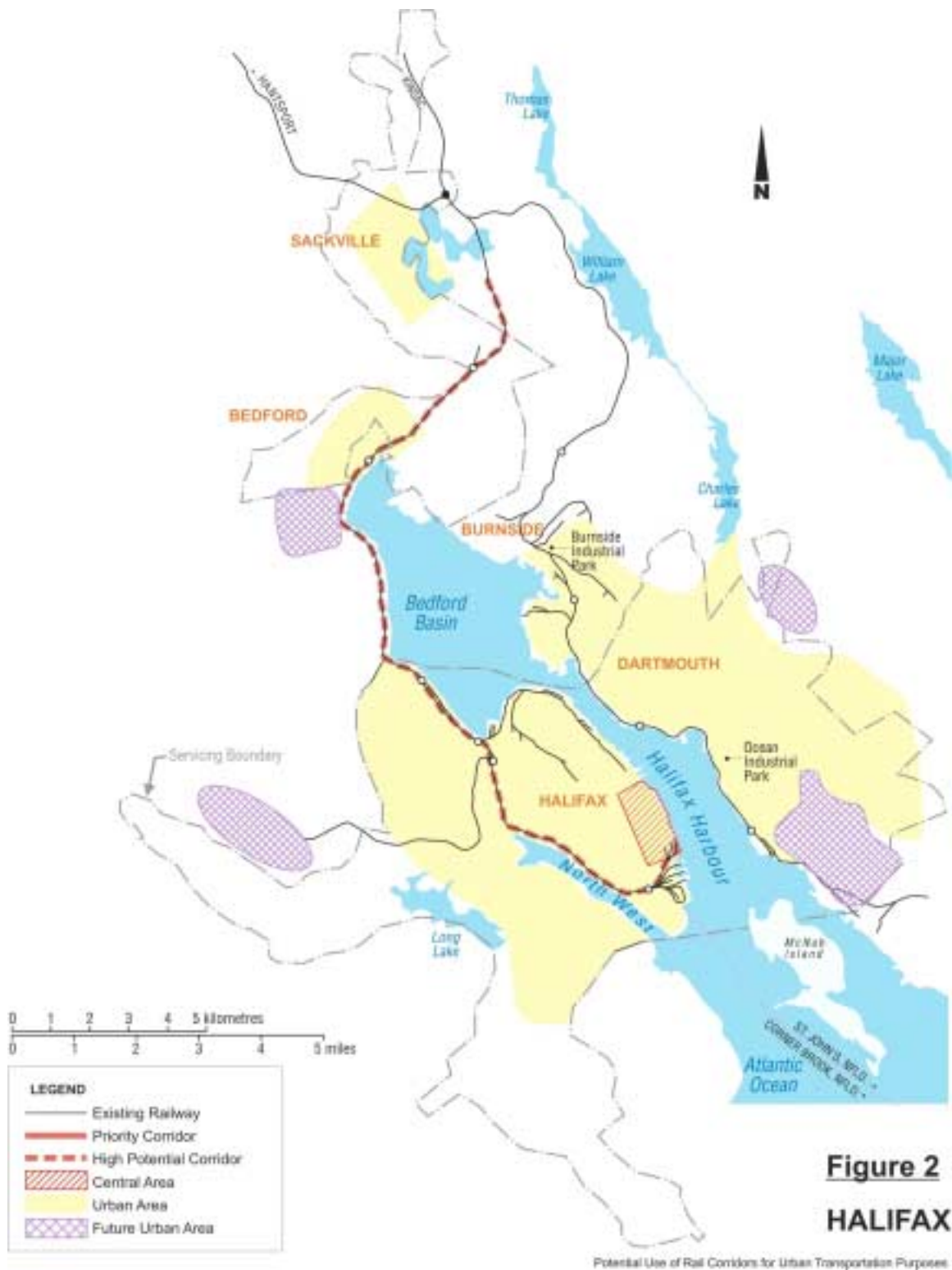


Figure 2
HALIFAX

Potential Use of Rail Corridors for Urban Transportation Purposes





Figure 4
GREATER TORONTO AREA

0 10 20 30 kilometres
 0 10 20 30 miles

LEGEND

- Existing Railway
- Priority Corridor
- - - High Potential Corridor
- ▨ Central Area
- Urban Area
- ▨ Future Urban Area

Potential Use of Rail Corridors for Urban Transportation Purposes

