



FINAL REPORT



# Land Use Planning, Rail Proximity and Public Safety

(Client Ref: 17380)

Prepared for:

The Railway Association of Canada

Prepared by:

CPCS

### **Acknowledgment**

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# Acronyms / Abbreviations

AB	Alberta
Agency	Canadian Transportation Agency
BC	British Columbia
CMA	Census Metropolitan Area
CN	Canadian National Railway
CP	Canadian Pacific Railway
CPCS	CPCS Transcom Limited
CT	Census Tract
CTA	<i>Canada Transportation Act</i>
CTAR	<i>Canada Transportation Act Review</i>
FCM	Federation of Canadian Municipalities
GDP	Gross Domestic Product
Guidelines	<i>RAC-FCM Guidelines for New Development in Proximity to Railway Operations</i>
km	kilometre
MB	Manitoba
MOU	Memorandum of Understanding
NB	New Brunswick
NS	Nova Scotia
NTCF	National Trade Corridors Fund
OMB	Ontario Municipal Board
ON	Ontario
PPS	Provincial Policy Statement
QC	Quebec
RAC	Railway Association of Canada
RSA	<i>Railway Safety Act</i>
SK	Saskatoon
SPI	Statements of Provincial Interest
TSB	Transportation Safety Board of Canada
TTCI	Trade and Transportation Corridors Initiative
US	United States

# Executive Summary

Conflicts between railway operations and the development and use of land that is in proximity to railways (“proximity issues”) have been recognized as a serious and growing problem in Canada, including creating issues for public safety.

To help prevent and resolve proximity issues, the Federation of Canadian Municipalities (FCM) and the Railway Association of Canada (RAC) have together, under their Proximity Initiative, developed and published *Guidelines for New Development in Proximity to Railway Operations* (Guidelines). Figure 1-1 exemplifies development with the potential for proximity issues. Figure 1-2 exemplifies development using the Guidelines.

Figure ES-1: Development in Disregard of Proximity  
(Bedford, NS)



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Figure ES-2: Development Using FCM-RAC Guidelines  
(Brampton, ON)

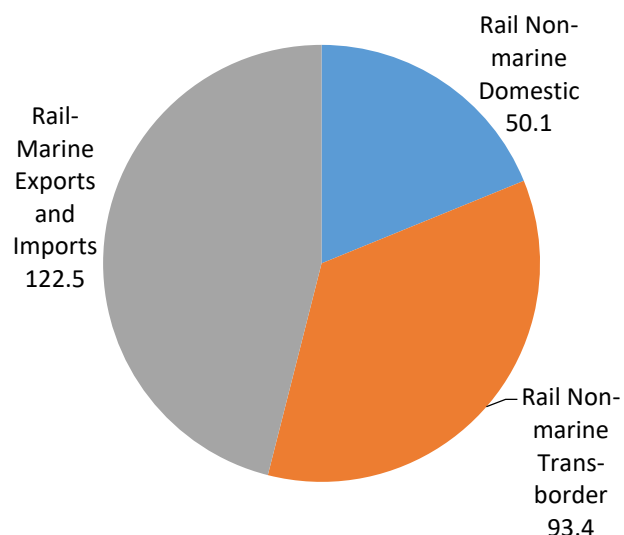


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The study highlights the critical role of railways in fostering Canada’s trade, a key driver of the nation’s economic growth and prosperity. Of the total tonnes carried by Canada’s two Class 1 freight railways (i.e. CN and CP), approximately 80 percent in 2016 was related to international trade (Figure ES-3), while nearly all growth in the tonnes carried since the 2008-2009 recession has also been driven by international trade (Figure ES-4). The importance of maintaining the integrity and efficiency of Canada’s trade corridors, including rail corridors and their safety, as a means to capitalizing on Canada’s trade opportunities and future growth opportunities cannot be overemphasized. In addition, it is essential that the capacity of

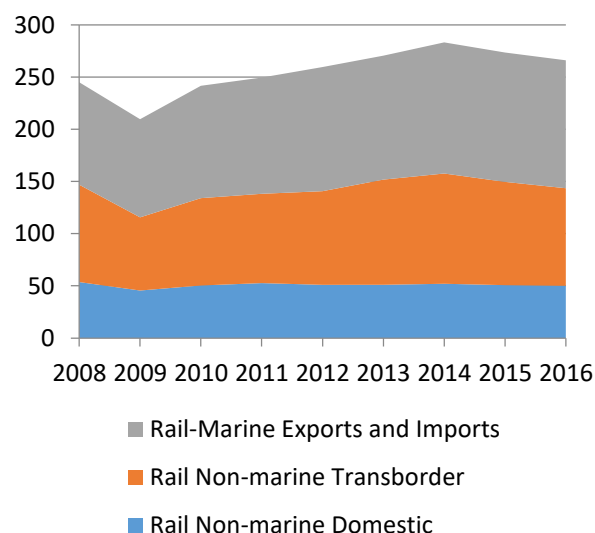
Canada's trade corridors keeps abreast of and adapts to ongoing developments in emerging economies, trading patterns and global supply chains.

Figure ES-3: Total CN and CP Freight Tonnes, 2016 (millions)



Source: CPCS analysis of Transport Canada data

Figure ES-4: Total CN and CP Freight Tonnes, 2008-2016 (millions)



Source: CPCS analysis of Transport Canada data

This study provides evidence relating to the interrelationship of land use planning and development, the growth of population residing in proximity to railways, and public safety. This includes reviewing pertinent legislative authorities governing land-use planning, and noting the key concerns associated with inconsistent land use planning practices across Canada and the inadequate integration of rail safety considerations.

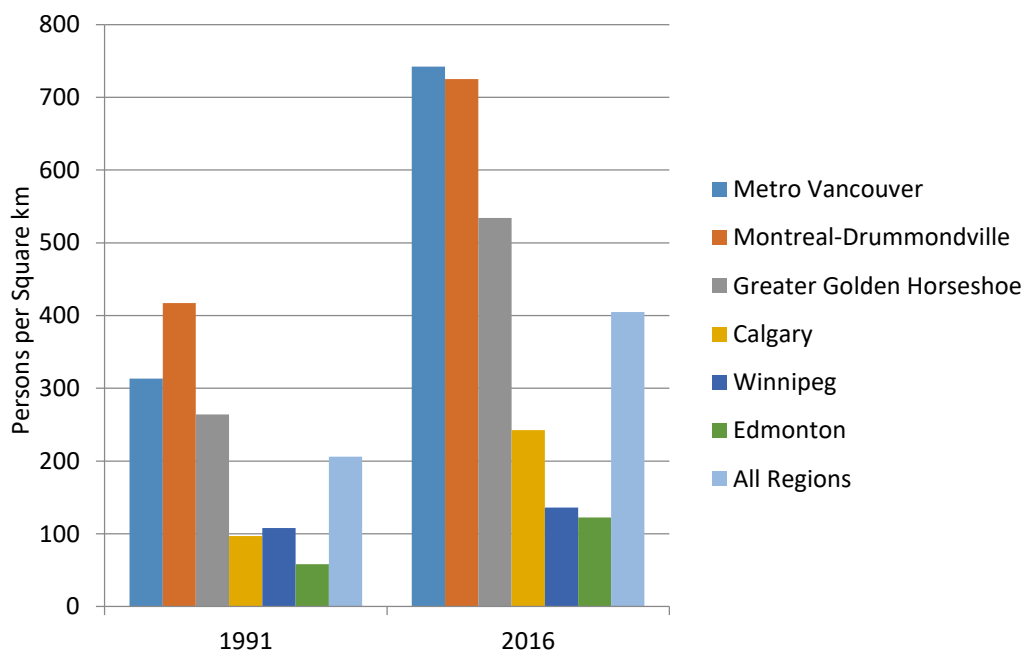
*Key concerns over land use planning have been lack of consistency across Canada and inadequate integration of safety and other considerations where development is in proximity to rail operations.*

The study illustrates population growth in proximity to railways over the past quarter century, and the occurrence in these areas of railway crossing and trespassing accidents. The maps cover six major metropolitan regions and specific designated rail corridors within these areas, selected and defined by RAC. These show how, in each of the study regions and designated rail corridors, there has been widespread densification over the past quarter century. Overall population density in the six regions has doubled, and has doubled or more than doubled in four of the six regions (Figure ES-5). Similarly, overall population density in the six designated rail corridors has almost



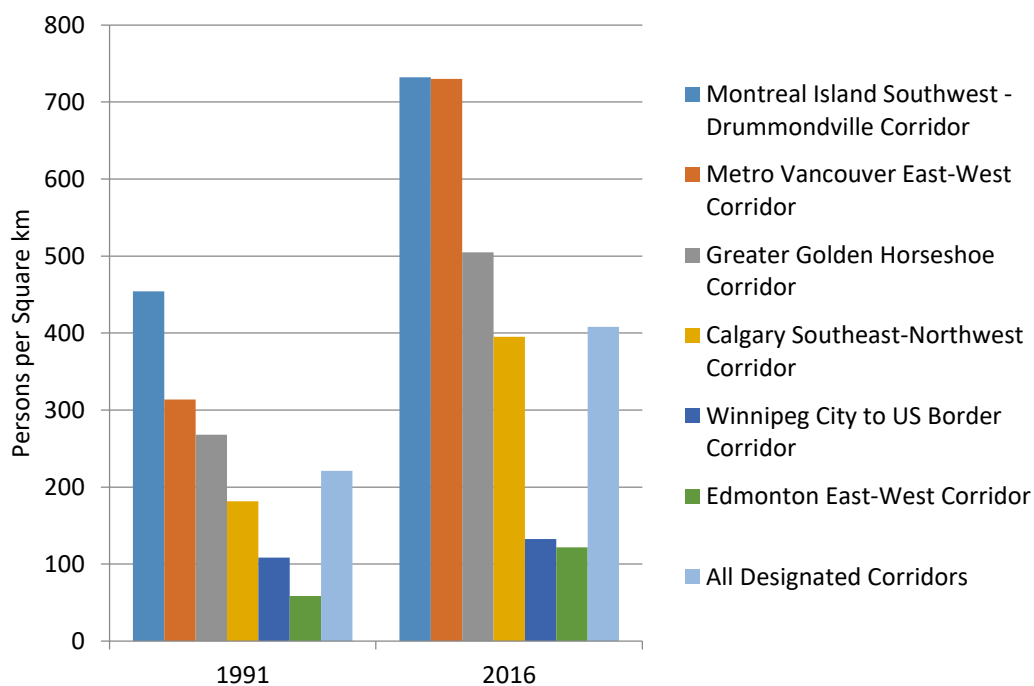
doubled. In three of the corridors it has more than doubled, and nearly doubled in the Ontario corridor (Figure ES-6).

Figure ES-5: Growth in Population Density in Study Regions, 1991-2016



Source: CPCS analysis of Statistics Canada Census data

Figure ES-6: Growth in Population Density in Designated Rail Corridors, 1991-2016



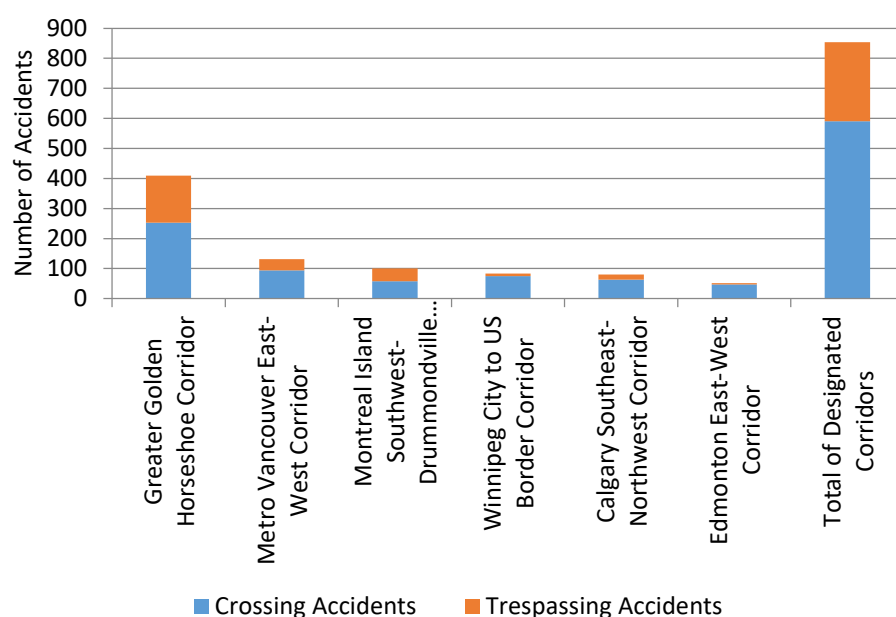
Source: CPCS analysis of Statistics Canada Census data



In parallel to increasing population growth in major urban centres, there have been 2,656 railway crossing accidents in Canada over 2004-June 2017, of which 590 (22 percent) occurred in the six designated major rail corridors referenced in this study and 365 (14 percent) occurred elsewhere within the study regions. Over the same time, there were a total of 1,000 railway trespassing accidents in Canada, of which 264 (26 percent) occurred in the six designated major rail corridors and 180 (18 percent) occurred elsewhere within the study regions.

Figure ES-7 shows the distribution of crossing and trespassing accidents across the six designated railway corridors. There exists a basic correlation between the distribution of accidents shown in Figure ES-7 and population density as shown in Figures ES-6 or ES-5 above. Generally speaking, the corridors exhibiting the largest numbers of accidents (Greater Golden Horseshoe, Metro Vancouver East-West and Montreal Island Southwest-Drummondville Corridors) are those with the highest densities. Population density, however, is not the sole determinant. Other important factors, not addressed by the scope of this assignment, include the size of the rail corridor, the rail traffic volume, the numbers of crossings present and their type of safety protection, and the extent of measures taken to inhibit trespassing.

Figure ES-7: Crossing and Trespassing Accidents in the Designated Rail Corridors, 2004-June 2017



Source: CPCS analysis of Transportation Safety Board data

Lastly, the study describes the FCM-RAC Guidelines and extent of their adoption by jurisdictions in Canada. The Guidelines aspire to introduce a common approach for the mitigation and prevention of issues that may arise when people live and work in close proximity to railway operations. They provide detailed land use planning and development standards for minimizing noise, vibration and safety issues for sensitive land uses in proximity to railway corridors. These include minimum setback (e.g., 30 meters for new residential development in proximity to a railway main line), berm and other

requirements for achieving appropriate separation from railway operations and mitigation of impacts. The Guidelines also provide a Development Viability Assessment process for identifying alternative solutions where the standard measures are not workable.

To date, close to 60 municipalities in Canada have adopted all or parts of the Guidelines. Another ten are reviewing the Guidelines, and close to 120 others have sought railway commenting for setbacks and safety barriers as potential conditions of approval. While progress in adoption of the Guidelines has been made, Canada's size — encompassing more than a 40,000 route kilometers of rail network — and large number of municipalities has made the municipality-by-municipality approach a challenge and has led to a shift in strategy aimed at gaining adoption of the Guidelines at the provincial level. Accordingly, the Proximity Initiative has been expanded in 2016 to include specifications for engaging with provincial governments, with the goal of having provincial governments adopt the Guidelines into their land use acts.

In conclusion, as the previous *Railway Safety Act* Review recognized in 2007, Canada has been experiencing growing proximity problems, including increased risks to public safety, since at least the late 20<sup>th</sup> century as a result of sensitive land use developments being built adjacent or near to railway corridors. And as reflected by the more recent *Canada Transportation Act* Review report and recommendations in 2015, this trend has continued. It is essential for the current *Railway Safety Act* Review to take a carefully considered approach as regards the proximity issues highlighted in this report.

# 1 Introduction

## Key Chapter Takeaway

- Conflicts between railway operations and the development of land in proximity to railways (“proximity issues”) have been a growing problem in Canada, including creating issues for public safety.
- The Federation of Canadian Municipalities (FCM) and the Railway Association of Canada (RAC) have together published *Guidelines for New Development in Proximity to Railway Operations* (Guidelines) as a means to help prevent and resolve proximity issues.
- This study presents information relating to the interrelationship of land use planning and development, the growth of population residing in proximity to railways, and their implications for public safety.
- The study also highlights the critical role of railways in fostering Canada’s trade and economic growth, reviews pertinent legislative authorities governing land-use planning in Canada, and describes the FCM-RAC Guidelines and extent of their adoption by jurisdictions in Canada.

## 1.1 Background

Historically, most communities in Canada began and grew up around railways. As population has grown, along with rail activity, conflicts have arisen between railway operations and the use of land in proximity to railways. Development of land near rail corridors, especially for residential and other sensitive uses, raises a number of “proximity issues.” These include disputes over noise, pollution and vibrations, as well as traffic congestion resulting from blocked crossings, and concerns over the movement of dangerous goods through populated areas. However, safety risks from trespassing on railway property and pedestrian and vehicular traffic at railway crossings are among the most serious concerns due to the related fatalities and serious injuries to people. Figure 1-1 exemplifies residential development with the potential for major proximity issues.

In recent years, as Canada has continued to urbanize, and increasing concern over the environment has led city authorities to place more emphasis on curbing urban sprawl, demand for denser forms of development has grown and is exacerbating the potential for proximity problems.

Figure 1-1: Development in Disregard of Proximity  
(Bedford, NS)



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Figure 1-2: Development Using FCM-RAC Guidelines  
(Brampton, ON)



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The Railway Association of Canada (RAC) and the Federation of Canadian Municipalities (FCM) have, through their joint Proximity Initiative, worked together since the early 2000s on developing means to help prevent and resolve issues that arise from people living and working in proximity to railway operations. This includes the RAC-FCM *Guidelines for New Development in Proximity to Railway Operations* (Guidelines), which address noise, vibration and safety issues, and focus on the challenges associated with new development.<sup>1</sup> Basically, the Guidelines set out minimum setback and other physical and technical standards to minimize noise, vibrations and safety issues for sensitive land uses, and provide guidance to regulators seeking to minimize land use incompatibilities resulting from development near railway properties. Figure 1-2 exemplifies development using the Guidelines.

## 1.2 Objectives

The principal purpose of this study is to provide information relating to the interrelationship of the governance of land use planning and development, the growth of population residing in proximity to railway corridors, and their implications for public safety. In addition, the study highlights the importance of Canada's rail transportation corridors in capitalizing on Canada's

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<sup>1</sup> Federation of Canadian Municipalities and Railway Association of Canada (May 2013), *Guidelines for New Development in Proximity to Railway Operations*, [http://www.proximityissues.ca/asset/image/reference/guidelines/2013\\_05\\_29\\_Guidelines\\_NewDevelopment\\_E.pdf](http://www.proximityissues.ca/asset/image/reference/guidelines/2013_05_29_Guidelines_NewDevelopment_E.pdf).

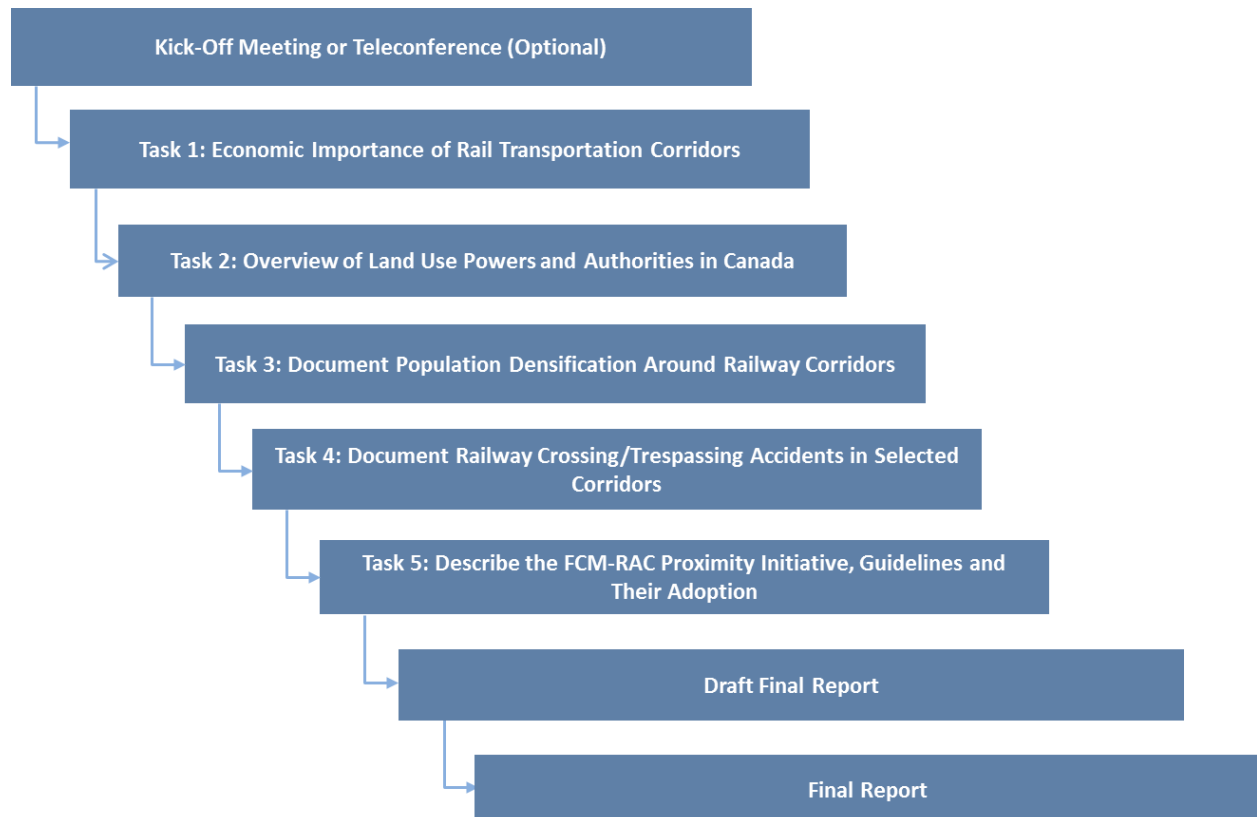
trade opportunities and fostering economic growth, reviews pertinent legislative powers and authorities governing land-use planning in Canada, and summarizes the creation and evolution of the FCM-RAC Proximity initiative, the substance of the proximity Guidelines, and the extent of their adoption by jurisdictions in Canada.

It is the intention of the RAC to submit this study as part of its submission to the current *Railway Safety Act* (RSA) Review, launched by the federal government on April 26, 2017.

### 1.3 Report Structure

This study has proceeded according to the steps shown in Figure 1-3 below, with the main research Tasks 1-5 corresponding to Chapters 2-6, respectively, and with the overall conclusions stated in Chapter 7.

Figure 1-3: Study Sequence



### 1.4 Methodology

This study has been entirely the product of desk research utilizing publicly available information and data. The study was also limited in its ability to comprehensively assess the growth of urban centres in Canada and along the Canadian railway network, and the associated public safety risks. Instead, there has been a focus in carrying out the study on a few selected major urban regions and designated rail corridors within the regions.

## 1.5 Limitations

Some of the findings herein are based on analysis of third party data. While CPCS makes efforts to validate data, CPCS cannot warrant the accuracy of third party data.

# 2 Importance of Rail Freight Transportation Corridors

## Key Chapter Takeaway

- Canada has always been a trade dependent country. As such, trade has been critical for the growth of the economy, job creation and prosperity.
- Rail freight corridors are vital to Canada's trade. Indicative is that the vast majority of freight carried by rail in Canada is related to international trade. Maintaining the integrity, capacity and efficiency of Canada's trade corridors, including rail corridors, is of crucial importance.
- Recognizing the key role of Canada's transportation trade corridors, the *Canada Transportation Act Review (CTAR)*, in 2015, made several recommendations regarding maintaining, preserving and enhancing these corridors, including better management of the proximity issues.
- Also recognizing the importance of Canada's trade corridors, the federal government has made Trade Corridors to Global Markets a pillar of its Transportation 2030 strategy. As part of this, the \$2 billion National Trade Corridors Fund (NTCF) merit-based program, with a first call for submissions from project proponents, was announced July 4, 2017.

## 2.1 Rail Corridors and the Economy

Rail freight and passenger transportation is vital to Canada's economy, supply chains and society. Canada's rail industry moved 413.4 billion tonne-kilometres<sup>2</sup> of freight, 77.2 million commuter rail passengers and 4.2 million intercity rail passengers in 2015.<sup>3</sup> Of the combined tonne-kilometres of freight moved annually by Canada's rail and for-hire road carriers, the railways account for approximately

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*Of the total tonnes transported in 2016 by CN and CP, fully 81 percent was related to international trade. Moreover, nearly all of the growth in the total tonnes carried by CN and CP since the 2008-2009 recession has been international trade related.*

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<sup>2</sup> A tonne-kilometre refers to the movement of one tonne of freight over a distance of one kilometre. It is a standard measure of rail activity.

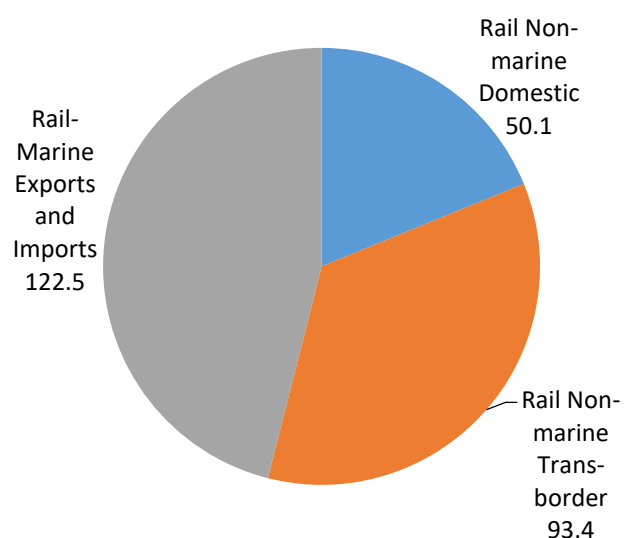
<sup>3</sup> Railway Association of Canada (2106), *Rail Trends* | 2016, <http://www.railcan.ca/publications/trends>.



60 percent.<sup>4</sup>

Especially important is the role that rail freight corridors play in Canada's international trade. As indicated in Figure 2-1, of the 266.0 million total tonnes of products transported in 2016 by Canada's two major Class 1 freight railways — Canadian National (CN) and Canadian Pacific (CP) — 215.9 million tonnes, or 81 percent, were connected with continental trade (93.4 million tonnes, or 35 per cent) or with overseas trade (122.5 million tonnes, or 46 percent) via the rail-marine system. Notable as well, and seen clearly in Figure 2-2, is that since the 2008-2009 global economic recession, close to all of the growth in the total freight tonnes carried by CN and CP has been related to international trade.

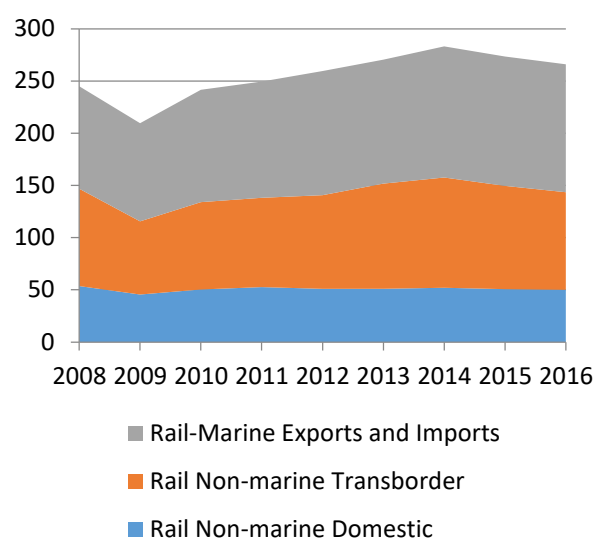
Figure 2-1: Total CN and CP Freight Tonnes, 2016 (millions)



Source: CPCS analysis of Transport Canada data

Canada's economic growth, job creation and prosperity have always depended on trade and the role that transportation plays in enabling efficient, secure and reliable movement of goods, resources and people. Today, the value of Canada's merchandise trade is over \$1 trillion, representing more than 50 per cent of GDP,<sup>5</sup> making Canada one of the

Figure 2-2: Total CN and CP Freight Tonnes, 2008-2016 (millions)



Source: CPCS analysis of Transport Canada data

*The importance of maintaining the integrity and efficiency of Canada's trade corridors, including rail corridors, as a means to capitalizing on Canada's trade opportunities and fostering economic growth cannot be overstated.*

<sup>4</sup> Transport Canada (2017), *Transportation in Canada 2016 Statistical Addendum*, <https://www.tc.gc.ca/eng/policy/anre-menu.htm>.

<sup>5</sup> Statistics Canada, Canadian international merchandise trade: Annual review, 2016,

most trade dependent countries and indicative of how trade has been critical for growth of the economy. The importance of maintaining the integrity and efficiency of Canada's trade corridors, including rail corridors, as a means to capitalizing on Canada's trade opportunities and fostering economic growth cannot be overemphasized. In addition, it is essential that the capacity of Canada's trade corridors keeps abreast of and adapts to ongoing developments in emerging economies, trading patterns and global supply chains.

## 2.2 Transportation Trade Corridor Policy

The federal government first articulated a trade corridor strategy in 2006 with the Asia-Pacific Gateway and Corridor Initiative. Prompting this was the transformation taking place in the global economy and supply chains, driven by "containerization" and Asia's — particularly China's — rapidly growing importance in world trade. In 2007, the geographic scope of the strategy was expanded with the National Policy Framework for Strategic Gateways and Trade Corridors. In addition to the dramatic growth of trade with Asia, this recognized the ongoing role of the US as Canada's largest trading partner as well as potential new trade opportunities on the east coast, and divided Canada's trade gateways and corridors into three regions: the Asia-Pacific Gateway and Corridor, the Ontario-Quebec Continental Gateway, and the Atlantic Gateway and Trade Corridor.

Most recently, the *Canada Transportation Act Review (CTAR)*, reporting in 2015, recommended that "the Government of Canada renew the Ministerial mandate for Gateway and Corridor strategies in order to provide leadership on efforts to link trade and transportation and consider budgetary allocations to support investment in transport corridors."<sup>6</sup>

"We need our trade routes to be as fluid as possible. By moving goods more efficiently along supply and distribution chains, both transit times and the cost of goods will decrease." Transport Minister Marc Garneau.

*The Globe and Mail*, July 4, 2017, p.A3

CTAR was mandated to consider as a key question "how strategic transportation gateways and corridors can be developed and leveraged to support Canadian prosperity through linkages to global markets?"<sup>7</sup> Based on its look ahead as regards future global economic, trade and transportation trends, and how trade will continue to be a key driver of Canada's growth, the CTAR made several recommendations with respect to maintaining, preserving and enhancing Canada's transportation trade corridors. These were not only that the federal government should renew the Ministerial mandate for Gateway and Corridor strategies but should also establish a National Corridor Protection Program, promote innovative supply

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<sup>6</sup> *Canada Transportation Act Review* (December 2015), *Pathways: Connecting Canada's Transportation System to the World*, Volume 1, Chapter 3: Linking Trade and Transportation, p. 43, [http://www.tc.gc.ca/eng/ctareview2014/CTAR\\_Vol1\\_EN.pdf](http://www.tc.gc.ca/eng/ctareview2014/CTAR_Vol1_EN.pdf).

<sup>7</sup> Government of Canada (June 25, 2014), *Canada Transportation Act Review Mandate*, <http://www.tc.gc.ca/eng/ctareview2014/mandate.html>.

chain technologies, and act to improve velocity and cost competitiveness along trade and transportation corridors.<sup>8</sup>

Of note, the CTAR recommends as part of the proposed National Corridor Protection Program (recommendation 2) that the federal government and provinces collaborate in order to:

“d. partner with municipal governments and the private sector to improve sound-barrier and anti-vibration standards in building bylaws for residential developments in neighbourhoods adjacent to an existing or future trade and transport corridor.”<sup>9</sup>

Additionally, in looking ahead and recognizing how railways will continue to play a crucial role in supporting economic growth, the CTAR recommends (recommendation 11):

“that in order to support the long-term health of Canadian urban municipalities and reduce the risks associated with public and freight rail interactions, the federal government use infrastructure funding leverage to:

a. support the relocation of rail infrastructure outside of dense urban centres, and the implementation of technologies or infrastructure aimed at improving the safety of the rail/urban interface, with safer alternatives including road/rail grade separations, tunnels, and robust noise/visual barriers;

b. encourage municipal governments to establish a buffer zone around new rail developments in order to provide separation from residential development and mitigate future concerns over rail and logistics operations.”<sup>10</sup>

Significantly, the federal government has responded to the critical role of transportation trade corridors, making Trade Corridors to Global Markets a pillar of its Transportation 2030 Strategic Plan,<sup>11</sup> a vision informed by both consultations with the public and the CTAR report. Notable about Trade Corridors to Global Markets is that it emphasizes improving the performance of the transportation system to get Canada’s products to global markets, in contrast to the earlier gateway and corridor initiatives that instead focused prominently on the growing inflow of containerized cargo.

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<sup>8</sup> Canada Transportation Act Review (December 2015), *Pathways: Connecting Canada’s Transportation System to the World*, Volume 1, Chapter 3: Linking Trade and Transportation, op. cit.

<sup>9</sup> Ibid., p. 45.

<sup>10</sup> Canada Transportation Act Review (December 2015), *Pathways: Connecting Canada’s Transportation System to the World*, Volume 1, Chapter 8.1: Freight Rail, p. 143.

<sup>11</sup> Transport Canada (2107), *Transportation 2030 - A Strategic Plan for the Future of Transportation in Canada: Trade Corridors to Global Markets*, <https://www.tc.gc.ca/eng/future-transportation-canada-trade-corridors-global-markets.html>.

As part of Transportation 2030, Trade Corridors to Global Markets envisions investment of \$10.1 billion over the next 11 years in transportation corridors to international markets. This proposed investment in trade and transportation projects is also a component of the Infrastructure Canada Investing in Canada Plan,<sup>12</sup> and the government has also announced that at least \$5 billion is to be provided

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*The federal government has responded to the critical role of transportation trade corridors, making Trade Corridors to Global Markets a pillar of its Transportation 2030 strategy. This includes the \$2 billion National Trade Corridors Fund (NTCF) merit-based program with a first call for submissions from project proponents announced July 4, 2017*

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through the new Canada Infrastructure Bank.<sup>13</sup> Most concretely, the government announced on July 4, 2017, the establishment, from the above \$10.1 billion proposed investment in transportation corridors, of a \$2.1 billion Trade and Transportation Corridors Initiative (TTCI). Comprising this is a \$2 billion National Trade Corridors Fund (NTCF) merit-based program with a first call for submissions from project proponents, along with the allocation of \$50 million for stimulating innovation and \$50 million for a new information system and data centre program.<sup>14</sup>

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<sup>12</sup> Infrastructure Canada, *Investing in Canada Plan*, <http://www.infrastructure.gc.ca/plan/about-invest-a-propos-eng.html>.

<sup>13</sup> Infrastructure Canada, *Canada Infrastructure Bank*, <http://www.infrastructure.gc.ca/CIB-BIC/index-eng.html>.

<sup>14</sup> Transport Canada (July 4, 2017), *Minister Garneau announces the \$2.1B Trade and Transportation Corridors Initiative to support Canadian business and spur job creation*, [https://www.canada.ca/en/transport-canada/news/2017/06/minister\\_garneauannouncethe21btradeandtransportationcorridorsin0.html](https://www.canada.ca/en/transport-canada/news/2017/06/minister_garneauannouncethe21btradeandtransportationcorridorsin0.html).

# 3 Government Land Use Powers and Planning

## Key Chapter Takeaway

- In Canada, it is the provinces, and indirectly the municipalities, that under the Constitution have the authority to regulate land use.
- The 2007 RSA Review found safety and other considerations created by the presence of rail operations to be inadequately integrated into land use planning in Canada. Moreover, the issue of trying to address rail proximity effectively through regulation persists, as reflected in the 2015 CTAR recommendations
- Only three provinces — Ontario, Saskatchewan and New Brunswick — have legislation explicitly addressing proximity issues. Of these, Ontario's requirements are the most encompassing while New Brunswick's is the most limited in scope.
- At the municipal level, the City of Montreal is the first, and so far only, one of Canada's major urban areas to adopt the FCM-RAC Guidelines in full.
- Under the *Constitution Act, 1867* it is the provinces that have the authority over land use. However, federal transportation legislation contains a number of requirements pertinent to rail proximity. Also, federal regulation of land use has been exercised under the RSA with respect to mining activity on lands adjoining railway lands, and through zoning regulation under the Aeronautics Act with respect to land use in proximity to airports.

This chapter provides an overview of the situation in Canada regarding regulation of land use planning and development as related to proximity between railway operations and land development. The chapter first outlines the division of authority over land use among the federal, provincial and municipal levels of government. This is followed by discussion of land use planning regulation in certain provinces and municipalities. Appendix A reproduces the relevant sections of the provincial and municipal legislation or regulations.

Only three provinces are discussed — Ontario, Saskatchewan and New Brunswick — as these are the only provinces whose land use legislation actually addresses proximity in some manner. Of the three, Ontario's treatment is the most encompassing while New Brunswick's is the most limited in scope. The City of Montreal is also discussed as it is the only one of the major metropolitan areas to so far adopt the FMC-RAC Guidelines in full.

In the last section the chapter outlines the existing federal regulatory requirements pertinent to development and land use near railway corridors.

### 3.1 Jurisdictional Authority Over Land Use

On the whole, provincial governments are the largest landowners in Canada. In addition, provincial governments have, under the Constitution, the authority over land use. Municipal governments, although playing a large role in land use planning, are not recognized in the Constitution as an official level of government. They are creatures of the provinces from which they derive their powers including those relating to land use.

Section 92(13) of the *Constitution Act, 1867*, provides that:

“In each Province the Legislature may exclusively make Laws in relation to Matters coming within the Classes of Subjects next hereinafter enumerated; that is to say, (...) 13. Property and Civil Rights in the Province.”

*Under the Constitution it is the provinces in Canada, and indirectly the municipalities, that have the authority to regulate land use. Except for land actually owned by it, the federal government has no authority in this area.*

The assignment to the Provincial Legislatures, and indirectly to municipalities – and not to the Federal Parliament – of the regulatory power over land use planning and development arises from this authority of the provinces over property and civil rights.<sup>15</sup>

### 3.2 Integration of Proximity Considerations

A key concern around the issue of proximity between railway lines and land development is the lack of consistency with respect to land use planning across Canada, and specifically the lack of adequate integration into land use planning and development of safety considerations and other matters created by the presence of rail operations.

As noted by the *Railway Safety Act* Review Advisory Panel in 2007,

“The issue of new development near railways is a

*A key concern with respect to proximity is the lack of consistency in land use planning across Canada, and specifically the inadequate integration into land use planning and development of safety and other considerations created by the presence of rail operations.*

<sup>15</sup> Howard Epstein, *Land Use-Planning*, Toronto (2017), p. 175; see also Peter W. Hogg, *Constitutional Law of Canada*, Toronto (2013), paragraph 21.11(a): “The creation of property rights, their transfer and their general characteristics are within property and civil right in the province. Thus, the law of real and personal property and all its various derivatives, such as landlord and tenant, trusts and will, succession on intestacy, conveyancing and land use planning, are within provincial power.”

multi-jurisdictional challenge, since land-use planning and development is both a provincial and a municipal responsibility, while the major railways and their rights-of-way are federally regulated. There are no consistent consultation protocols or land-use appeal mechanisms across the country, and provincial and municipal land zoning and permit procedures vary widely.”<sup>16</sup>

Of particular concern to the Panel in 2007 was the lack in most jurisdictions of any requirement for municipalities or developers to consult with railways over planned work or development in proximity to railway lines, leading the Panel to make the following recommendation,

“Recommendation 34

The *Railway Safety Act* should be amended to require the developer and municipalities to engage in a process of consultation with railway companies prior to any decision respecting land use that may affect railway safety.”<sup>17</sup>

There has been no action taken on this recommendation, with Constitutional jurisdiction over land use generally stated as the reason for not proceeding with such an amendment to the RSA. In addition, the issue of trying to address rail proximity effectively through regulation remains a persistent one as reflected in the more recent CTAR recommendations (see section 2.2 above) aimed at providing better separation between rail traffic and communities to both protect trade and transport corridors and achieve a balanced approach to growth that serves local needs.

### 3.3 Ontario Legislation

Ontario is recognized in Canada as being a leader in implementing practices to avoid and resolve proximity issues. Again, as noted by the *Railway Safety Act* Review Advisory Panel in 2007,

“Several stakeholders mentioned Ontario's new buffer zone requirements. Regulations under Ontario's *Planning Act* now require that railways be notified of official plans (and amendments), subdivision plans, zoning bylaws and consents to sever lands if the proposal involves any land within 300 metres of a railway line. The railways may review the documents and recommend provisions to address any potential land use compatibility issues. If the railways' proposed adjustments to deal with such issues are not incorporated into the land development project, the railways may raise the matter with the Ontario Municipal Board.

Ontario's approach allows for potential incompatible land use issues to be raised and addressed prior to the matter becoming a problem. It also ensures that potential

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<sup>16</sup> Railway Safety Act Review Advisory Panel (November 2007). *Stronger Ties: A Shared Commitment to Railway Safety*, p. 104. <https://tc.gc.ca/media/documents/railsafety/TRANSPORT Stronger Ties Report FINAL e.pdf>.

<sup>17</sup> Ibid., p. 107.



purchasers of such residential properties are properly advised of any such existing situation.” [footnotes omitted]

Ontario has also developed a Provincial Policy Statement (PPS) under the authority of its *Planning Act*, with the most recent version issued in 2014.<sup>18</sup> As noted in the Preamble, the PPS provides policy direction on matters related to land use planning and development and sets the policy foundation for regulating the development and use of land.

The PPS details requirements for planning authorities with regard to defined transportation and infrastructure corridors. It requires municipalities to plan for and protect corridors for infrastructure, including transportation, to meet current and projected needs. It also requires protection from development in planned corridors that could preclude or negatively affect the corridor’s use for its intended purpose(s), and in the 2014 update, encourages development proposed on adjacent lands to existing or planned corridors and transportation facilities to be compatible with, and supportive of, the long-term purposes of the corridor, and to be designed to avoid, mitigate or minimize negative impacts on and from the corridor and transportation facilities. Lastly, it encourages, wherever feasible, the preservation and reuse of abandoned corridors for purposes that maintain the corridor’s integrity and continuous linear characteristics.

Land use considerations have also been integrated into Ontario’s freight strategy.<sup>19</sup> The PPS states that land use patterns shall be based on densities and mix of land uses which, among other considerations, are supportive of freight movement.<sup>20</sup> In addition, the Province’s *Freight Supportive Guidelines*, which although not mandatory, are meant “to assist in the creation of communities, individual developments and transportation networks that are capable of supporting freight industries while integrating and balancing the compatibility of surrounding land uses and the needs of other transportation

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*Ontario has been a leader in implementing practices to avoid and resolve proximity issues. Railways must be notified of proposed land use changes within 300 metres of their lines or facilities, may suggest modifications, and if not accepted, may appeal to the Ontario Municipal Board (OMB). A Provincial Policy Statement (PPS) gives policy direction to municipalities in developing land use plans and requires planning decisions to be consistent with the PPS. Ontario also requires land use patterns to be supportive of freight movement.*

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<sup>18</sup> Ontario Ministry of Municipal Affairs and Ministry of Housing (2014), *2014 Provincial Policy Statement*, <http://www.mah.gov.on.ca/Page10679.aspx>

<sup>19</sup> Ontario Ministry of Transportation. *Freight Supportive Guidelines*. <http://www.mto.gov.on.ca/english/publications/freight-supportive-guidelines.shtml>.

<sup>20</sup> Ontario Ministry of Municipal Affairs and Ministry of Housing (2014). *2014 Provincial Policy Statement*, p. 7.

system users.”<sup>21</sup> The *Freight Supportive Guidelines* explicitly reference the FCM-RAC Proximity Guidelines among the supporting tools, guidelines, plans, legislation and regulations.<sup>22</sup>

In short, railways must be notified of any proposed land use changes within a buffer zone of 300 metres. They may suggest modifications, and if these are not accepted, may appeal to the Ontario Municipal Board (OMB). In addition the PPS, a statement of the government’s policies on land use planning, provides policy direction to municipalities in developing their official plans. Decisions affecting land use planning matters must be consistent with the PPS. Land use considerations have also been integrated into Ontario’s freight movement strategy, requiring land use patterns to be supportive of freight movement, and developing *Freight Supportive Guidelines* (voluntary) explicitly referencing the FCM-RAC Proximity Guidelines.

### 3.4 Saskatchewan Legislation<sup>23</sup>

In Saskatchewan, under *The Planning and Development Act, 2007*, the Lieutenant Governor in Council is authorized to adopt Statements of Provincial Interest (SPI) that link provincial and municipal objectives for land use planning. The SPI provide guidance to municipalities on a series of land use and development issues covering 14 subject areas, including transportation. Municipal planning decisions (made on or after the effective date) must be consistent with the Statements of Provincial Interest.

Municipalities are authorized under *The Planning and Development Act, 2007*, to set policies governing the development of their communities by preparing and adopting:

- official community plans and district plans containing policies to guide land use and development;
- zoning bylaws establishing permitted, prohibited or discretionary land uses, development standards and permit requirements; and
- subdivision bylaws.

Provincial oversight to ensure consistency with the SPI occurs through approval of new official community plans, district plans, zoning bylaws and subdivision

*In Saskatchewan, municipal land use planning and decisions must, insofar as practical, ensure that development is compatible with existing and planned transportation infrastructure, including railway infrastructure*

<sup>21</sup> Ontario Ministry of Transportation (2016). *Freight Supportive Guidelines*. p. 3.

<sup>22</sup> Ibid., p. 9.

<sup>23</sup> Government of Saskatchewan, *The Statements of Provincial Interest Regulations, being Chapter P-13.2 Reg 3* (effective March 29, 2012),

<http://www.publications.gov.sk.ca/freelaw/documents/English/Regulations/Regulations/P13-2R3.pdf>. Greater detail is provided in Saskatchewan Ministry of Municipal Affairs (April 2012), *Planning Handbook, Companion Document to The Statements of Provincial Interest Regulations*, <http://publications.gov.sk.ca/documents/313/98344-spi-planning-handbook.pdf>.

bylaws. Subdivision approving authorities, including the province, are responsible for ensuring consistency with the SPI during the subdivision approval process.

Of particular relevance to this study is that municipal planning documents and decisions must, insofar as practical: consider both human and environmental interests when planning, constructing, maintaining, decommissioning and reclaiming road systems and other transportation corridors; and ensure that development is compatible with existing and planned transportation infrastructure including railway infrastructure. (See Appendix A).

### 3.5 New Brunswick Legislation<sup>24</sup>

In New Brunswick, the *Community Planning Act* (Bill 45) which received Royal Assent on May 5, 2017, will take effect January 1, 2018. Its purposes are to support the development of sustainable communities, enable the articulation of provincial priorities and guide planning decisions in the development of communities, and enable co-operation among local and regional jurisdictions and agencies in the delivery of planning services and infrastructure development.

In New Brunswick, where a subdivision by-law is in effect, and an easement is planned on land within 300 meters of a railway line, the railway company must be notified by the development officer. In addition, a subdivision plan shall not be approved unless the easement appears on the plan and

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*Effective January 1, 2018, New Brunswick will have adopted, in its subdivision bylaws, a notification process similar to that of Ontario's.*

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the railway company concurs, or has not given its objection within the time limit provided (at least two weeks), or the plan is approved despite the objection. As well, a tentative subdivision plan must be marked as such and show if a railway is within or adjacent to the land proposed to be subdivided. (See Appendix A).

### 3.6 City of Montreal

The City of Montreal is the first major urban area in Canada to adopt the FCM-RAC Proximity Guidelines. Where residential or other prescribed sensitive land uses are planned, the Montreal Urban Agglomeration Land Use and Development Plan contains

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*The City of Montreal has adopted the FMC-RAC Proximity Guidelines, mandating specific requirements respecting safety, noise and vibration to be included in municipal or borough urban planning regulations.*

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<sup>24</sup> Government of New Brunswick, Bill 45 *Community Planning Act*, <http://www.gnb.ca/legis/bill/pdf/58/3/Bill-45.pdf>.

specific requirements respecting safety, noise and vibration.<sup>25</sup>

- If the occupying land is adjacent to a marshalling yard or main track, the municipal or borough urban planning regulations must include criteria fostering the safety of developments. To that end, the regulations must require the submission of an assessment that complies with the Development Viability Assessment tool provided in the FMC-RAC Proximity Guidelines.<sup>26</sup> The regulations also must stipulate that a land or a portion of land located within 75 metres of a marshalling yard or main track cannot house one of the sensitive land uses if the vibration in the building where the use is carried out measures greater than 0.14 mm/s.
- If the occupying land is adjacent to a marshalling yard, the regulations must stipulate that a land or a portion of land located within 300 metres of the marshalling yard cannot house one of the sensitive land uses if the noise level inside the building where the use is carried out is greater than 40 dBA Leq (24 hr), or by ground-level recreation area outside the building if the noise level is greater than 55 dBA Leq (24 hr).
- If the occupying land is adjacent to a high traffic or main track, the regulations must stipulate that a land or a portion of land located within 30 metres of the right of way cannot house one of the sensitive land uses if the noise level inside the building where the use is carried out is greater than 40 dBA Leq (24 hr).

### 3.7 Federal Powers

The federal government exerts direct jurisdiction only over federally owned lands. However, the federal government at the same time does have regulatory powers over railway rights-of-way, railway lines, and crossings.

The *Canada Transportation Act* (CTA) and the *Railway Safety Act* (RSA) are the main statutes governing and regulating Canada's federally regulated railways.<sup>27</sup> These contain a number of requirements pertinent to railway proximity, as summarized in the following subsections.

#### 3.7.1 Notice of Railway Works

Under section 8(1) of the RSA, railway companies are required to give a 60-day public notice of certain kinds of works, including the construction of new lines, construction or alteration of certain bridges and tunnels, road crossings or railway line works that could affect drainage on adjoining lands. The work, however, may be undertaken if all persons receiving the notice file a response with the company indicating that they have no objection. Persons given the notice

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<sup>25</sup> Schéma d'aménagement et de développement de l'agglomération de Montréal

<sup>26</sup> Federation of Canadian Municipalities and Railway Association of Canada (May 2013), *Guidelines for New Development in Proximity to Railway Operations*, Appendix A – Development Viability Assessment, pp 73-75.

<sup>27</sup> In addition to the CTA and RSA, the railways (and all modes) are subject to requirements for the transportation of dangerous goods as set out under the *Transportation of Dangerous Goods Act* and regulations made under that legislation.

may also file an objection with the Minister if they consider that the work could prejudice their safety or that of the public. In such a case, the railway company may not proceed without the Minister's approval, who may decide to approve or not approve the work or to approve it subject to certain conditions.

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*Federal legislation has several requirements pertinent to proximity, including requiring railway companies to give notice of certain works, obtain approval from the Canadian Transportation Agency for the construction of new lines, and make only such noise and vibration as is reasonable. In addition, the Agency can investigate and resolve complaints over railway noise and vibration, and can open crossings, while Transport Canada can eliminate crossings.*

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### 3.7.2 Construction of New Railway Lines

Section 98 of the CTA requires railway companies to obtain approval from the Canadian Transportation Agency (the Agency) for the construction of new railway lines.<sup>28</sup> Among the requirements, railways must give notice to and consult with interested parties.<sup>29</sup> The Agency may grant approval if it considers the location of the railway line to be reasonable, taking into consideration the requirements for railway operations and services and the interests of localities that will be affected. Additionally, regulations made under the *Canadian Environmental Assessment Act, 2012*, designate certain railway projects as being subject to environmental assessment.<sup>30</sup>

### 3.7.3 Railway Noise and Vibration

Section 95.1 of the CTA requires railway companies, whether constructing or operating a railway, to make only such noise and vibration as is reasonable, taking into account their level of service obligations (sections 113- 114 of the CTA), their operational requirements, and the area where the construction or operation is occurring. The CTA also empowers the Agency to investigate and resolve complaints regarding railway noise and vibration, and mandates the Agency to develop guidelines respecting (a) the elements that it will use in determining whether a railway company is complying with section 95.1, and (b) the collaborative resolution of noise and vibration complaints. Moreover, before conducting an investigation or hearing regarding a noise or vibration complaint, the Agency must be satisfied that the collaborative measures set out in the guidelines have been exhausted.

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<sup>28</sup> Railway lines includes main lines, branch lines, yard tracks, sidings, spurs or other track auxiliary to a railway line. See Canadian Transportation Agency. *Approval to construct a railway line*, <https://otc-cta.gc.ca/eng/approval-construct-a-railway-line>.

<sup>29</sup> Ibid.

<sup>30</sup> Ibid.

### 3.7.4 Railway Grade Crossings

Under the CTA, the Agency has the authority to open crossings, including road, utility and private crossings. Under sections 101(1) and 101(2) of the CTA, an agreement made relating to the construction, maintenance or apportionment of the costs of a road or utility crossing may be filed with the Agency, and if filed becomes an order of the Agency. Where an attempt to negotiate an agreement has proven unsuccessful the Agency may, on application, authorize the construction of a road or utility crossing or related work, or specify who shall maintain the crossing. Where an attempt to agree on the apportionment of the costs of constructing or maintaining a road crossing or utility crossing have proven unsuccessful, the matter may under section 16 of the RSA be referred to the Agency.

In the case of private crossings, if an owner's land is divided due to the construction of a railway line, then under section 102 the railway company shall, at the owner's request, construct a suitable crossing "for the owner's enjoyment of the land." If an agreement to construct a crossing cannot be reached, the Agency, on application of the owner, may under section 103 order the railway to construct a suitable crossing if it "considers it necessary for the owner's enjoyment of the land" and may set terms and conditions governing the construction and maintenance of the crossing. The land owner, however, shall pay the costs of constructing and maintaining the crossing.

With respect to the elimination of crossings, it is Transport Canada that has the authority. Under section 12.1 (1) of the RSA, the Minister may enter into an agreement with a person who has rights relating to a road crossing to close the crossing in the interest of safe railway operations.

### 3.7.5 Land Adjacent to Railway Lines

Section 3.2 above has noted the Constitutional challenge surrounding federal regulation of use of land in proximity to railways. However, with respect to lands adjoining railway lands, federal jurisdiction has been exercised in the *Mining Near Lines of Railways Regulations* made under Part III of the RSA. These prohibit construction, alteration or operation of "non-railway works" below or on land adjoining a

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*Despite the Constitutional issue surrounding federal regulation of land use, federal regulation has been exercised under the RSA with respect to mine and oil and gas well activity on lands adjoining railway lands, and also through zoning regulation under the Aeronautics Act with respect to land use in proximity to federal airports or airport sites.*

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railway line without first providing at least 60 days' notice, along with details of the works, to the railway company owning the line and the Director of the local Transport Canada Railway Safety Directorate office.<sup>31</sup>

It may also be noted that another area where federal jurisdiction over land use has been exercised is zoning regulation in the *Aeronautics Act*. Under sub-section 5.4 (2) (a), the Governor in Council may make regulations to prevent lands adjacent to or in the vicinity of a federal airport or an airport site from being used or developed in a manner that is, in the Minister's opinion, incompatible with airport operation. However, this is also qualified by sub-section 5.4 (3) requiring that the Minister first attempt to reach agreement with the province on the matter, or deem the zoning regulation to be an immediate necessity.<sup>32</sup>

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<sup>31</sup> Minister of Justice. *Mining Near Lines of Railways Regulations* (SOR/91-104). <http://laws-lois.justice.gc.ca/eng/regulations/SOR-91-104/>.

<sup>32</sup> Minister of Justice. *Aeronautics Act* (R.S.C., 1985, c. A-2). <http://laws-lois.justice.gc.ca/eng/acts/A-2/>.



# 4 Population Densification in Railway Corridors

## Key Chapter Takeaway

- The examination of population densification in this chapter, and railway accidents in Chapter 5, is centered on six major metropolitan regions, and within each a designated rail corridor, selected and defined by the RAC.
- As illustrated in the accompanying maps, there has in each of the study regions and designated rail corridors, been widespread densification over the past quarter century.
- In the six study regions combined overall population density has doubled in the past quarter century. In four of the six regions the population density has doubled or more than doubled.
- Overall population density in the six designated rail corridors has increased by 1.8 times in the past quarter century. In the three Western-most corridors it has more than doubled, while in the Greater Golden Horseshoe corridor it has increased by 1.9 times.

This chapter illustrates the population growth and densification that has occurred across Canada in proximity to railway corridors over the past quarter century. As noted earlier, there has been a focus in carrying out this study on a few selected major urban regions and designated rail corridors within these regions.

## 4.1 Selected Study Regions and Designated Rail Corridors

The analysis is focused on six major metropolitan regions — Montreal-Drummondville (Quebec), the Greater Golden Horseshoe (Ontario), Winnipeg (Manitoba), Calgary (Alberta), Edmonton (Alberta), and Metro Vancouver (British Columbia) — and within each a set of rail corridors referred to, respectively, as follows:

- Montreal Island Southwest – Drummondville Rail Corridor
- Greater Golden Horseshoe Rail Corridor
- Winnipeg City to US Border Rail Corridor
- Calgary Southeast-Northwest Rail Corridor

- Edmonton East-West Rail Corridor
- Metro Vancouver East-West Rail Corridor

The major metropolitan regions and their designated rail corridors have been selected and defined for this study by the RAC. The corridors are meant to be indicative of some of the busiest segments of the Canadian railway network that traverse through major metropolitan areas that have experienced exceptional population growth and development in proximity to railway lines.

In order to analyze the population growth and densification that has occurred in the regions and around the designated rail corridors, it has been necessary to carry out the analysis based on the regions' Census Metropolitan Areas (CMA) and individual Census Tracts (CT). As shown below, each of the major metropolitan regions is comprised of one or more corresponding CMAs.

Figure 4-1: Study Regions and Corresponding CMAs

Study Region	Corresponding Census Metropolitan Areas
Montreal-Drummondville	Montreal, Drummondville
Greater Golden Horseshoe	Barrie, Brantford, Guelph, Hamilton, Kitchener-Cambridge-Waterloo, Oshawa, Peterborough, St. Catharines-Niagara, Toronto
Winnipeg	Winnipeg
Calgary	Calgary
Edmonton	Edmonton
Metro Vancouver	Vancouver

Within each region RAC has identified a specific set of rail lines of interest that make up each of the designated main rail corridors. These designated main rail corridors and their individual rail lines are listed in Appendix B. In the maps presented in the subsequent sections of this chapter, these designated rail lines are highlighted in yellow.

## 4.2 Population Densification in the Study Regions

Figure 4-2 summarizes the population densification that has occurred in the six selected metropolitan regions over the past quarter century. In Figure 4-2, the data are the population in numbers of people, the geographic area in square kms, and population density in persons per square km.

In total, the six regions comprise an area of 45,095 square km, with a total population of 18.2 million and an average population density of 405 per square km in 2016. With 8.6 million people in 2016, the Greater Golden Horseshoe region is the most populous, followed by the Montreal-Drummondville region with 4.2 million and the Metro Vancouver region with 2.2 million. These regions also have by far the highest density, with the Metro Vancouver region

showing the highest density at 742 per square km, followed by the Montreal-Drummondville region with 725 and the Greater Golden Horseshoe region with 534.

Figure 4-2: Population and Density in Study Regions, 1991 and 2016

Region	Population		Area (sq km)	Population Density	
	1991	2016		1991	2016
Montreal-Drummondville	2,433,375	4,233,300	5,840	417	725
Greater Golden Horseshoe	4,267,800	8,618,095	16,150	264	534
Winnipeg	580,730	730,705	5,374	108	136
Calgary	500,940	1,250,170	5,159	97	242
Edmonton	556,520	1,169,610	9,547	58	123
Metro Vancouver	948,075	2,244,140	3,024	313	742
All Regions	9,287,440	18,246,020	45,095	206	405

Source: CPCS analysis of Statistics Canada Census data

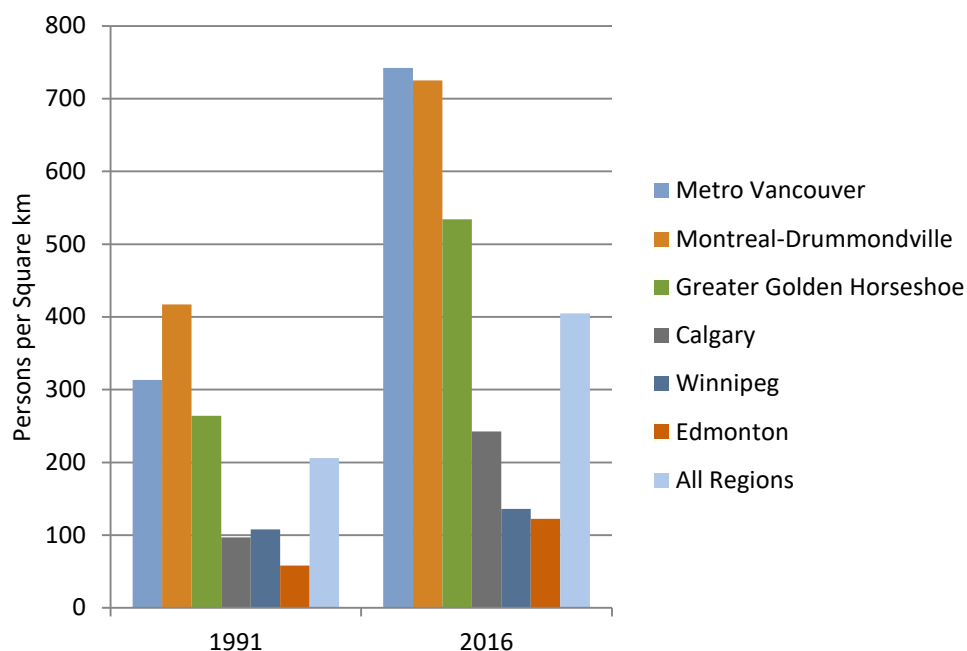
Figure 4-3 shows the growth in the population density of the study regions. All told, population density across the study regions has doubled, increasing from 206 per square km in 1991 to 405 in 2016.

In four of the six regions — Metro Vancouver, the Greater Golden

Horseshoe, Calgary and Edmonton — population density has also doubled or more than doubled, with the growth in these regions ranging from a high of 150 percent in Calgary to 102 percent in the Greater Golden Horseshoe. Only in the Montreal-Drummondville and Winnipeg regions has the growth in population density been less than 100 percent, 74 percent and 26 percent, respectively, although as noted Montreal-Drummondville has the second highest density of all.

*Overall population density in the six study regions has doubled in the past quarter century. In four of the six regions it has doubled or more than doubled.*

Figure 4-3: Growth in Population Density in Study Regions , 1991-2016



Source: CPCS analysis of Statistics Canada Census data

### 4.3 Population Densification in the Designated Rail Corridors

This section provides maps illustrating the population density by Census Tract in each of the six major study regions, including around the designated rail corridors in these regions. In order to show the densification, maps are included for both 1991 and 2016 for each of the six regions, with their designated rail corridors highlighted in yellow.

*As illustrated by the maps below, there has in each of the study regions and designated rail corridors, been widespread densification over the past quarter century.*

Comparing the various maps for 1991 to those of 2016, it is readily seen how the density has grown. In each of the regions there has in general been widespread densification including in the designated rail corridors.

Following is an overview of the densification in the designated corridors, after which the maps are presented in sequence.

### 4.3.1 Overview of Densification in the Designated Corridors

Figure 4-4 summarizes the situation in the designated rail corridors. These data are the aggregate population, geographic area and density of those CTs that have rail lines either cutting through or touching their perimeters.

On a combined basis, population density within the rail corridors averages 408 persons per square km in 2016, with the Montreal Island Southwest-Drummondville and Metro Vancouver East-West corridors exhibiting density in excess of 700 persons per square km, and the Greater Golden Horseshoe corridor exhibiting density in excess of 500 persons per square km.

Overall population density within the rail corridors has increased by 1.8 times, increasing from 221 per square km in 1991 to 408 in 2016. In three of the six designated corridors

— those in the Metro Vancouver, Calgary and Edmonton areas — population density has more than doubled, with the growth in density in these corridors ranging from a high of 133 percent in the Metro Vancouver corridor to 107 percent in the Edmonton East-West corridor. In the Greater Golden Horseshoe, Montreal Island Southwest-Drummondville, and Winnipeg corridors the growth in density has been 88 percent, 61 percent and 22 percent, respectively.

*Overall population density in the six designated rail corridors has almost doubled in the past quarter century, increasing by 1.8 times. In the three Western-most corridors population density has more than doubled, while in the Greater Golden Horseshoe corridor it has increased by 1.9 times.*

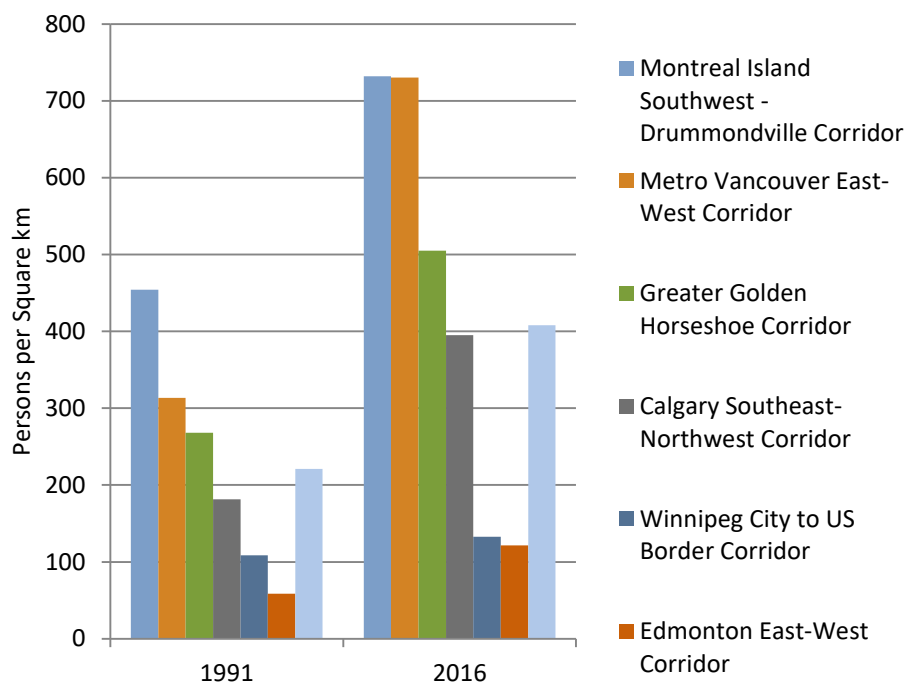
Figure 4-4: Population and Density in Designated Rail Corridors, 1991 and 2016

Corridor	Population		Area (sq km)	Population Density	
	1991	2016		1991	2016
Montreal Island Southwest - Drummondville Corridor	2,408,335	3,881,850	5,300	454	732
Greater Golden Horseshoe Corridor	4,177,448	7,879,970	15,613	268	505
Winnipeg City to US Border Corridor	580,730	709,400	5353	108	133
Calgary Southeast-Northwest Corridor	493,365	1,073,280	2717	182	395
Edmonton East-West Corridor	547,160	1,134,190	9329	59	122
Metro Vancouver East-West Corridor	942,920	2,194,875	3006	314	730
All Corridors	9,149,958	16,873,565	41,318	221	408

Source: CPCS analysis of Statistics Canada Census data

Figure 4-5 shows graphically the growth in population density in the designated rail corridors.

Figure 4-5: Growth in Population Density in Designated Rail Corridors, 1991-2016



Source: CPCS analysis of Statistics Canada Census data

#### 4.3.2 Montreal Island Southwest – Drummondville Rail Corridor

Figure 4-6 and Figure 4-7 show the population densification in the Montreal-Drummondville region and the Montreal Island Southwest - Drummondville Rail Corridor.

Figure 4-6: Montreal Island Southwest – Drummondville Corridor Population Density, 1991

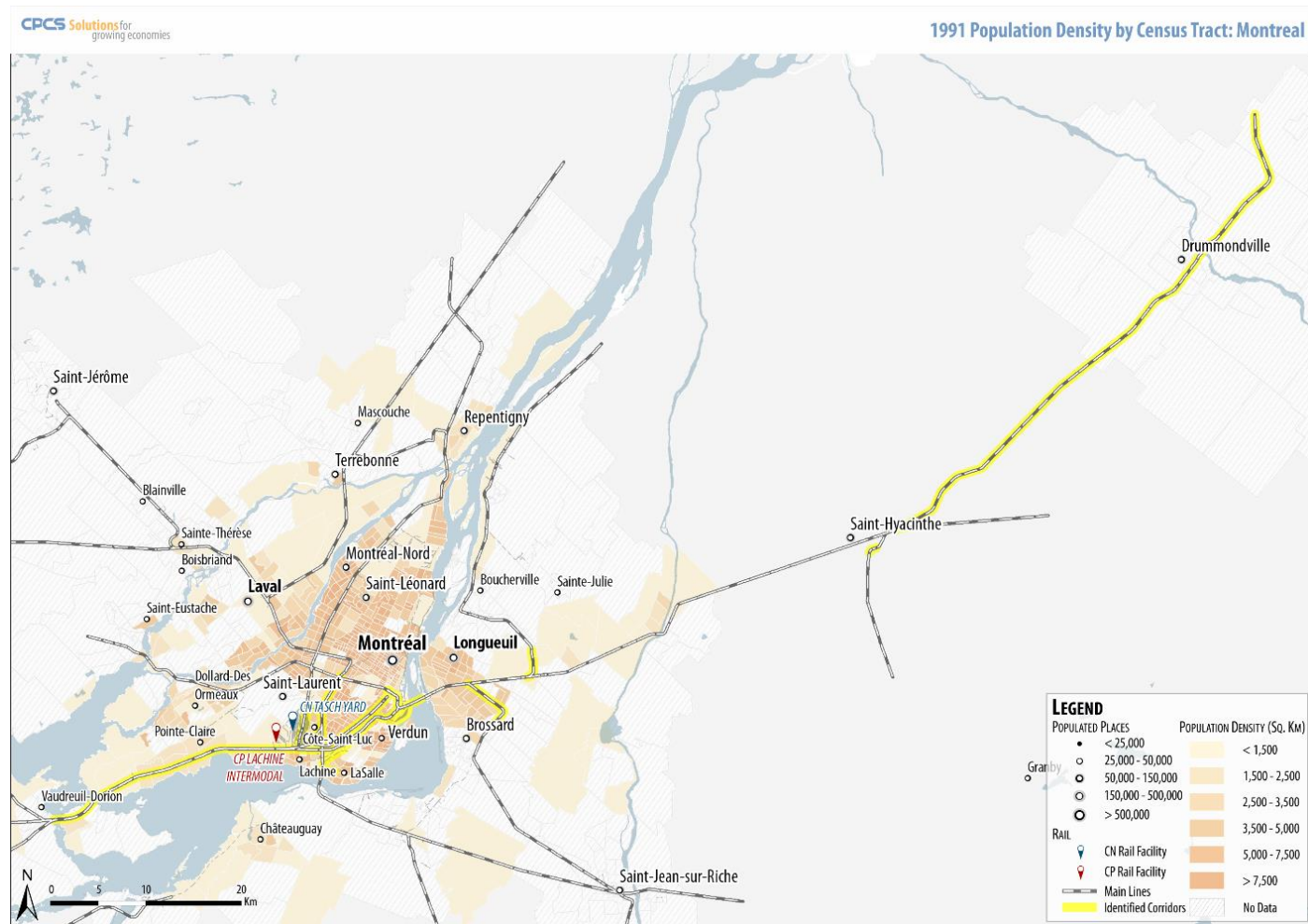
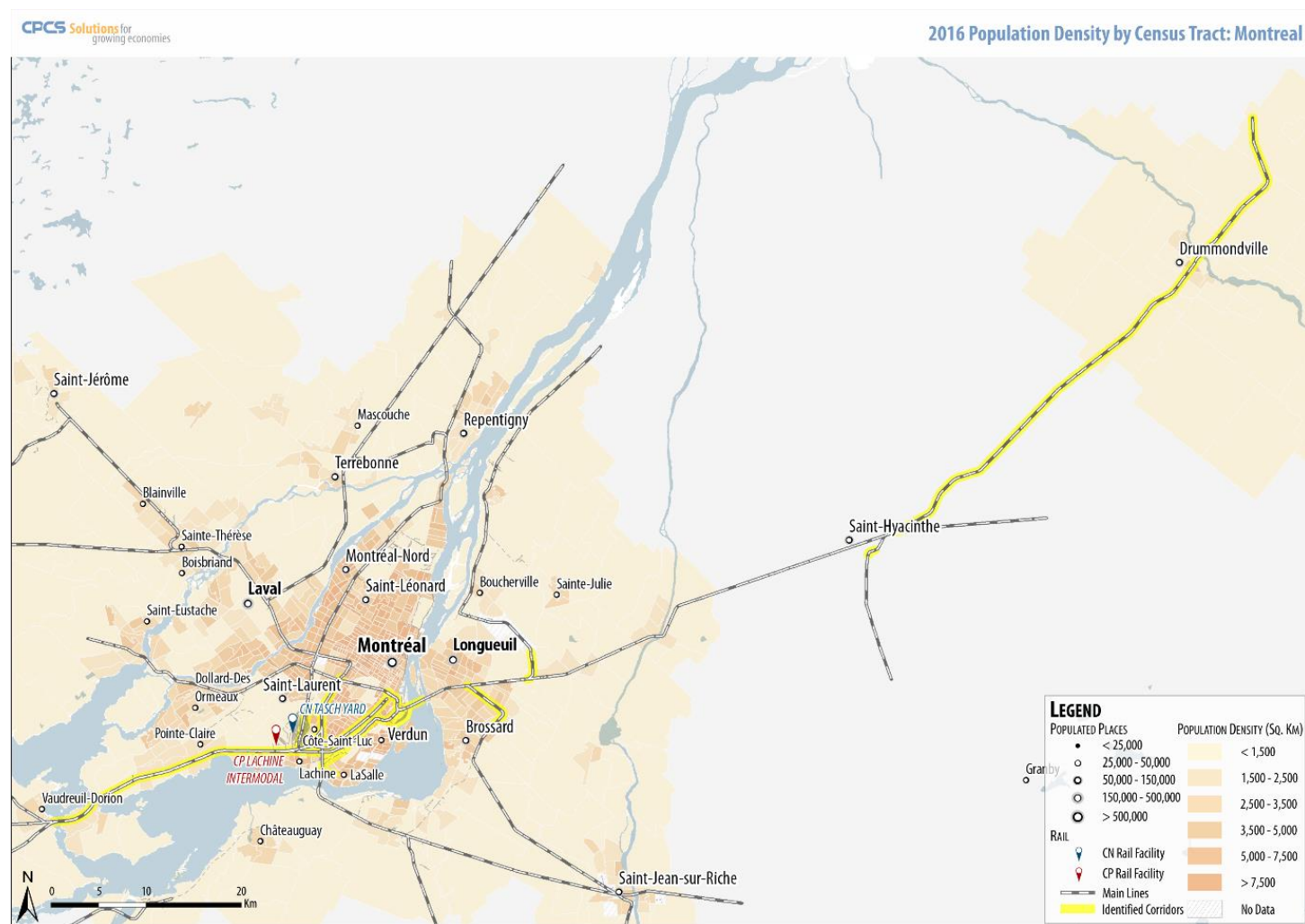




Figure 4-7: Montreal Island Southwest – Drummondville Corridor Population Density, 2016



### 4.3.3 Greater Golden Horseshoe Corridor

Figure 4-8 and Figure 4-9 show the population densification in the Greater Golden Horseshoe region and the Greater Golden Horseshoe Corridor.

Figure 4-8: Greater Golden Horseshoe Corridor Population Density, 1991

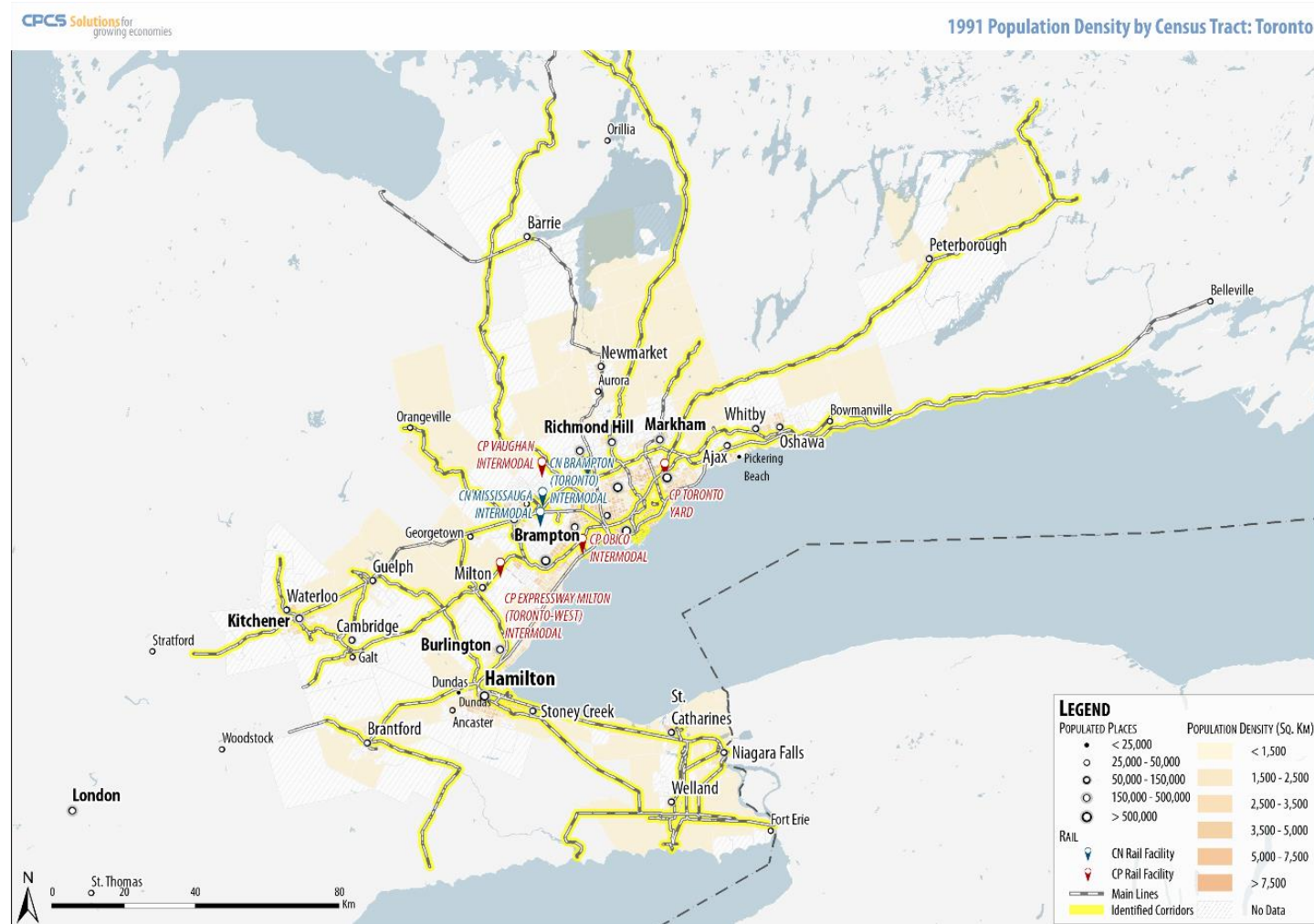
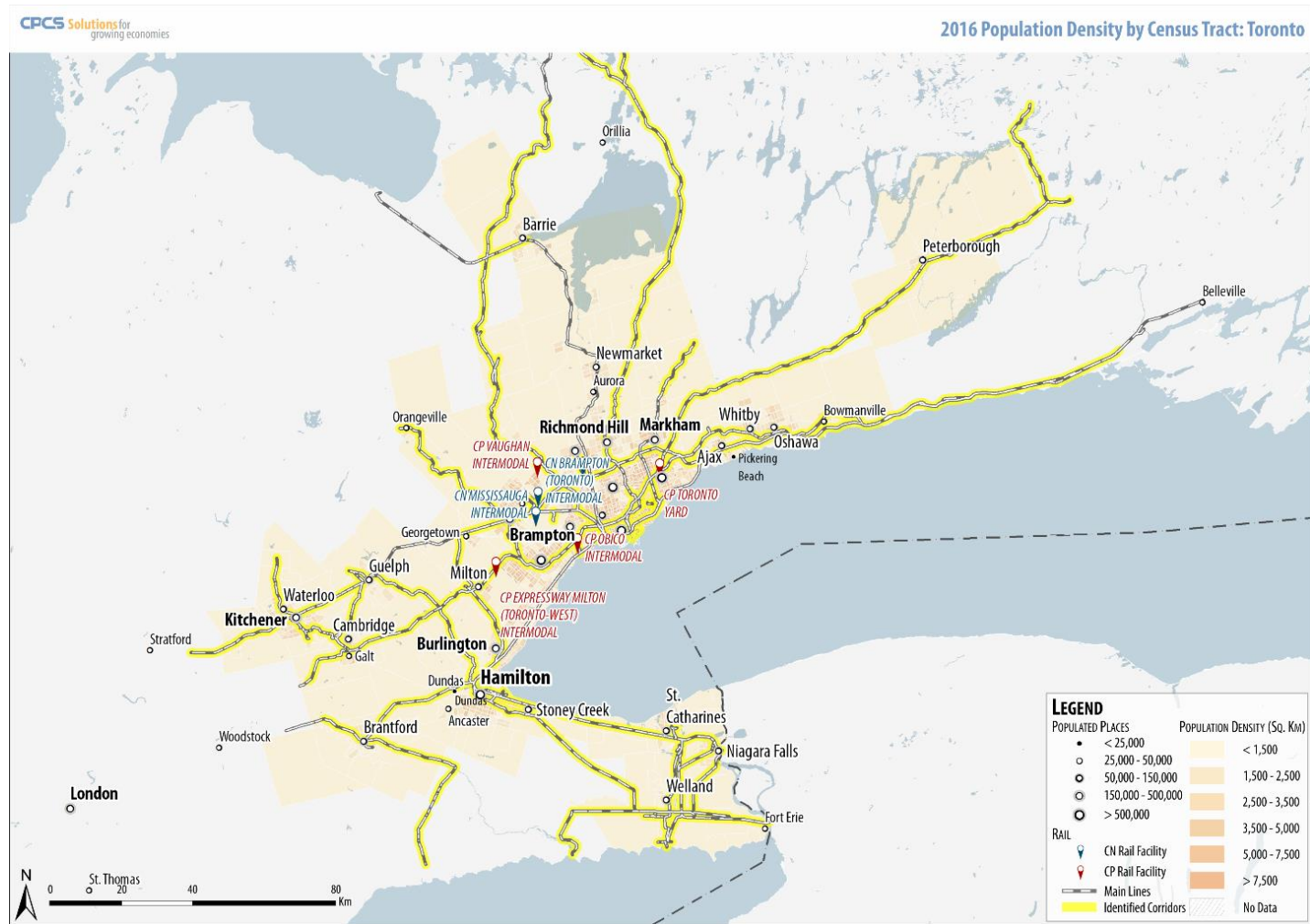


Figure 4-9: Greater Golden Horseshoe Corridor Population Density, 2016



#### 4.3.4 Winnipeg City to US Border Corridor

Figure 4-10 and Figure 4-11 show the population densification in the Winnipeg region and the Winnipeg City to US Border Corridor.

Figure 4-10: Winnipeg City to US Border Corridor Population Density, 1991

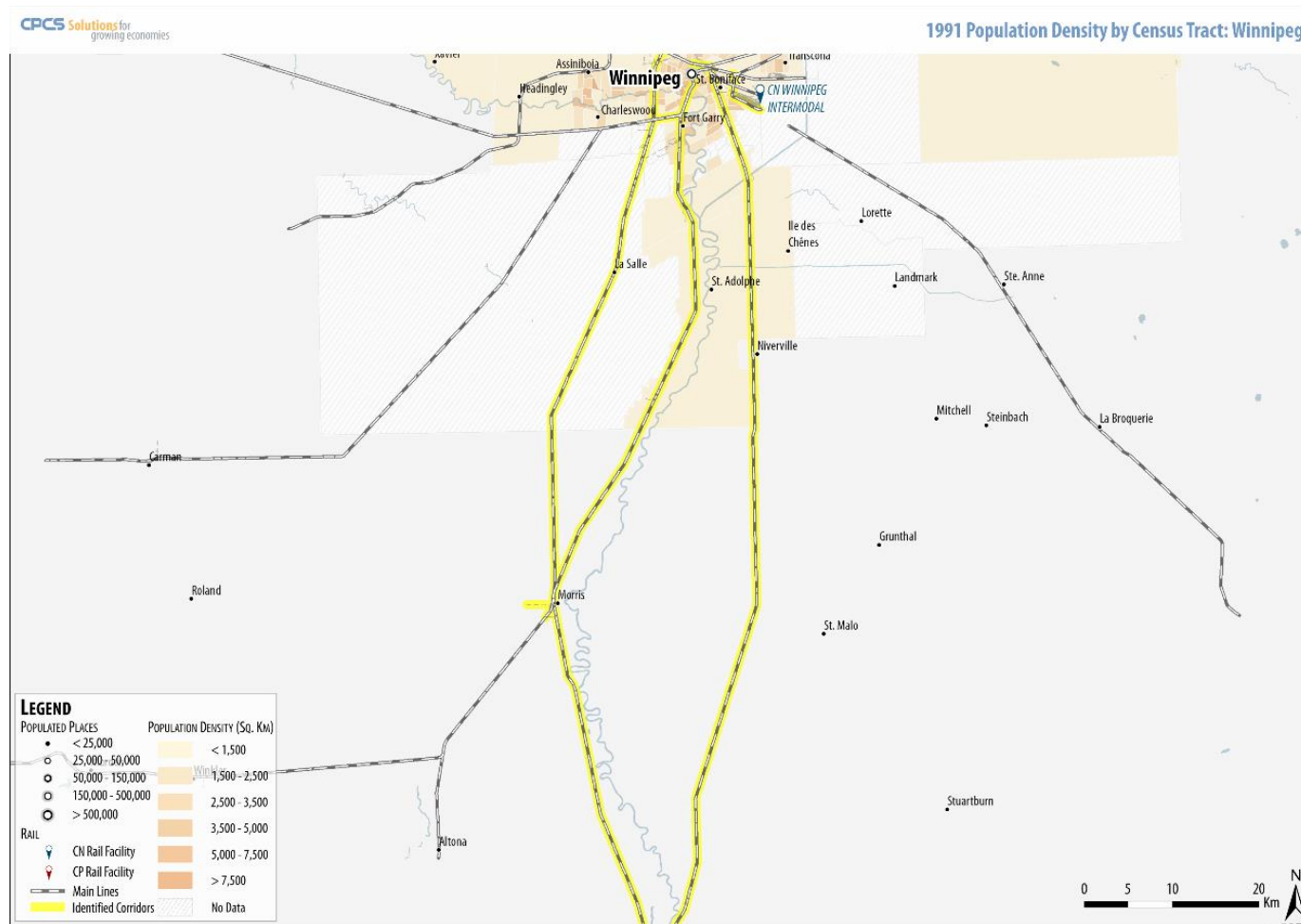
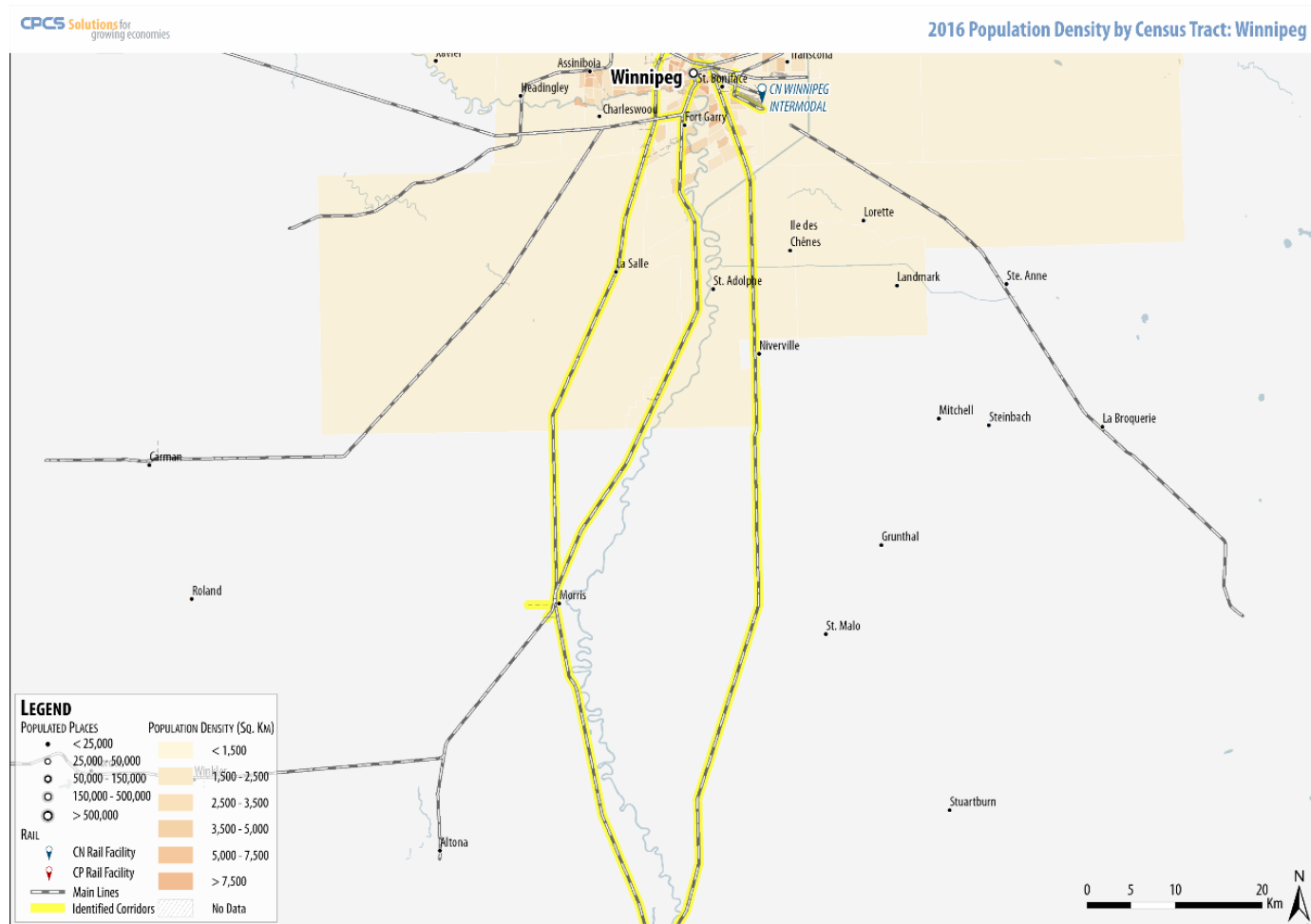


Figure 4-11: Winnipeg City to US Border Corridor Population Density, 2016





#### 4.3.5 Calgary Southeast-Northwest Corridor

Figure 4-12 and Figure 4-13 show the population densification in the Calgary region and the Calgary Southeast-Northwest Corridor.

Figure 4-12: Calgary Southeast-Northwest Corridor Population Density, 1991

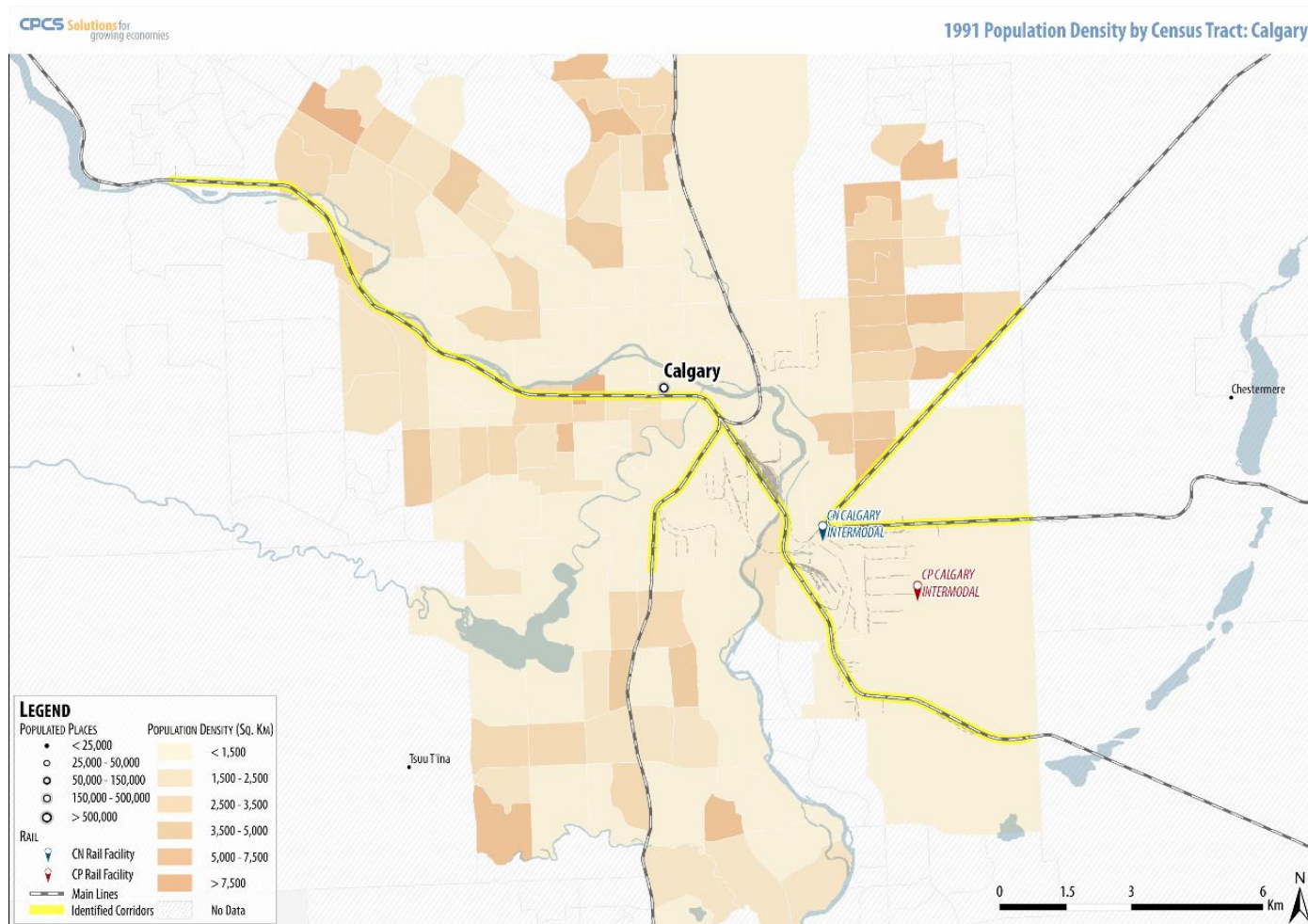
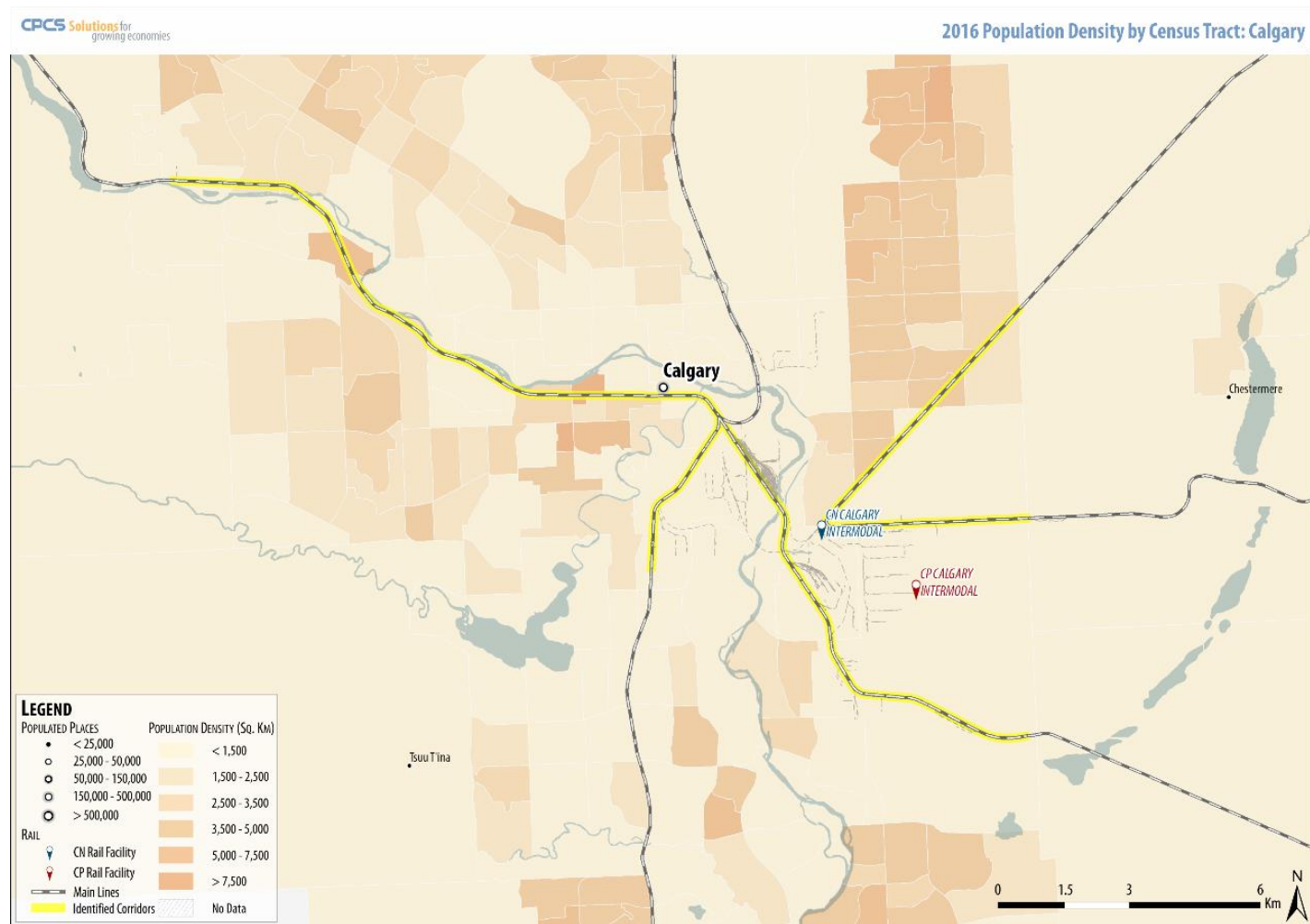


Figure 4-13: Calgary Southeast-Northwest Corridor Population Density, 2016





#### 4.3.6 Edmonton East-West Corridor

Figure 4-14 and Figure 4-15 show the population densification in the Edmonton region and the Edmonton East-West Corridor.

Figure 4-14: Edmonton East-West Corridor Population Density, 1991

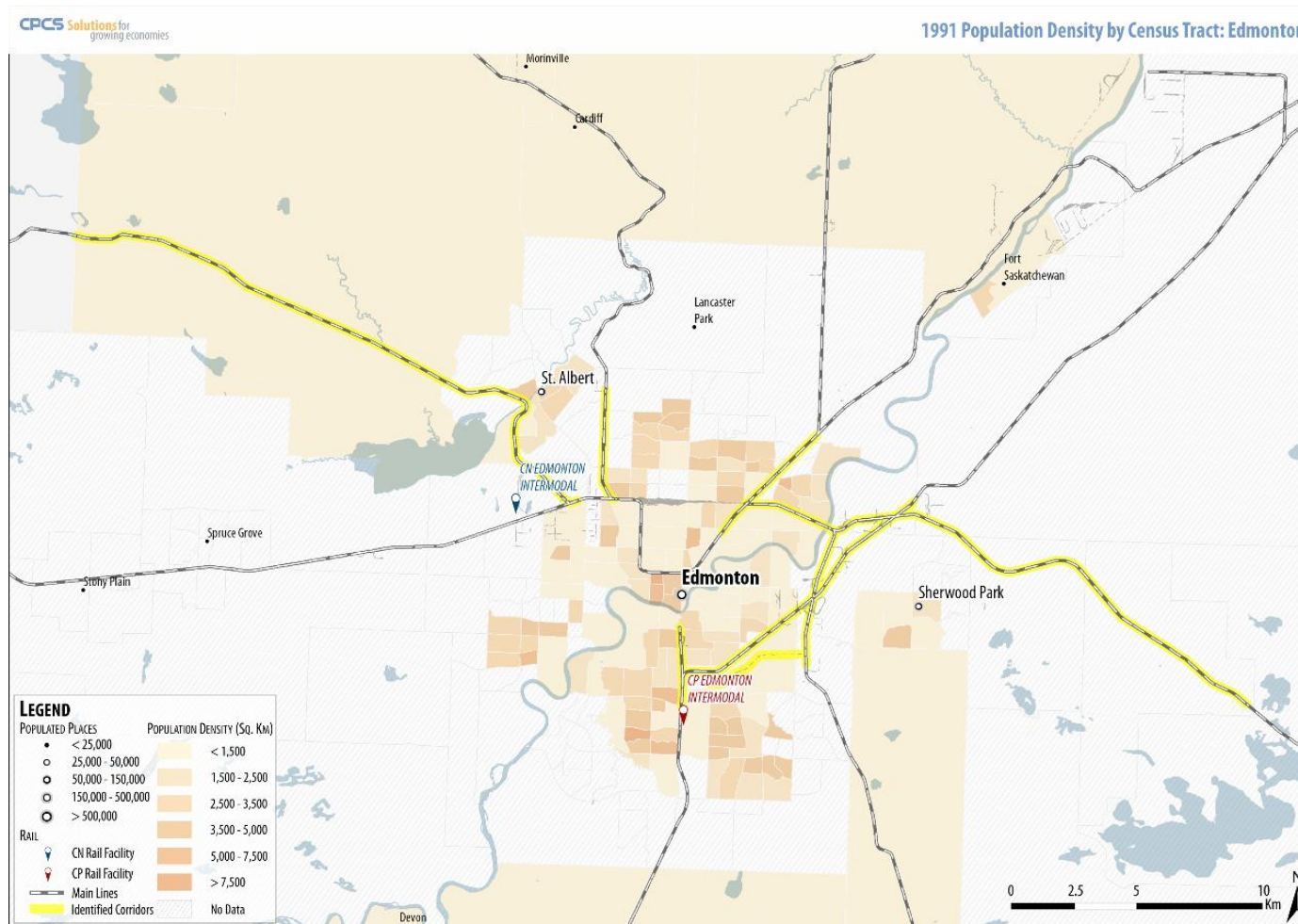
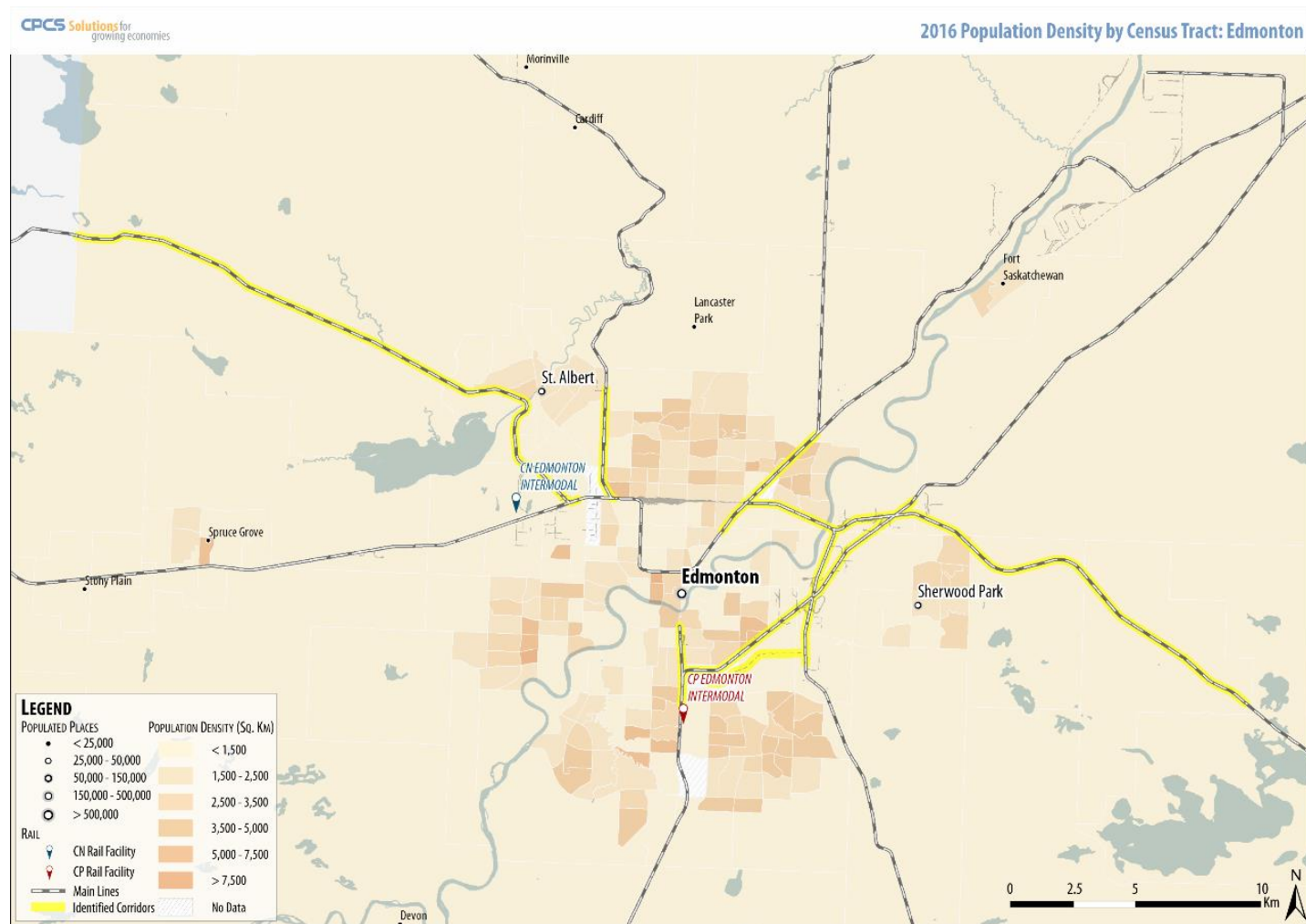


Figure 4-15: Edmonton East-West Corridor Population Density, 2016



#### 4.3.7 Metro Vancouver East-West Corridor

Figure 4-16 and Figure 4-17 show the population densification in the Metro Vancouver region and the Metro Vancouver East-West Corridor.

Figure 4-16: Metro Vancouver East-West Corridor Population Density, 1991

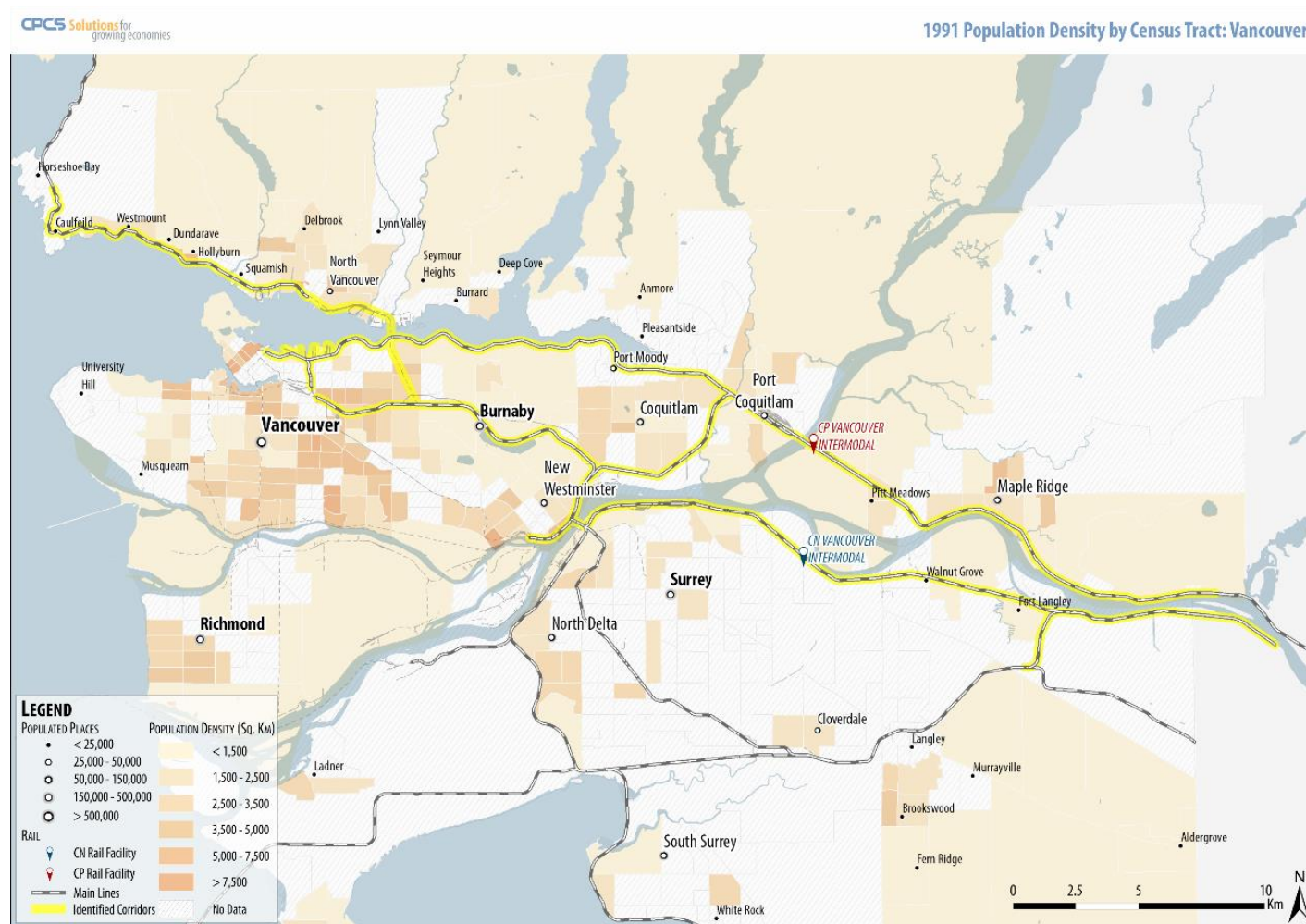
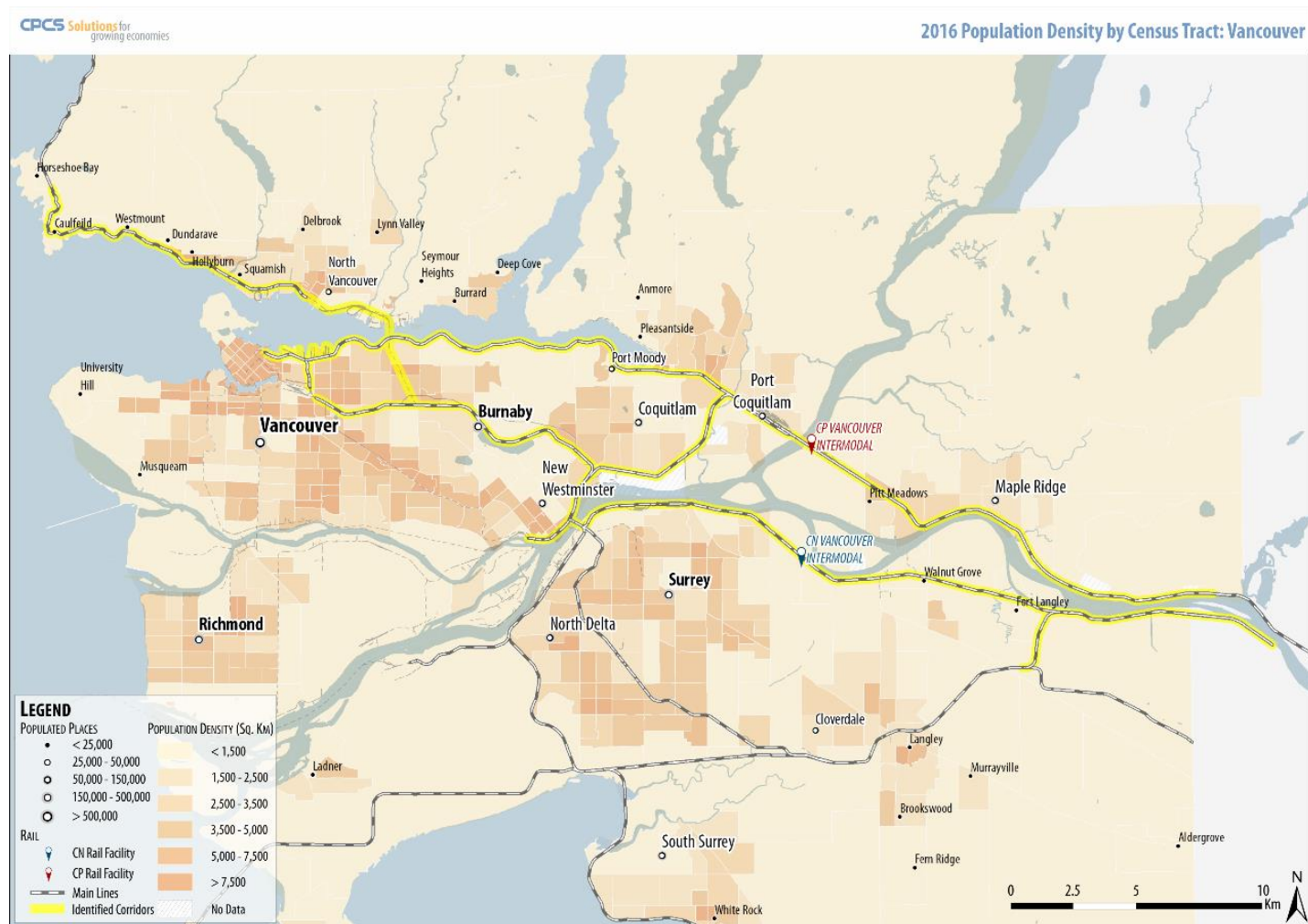




Figure 4-17: Metro Vancouver East-West Corridor Population Density, 2016



# 5 Railway Crossing and Trespassing Accidents

## Key Chapter Takeaway

- Railway crossing and trespassing accidents are the cause of nearly all railway accident related fatalities and serious injuries. Over the period 2004-June 2017, crossing and trespassing accidents accounted for 92 percent of railway accident fatalities in Canada.
- More than one-third of the crossing accidents in Canada and more than 40 percent of the trespassing accidents in Canada since 2004 occurred in the six defined study regions, with 22 percent of the crossing accidents in Canada and 26 percent of the trespassing accidents in Canada occurring in the six designated rail corridors.
- Together, the crossing and trespassing accidents in the six designated rail corridors accounted for 22 percent of the railway accident fatalities in Canada since 2004, while the crossing and trespassing accidents in the six study regions accounted for nearly 40 percent of the railway accident fatalities in Canada
- Population density in proximity to railway operations is an important contributor to railway crossing and trespassing accidents. Other factors would include the size of the rail corridor, the volume of rail traffic, the numbers of crossings in an area and degree of their safety protection, and the extent of safety measures taken to inhibit trespassing.

This chapter looks at railway accidents — specifically the numbers of railway crossing and trespassing accidents — in the major metropolitan regions and designated rail corridors chosen for the study.

The accident data in this chapter are the railway crossing and trespassing accidents as reported to and made public by the Transportation Safety Board of Canada (TSB), and therefore adhere to the definitions and reporting criteria of the TSB. The TSB describes a crossing accident as one that occurs, “when railway rolling stock is involved in a grade-crossing collision with a motor vehicle or pedestrian, resulting in death, serious injury or property damage,” and trespassing accidents as those involving, “persons, primarily pedestrians, not authorized to be on railway rights-of-way and who are struck by rolling stock

other than at railway crossings.”<sup>33</sup> The data shown in this chapter are from the TSB Railway Occurrence Database System.<sup>34</sup>

Railway accidents can be differentiated between those where third parties or members of the public were involved – namely, crossing and trespassing accidents – and others where no third parties were involved (sometimes referred to as “pure” railway accidents). The focus here is on the former, historically the cause of nearly all railway accident fatalities and serious injuries as recognized by the Railway Safety Act Review Advisory Panel in 2007.<sup>35</sup> Over the period 2004-June 2017, crossing and trespassing accidents accounted for 92 percent of railway accident fatalities in Canada.

This chapter provides maps showing the crossing and trespassing accidents that have occurred in the study regions and rail corridors over the period 2004 through June 2017. Examining the maps, it can be seen how the crossing and trespassing accidents are spread out over the highlighted designated rail corridors as well as other rail lines in the CMAs.

Following is an overview of the crossing and trespassing accidents that have occurred specifically in the six designated rail corridors, after which the maps are presented in sequence.

## 5.1 Crossing and Trespassing Accidents in the Designated Rail Corridors

### 5.1.1 Overview of Crossing and Trespassing Accidents in the Designated Corridors

Overall, the crossing accidents in the six designated major rail corridors account for more than 60 percent of the total crossing accidents in the various study regions (as defined in Section 4.1), and 22 percent of the total crossing accidents in Canada. A similar situation holds with respect to trespassing accidents. The trespassing accidents in the six designated major rail corridors account for nearly 60 percent of the total trespassing accidents in the various study regions (as defined in Section 4.1), and 26 percent of the total

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*Over the period 2004 through June 2017, 36 percent of the crossing accidents in Canada and 44 percent of the trespassing accidents in Canada occurred in the six study regions, with 22 percent of the crossing accidents in Canada and 26 percent of the trespassing accidents in Canada occurring in the designated major rail corridors.*

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<sup>33</sup> Transportation Safety Board of Canada (2017). *Statistical Summary — Railway Occurrences 2016*, p. 11. <http://www.bst-tsb.gc.ca/eng/stats/rail/2016/sser-ssro-2016.asp>.

<sup>34</sup> Transportation Safety Board of Canada. *Railway occurrence data from January 2004*. <http://www.bst-tsb.gc.ca/eng/stats/rail/index-ff.asp>.

<sup>35</sup> Railway Safety Act Review Advisory Panel (November 2007). *Stronger Ties: A Shared Commitment to Railway Safety*, p. 16.

trespassing accidents in Canada. As shown in Figure 5-1, there were over the period 2004-June 2017 a total of 2,656 railway crossing accidents in Canada, of which 590 occurred in the six designated major rail corridors and 365 occurred elsewhere in the study regions. Over the same time, there were a total of 1,000 railway trespassing accidents in Canada, of which 264 occurred in the six designated major rail corridors and 180 occurred elsewhere in the study regions, as shown in in Figure 5-2.

Figure 5-1: Railway Crossing Accidents,  
2004-June 2017

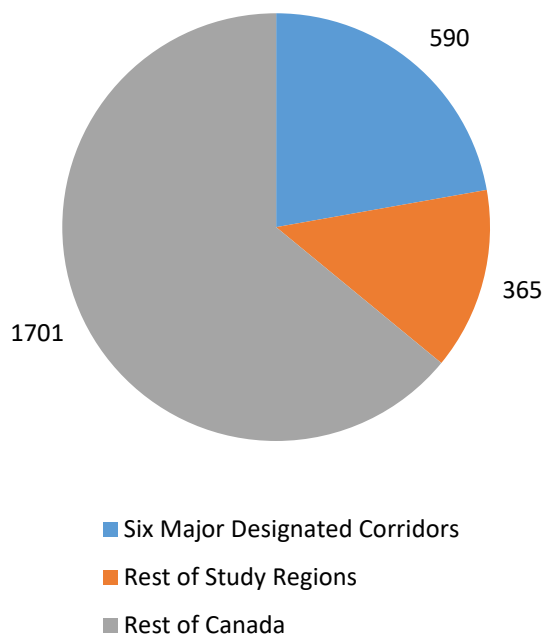
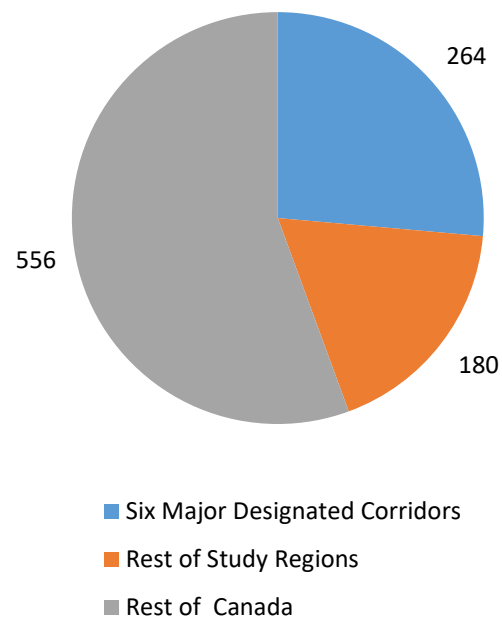


Figure 5-2: Railway Trespassing Accidents,  
2004-June 2007



Source: CPCS analysis of Transportation Safety Board data

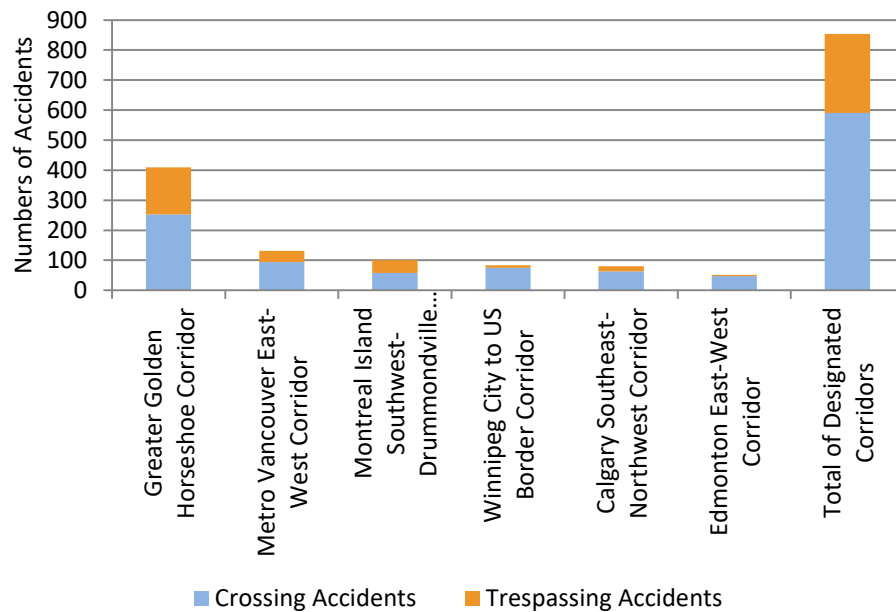
In terms of fatalities, the crossing and trespassing accidents in the six designated rail corridors since 2004 resulted in 244 fatal injuries, or 22 percent of the railway accident fatalities in Canada, while the crossing and trespassing accidents in the six study regions since 2004 resulted in 427 fatal injuries, or nearly 40 percent of the railway accident fatalities in Canada.

*The crossing and trespassing accidents in the six designated rail corridors accounted for 22 percent of the railway accident fatalities in Canada, while the crossing and trespassing accidents in the six study regions accounted for nearly 40 percent of the railway accident fatalities in Canada*



Figure 5-3 shows how the numbers of crossing and trespassing accidents are distributed across the six specifically designated railway corridors. As may be seen, there exists a basic correlation between the distribution of accidents shown in Figure 5-3 and population density as shown in Figure 4-5 or Figure 4-3 above. Generally speaking, the corridors exhibiting the largest numbers of accidents (Greater Golden Horseshoe, Metro Vancouver East-West and Montreal Island Southwest-Drummondville Corridors) are those with the highest densities.

Figure 5-3: Crossing and Trespassing Accidents in the Designated Rail Corridors, 2004-June 2017



Source: CPCS analysis of Transportation Safety Board data

However, while population density plays an unquestionably important role in crossing and trespassing accidents, there are several other contributing factors. Other factors on which crossing and trespassing accidents depend would include the size of the rail corridor, volume of rail traffic such as the number of trains per day, the numbers of crossings and the level of their safety protection, and the extent of measures taken, including construction of barriers, to inhibit trespassing.

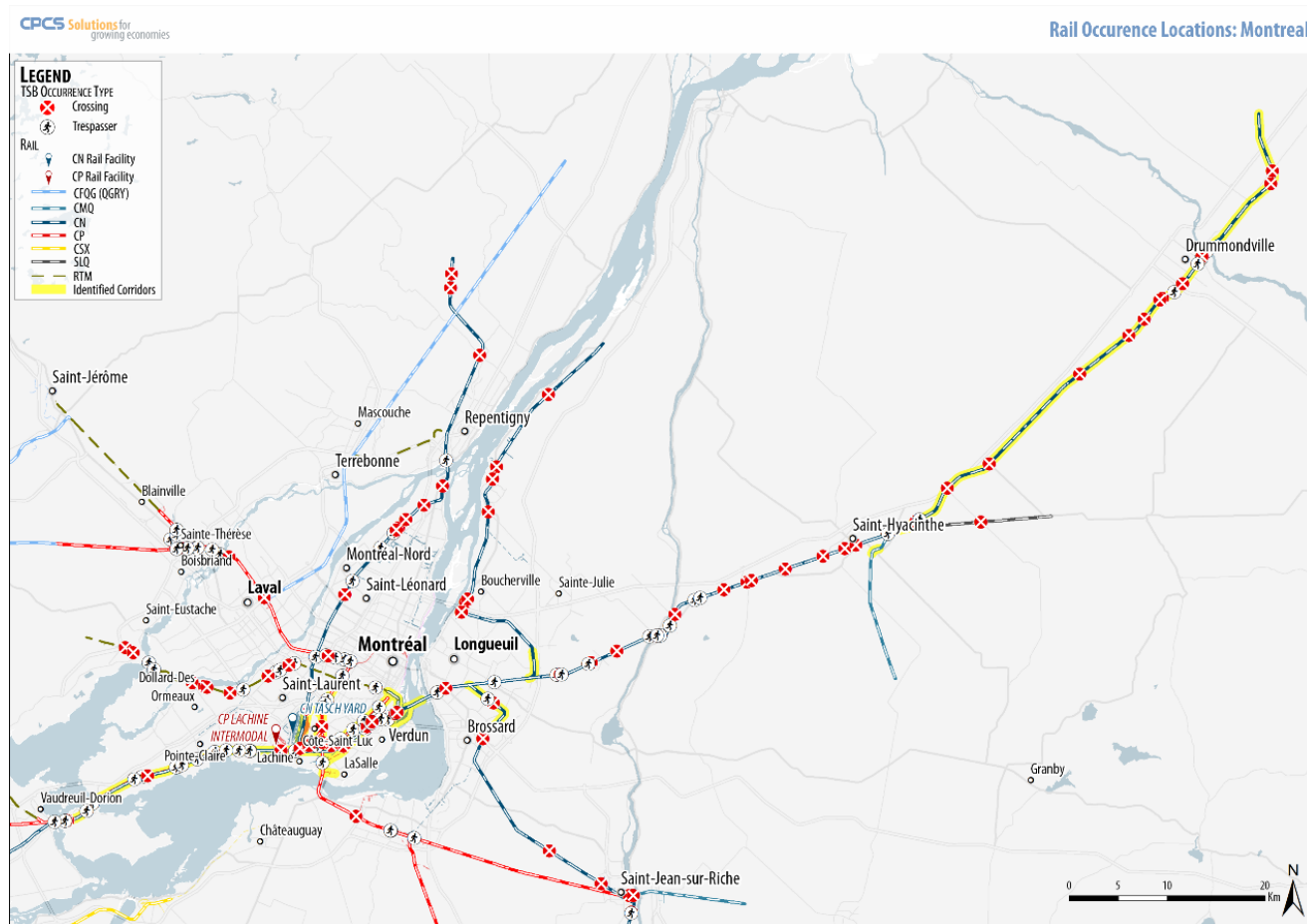
*Population density is clearly a contributor to the numbers of rail crossing and trespassing accidents. Other contributing factors to such accidents would include the size of the rail corridor, the volume of rail traffic, the numbers of crossings and degree of their safety protection, and the extent of measures taken to inhibit trespassing.*

## 5.2 Crossing and Trespassing Accidents in the Study Regions

### 5.2.1 Montreal Island Southwest – Drummondville Corridor

Figure 5-4 shows the crossing and trespassing accidents in the Montreal-Drummondville region and the Montreal Island Southwest -Drummondville Rail Corridor.

Figure 5-4: Montreal Island Southwest-Drummondville Corridor Crossing and Trespassing Accidents, 2004-May 2017



Source: Transportation Safety Board data and CPCS analysis

### 5.2.2 Greater Golden Horeseshoe Corridor

Figure 5-5 shows the crossing and trespassing accidents in the Greater Golden Horseshoe region and the Greater Golden Horseshoe Corridor.

Figure 5-5: Greater Golden Horseshoe Corridor Crossing and Trespassing Accidents, 2004-May 2017

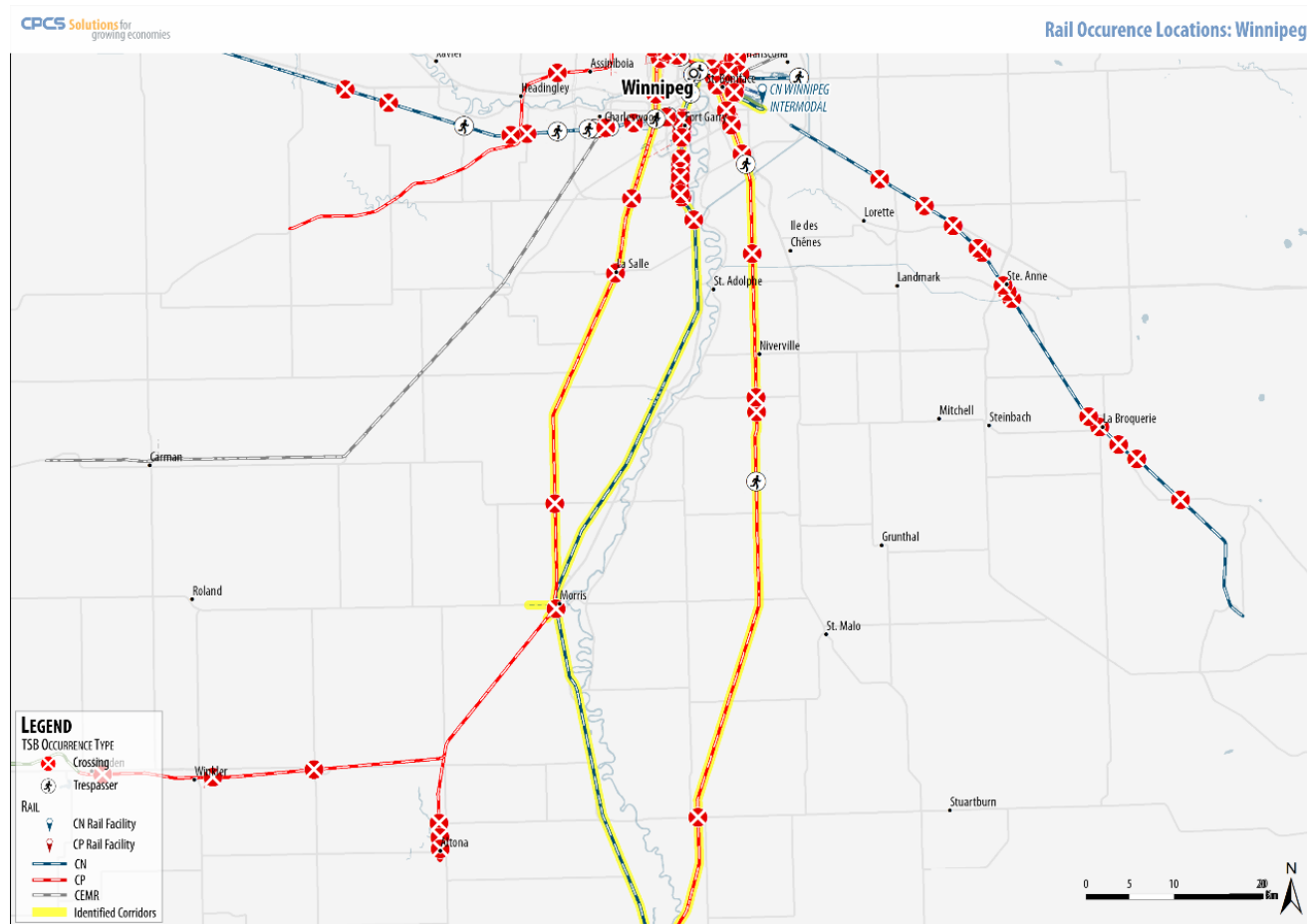


Source: Transportation Safety Board data and CPCS analysis

### 5.2.3 Winnipeg City to US Border Corridor

Figure 5-6 shows the crossing and trespassing accidents in the Winnipeg region and the Winnipeg City to US Border Corridor.

Figure 5-6: Winnipeg City to US Border Corridor Crossing and Trespassing Accidents, 2004-May 2017

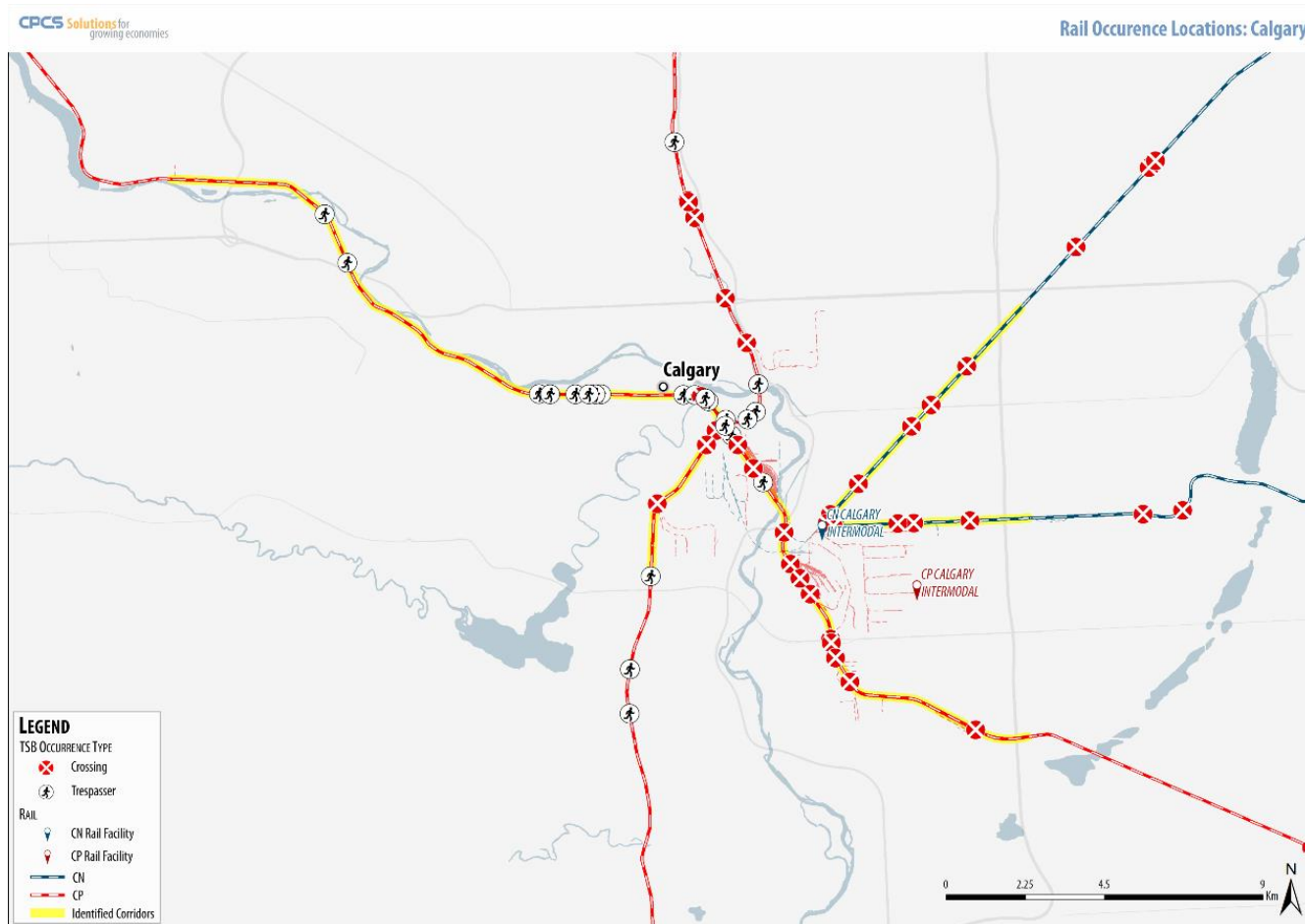


Source: Transportation Safety Board data and CPCS analysis

### 5.2.4 Calgary Southeast-Northwest Corridor

Figure 5-7 shows the crossing and trespassing accidents in the Calgary region and the Calgary Southeast-Northwest Corridor.

Figure 5-7: Calgary Southeast-Northwest Corridor Crossing and Trespassing Accidents, 2004-May 2017

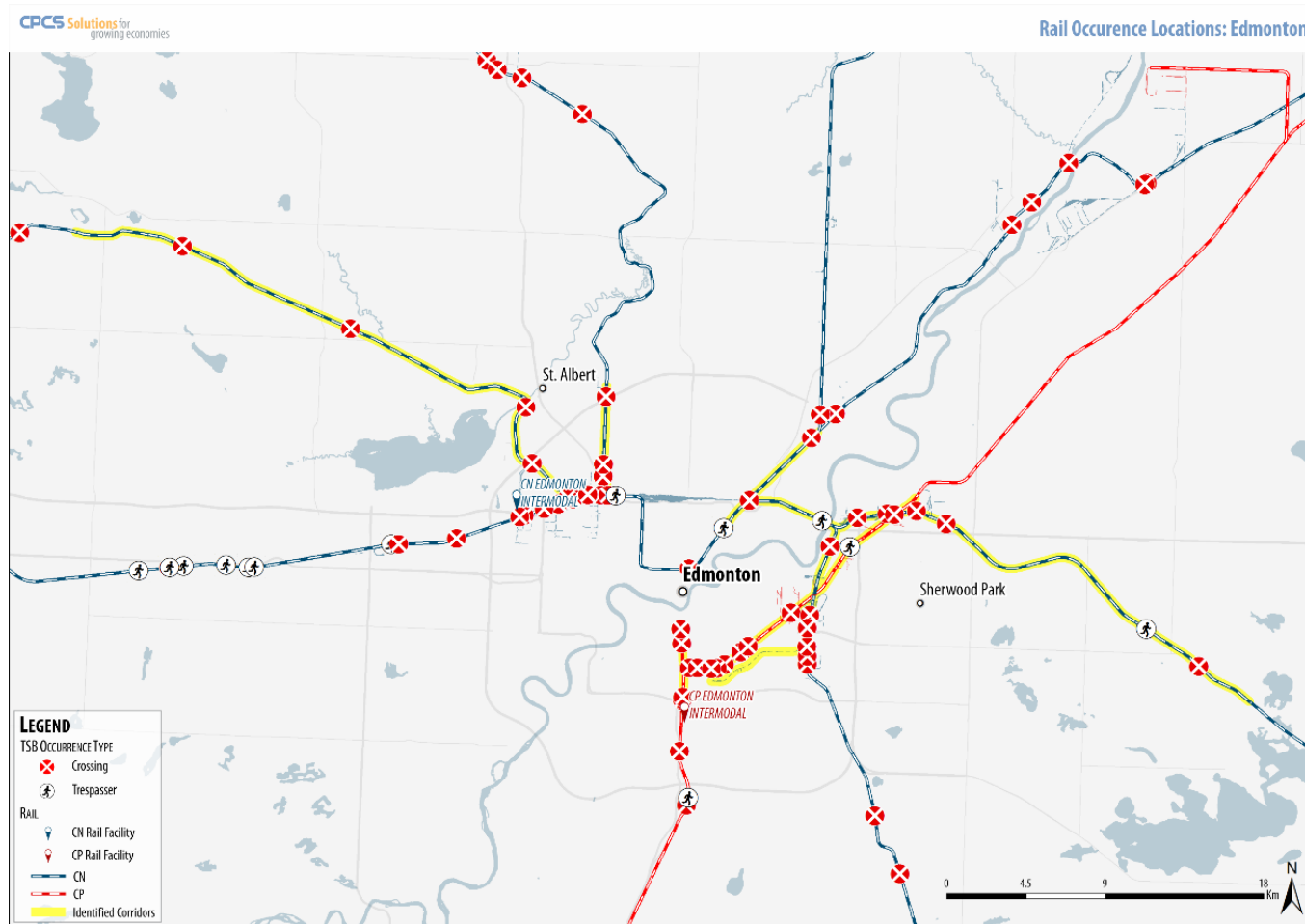


Source: Transportation Safety Board data and CPCS analysis

### 5.2.5 Edmonton East-West Corridor

Figure 5-8 shows the crossing and trespassing accidents in the Edmonton region and the Edmonton East-West Corridor.

Figure 5-8: Edmonton East-West Corridor Crossing and Trespassing Accidents, 2004-May 2017



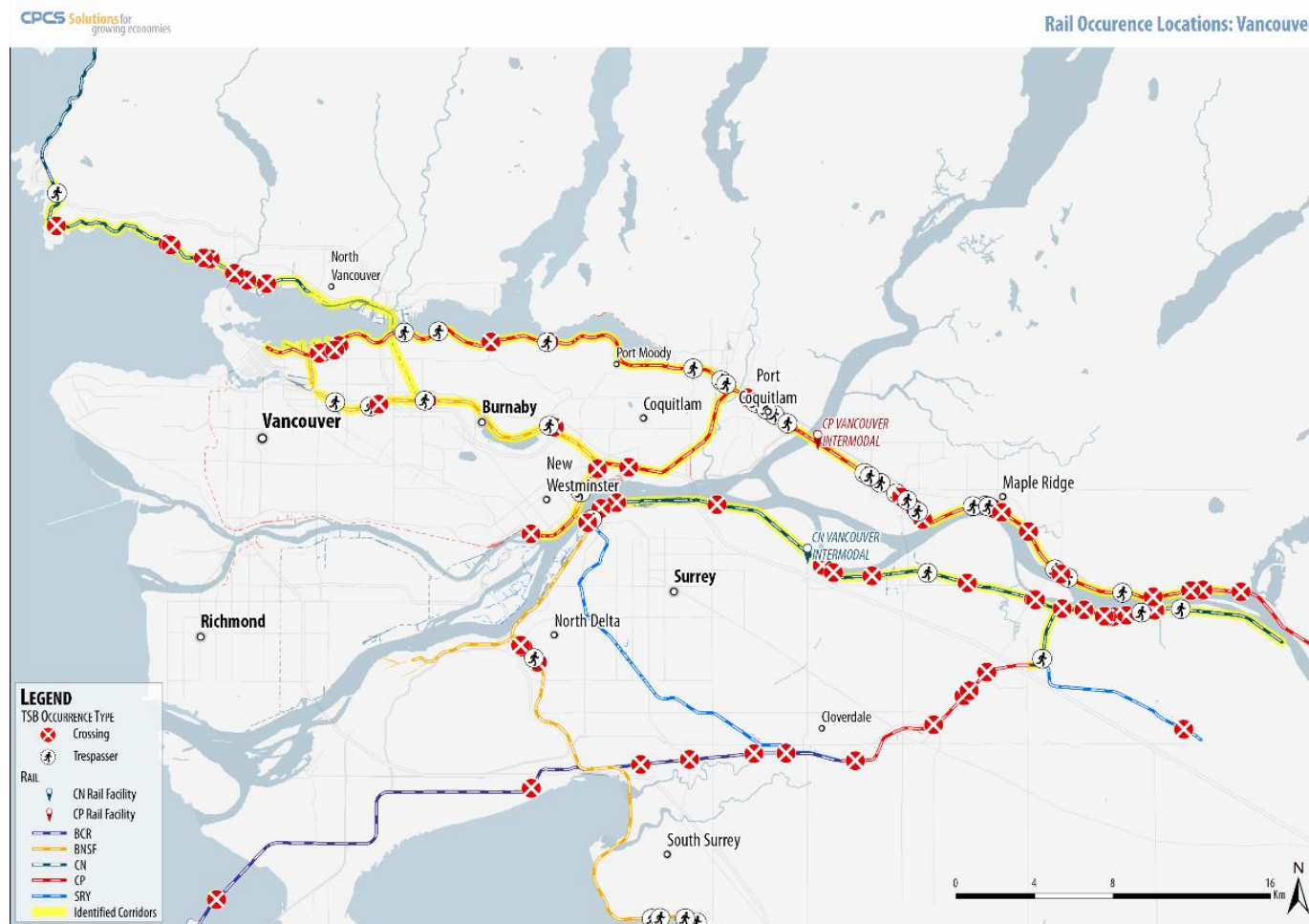
Source: Transportation Safety Board data and CPCS analysis



### 5.2.6 Metro Vancouver East-West Corridor

Figure 5-9 shows the crossing and trespassing accidents in the Metro Vancouver region and the Metro Vancouver East-West Corridor.

Figure 5-9: Metro Vancouver East-West Corridor Crossing and Trespassing Accidents, 2004-May 2017



Source: Transportation Safety Board data and CPCS analysis



# 6 The FCM-RAC Proximity Initiative and Guidelines

## Key Chapter Takeaway

- The FCM-RAC Proximity Initiative was created in 2002 to provide a platform and corresponding framework for the management of proximity issues and resolution of disputes, improving communications between railways and communities, and improving awareness and understanding of proximity issues as well as complaint and dispute resolution processes.
- The Guidelines, first developed in 2004 and revised in 2013, provide detailed land use planning and development standards for minimizing noise, vibration and safety issues in proximity to railway corridors, and an assessment process for identifying alternative solutions where standard measures are not practical.
- Close to 60 municipalities in Canada have adopted all or parts of the Guidelines. Another ten are reviewing the Guidelines, and close to 120 others have sought railway commenting on potential conditions of approval.
- While the rate of adoption has been positive, the municipality-by-municipality approach has been constrained by the large numbers of municipalities across the country and the current priority has shifted to seeking adoption at the provincial level.
- In 2016, the Proximity Initiative was expanded with the goal of having provincial governments adopt the Guidelines into their land use legislation, seen as the best means of ensuring consistency and best practices where planning and development occurs in proximity to railways.

## 6.1 The FCM-RAC Proximity Initiative

The FCM-RAC Proximity Initiative was created with the signing of the first Memorandum of Understanding (MOU) between the FCM and the RAC in May 2002. The MOU listed the following objectives:

- Clarify the roles of the parties and develop a broad framework to guide the industry and municipal governments in the management of proximity issues and dispute resolution.

- Improve communications between railways and communities supported by consistent guidelines for land use and proximity issues.
- Develop communication tools aimed at increasing awareness and building a better understanding of proximity issues as well as complaint and dispute resolution processes.

The MOU was renewed in 2007, and an open-ended MOU was signed in 2009. In 2016, the MOU was updated to include specifications for engaging with provincial governments. The Proximity Initiative Steering Committee and three working groups have membership with equal representation from railways and municipalities that includes senior railway representatives, councilors and mayors representing communities from across Canada, as well as members from Transport Canada and the Canadian Transportation Agency who participate as observers.

The Proximity Initiative has an annual outreach program to promote the program and the Guidelines through presentations and participation at conferences across Canada, including municipal associations, urban planning associations, urban planning schools, industry associations, municipal councils, local government associations, transportation associations, development and real-estate groups, and provincial land use ministries.

Accomplishments to date have included developing a dispute resolution model that is included in the Agency's *Guidelines for the Resolution of Complaints over Railway Noise and Vibration*,<sup>36</sup> and developing and publishing the first FCM-RAC proximity guidelines in 2004. These initial guidelines were reviewed and revised to include conversion and infill projects and launched in 2013 as the present Guidelines.

The new MOU includes creation of a Proximity Government Relations Committee to encourage and foster provincial legislation specifically relating to land use planning in proximity to railway operations. While there is increased interest and activity by municipalities in adopting the Guidelines, given the numerous municipalities spread across Canada, the FCM and RAC believe it would be more productive for the Provinces to adopt the recommended mitigation measures into their land use acts to

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*In 2016, the FCM-RAC Proximity Initiative was expanded to include specifications for engaging with provincial governments, the goal being to have provincial governments adopt the Guidelines into their land use acts as the best means of ensuring consistency and best practices in land use planning and development in proximity to railway operations.*

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<sup>36</sup> Canadian Transportation Agency. *Guidelines for the Resolution of Complaints over Railway Noise and Vibration*. <https://otc-cta.gc.ca/eng/publication/guidelines-resolution-complaints-over-railway-noise-and-vibration>.

ensure consistency and best practices as municipal land use planning and zoning must incorporate provincial legislation.

## 6.2 The FCM-RAC Proximity Guidelines<sup>37</sup>

This section outlines the basics of the FCM-RAC Guidelines. The intention of the Guidelines is to provide a level of consistency across Canada in the approach to the design of developments in proximity to railway corridors and the type of mitigation provided. Although not included in the present discussion, a number of policy recommendations are highlighted throughout the Guidelines report.

### 6.2.1 Principles for Mitigation Design

The Guidelines state that the following principles — an expression of the intent of the Guidelines— should be considered when applying the Guidelines. It is stated that developers and municipalities should have regard for these principles when designing or assessing new residential development in proximity to a railway corridor:

- Standard mitigation measures are desired as a minimum requirement.
- Where standard measures are not viable, alternatives may be applied in keeping with the Development Viability Assessment<sup>38</sup> process provided in the Guidelines.
- Mitigation measures should adhere to the highest possible urban design standards. Solutions “should not create an onerous, highly engineered condition that overwhelms the aesthetics of an environment.”

### 6.2.2 Standard Building Setbacks for New Developments

A setback from the railway corridor or freight yard provides a buffer from railway operations, permitting dissipation of emissions, vibrations, and noise, and accommodating a safety barrier. Residential separation distances are intended to address the fundamental land use incompatibilities. Where feasible, the standard recommended building setbacks for new residential development are:

- Freight Rail Yard: 300 meters
- Principal Main Line: 30 meters
- Secondary Main Line: 30 meters
- Principal Branch Line: 15 meters
- Secondary Branch Line: 15 meters

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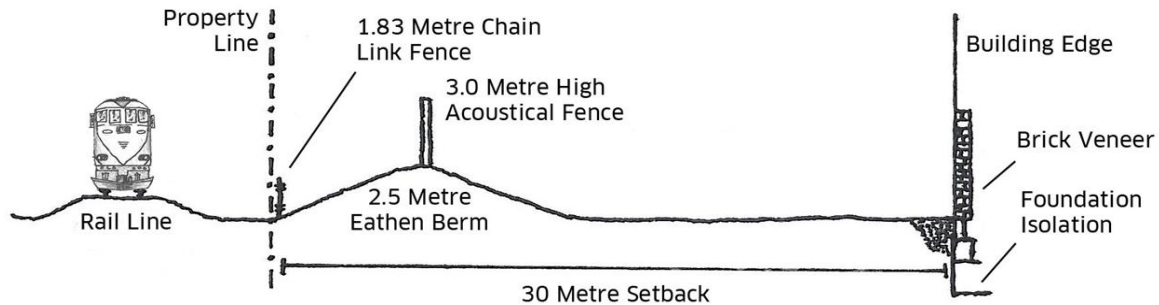
<sup>37</sup> Extracted from Federation of Canadian Municipalities and Railway Association of Canada (May 2013), *Guidelines for New Development in Proximity to Railway Operations*, op.cit, Section 3.

<sup>38</sup> Ibid., Appendix C.

- Spur Line: 15 meters

Figure 6-1 illustrates the standard mitigation measures desired as a minimum requirement, including the standard 30 meter setback for new residential development.

Figure 6-1: Standard Mitigation Measures for New Residential Development in Proximity to Railway Main Line



Source: FCM-RAC *Guidelines for New Development in Proximity to Railway Operations*

### 6.2.3 Noise Mitigation

Noise is a key issue for developments in proximity to railway facilities. The level and impact of noise varies depending on the type of train operations and is therefore site specific. New residential buildings in proximity to railway operations should be designed and constructed to comply with the sound level limits criteria provided in the Guidelines.<sup>39</sup>

A noise barrier can effectively reduce the rail noise by between 5dBA and 15dBA, although the largest reductions are difficult to achieve without very high barriers. Minimum barrier heights, which vary by the classification of the rail line, are typically at least:

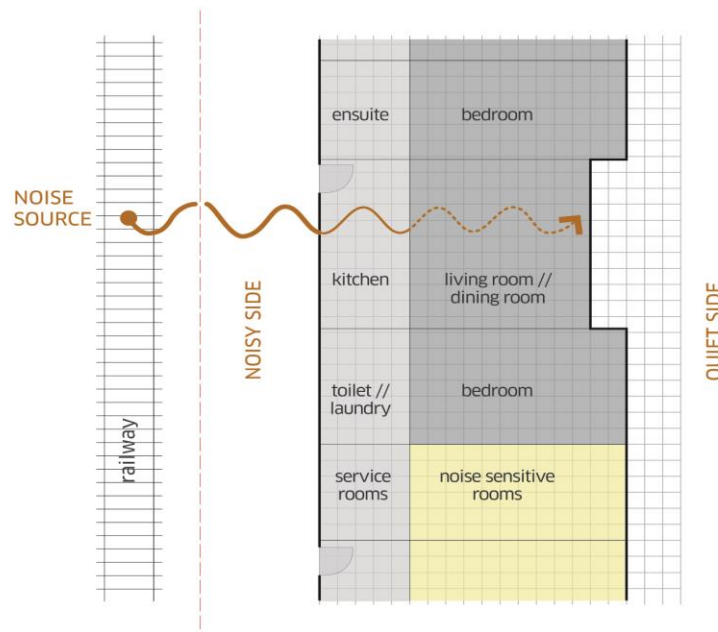
- Principal Main Line: 5.5 metres above top of rail
- Secondary Main Line: 4.5 metres above top of rail
- Principal Branch Line: 4.0 metres above top of rail
- Secondary Branch Line: no minimum
- Spur Line: no minimum

<sup>39</sup> Federation of Canadian Municipalities and Railway Association of Canada (May 2013), *Guidelines for New Development in Proximity to Railway Operations*, op.cit, Appendix C.

As shown in Figure 6-2, it is possible for the height of a noise barrier to be achieved in combination with that of a safety berm where one is present.

Many of the adverse impacts of railway noise can be mitigated through proper design practices. As illustrated in Figure 6-2, consideration of the location and orientation of buildings, as well as their internal layout, can minimize the exposure of more sensitive spaces. Site design should consider the location of the rail corridor, existing sound levels, topography, and nearby buildings. In addition to noise barriers, acoustic shielding from other structures, the use of appropriate windows, doors, ventilation, and façade materials can all minimize noise impacts. The Guidelines note that many of the recommended design options have cost and market acceptability liabilities that should also be evaluated at the outset of the design process.

Figure 6-2: Mitigating Noise Impacts Through Design Practices



Copyright Railway Association of Canada

## 6.2.4 Vibration Mitigation

Vibration from passing trains can affect not only the liveability of the units inside a residential building but also its structure, although structural integrity is not a factor in most cases. However, the effects of vibration are, like sound, site specific. They depend on the soil and subsurface conditions, the frequency and speed of trains, and the quantity and type of goods being transported.

Mitigation of vibration requires inhibiting its transmission at some point in the path between the railway track and the building. In some instances, sufficient mitigation is provided by the distance from the track or by the “coupling loss” which occurs at the footings. However, these factors may not be adequate and other measures may have to be considered. The Guidelines provide recommended procedures for the preparation of vibration impact studies.<sup>40</sup>

### 6.2.5 Safety Barriers

Safety barriers reduce the risks associated with railway incidents by intercepting or deflecting derailed cars. The standard safety barrier is a simple earthen berm, and safety barriers are constructed as berms where full setbacks are provided. Setbacks and berms should typically be provided together in order to afford a maximum level of mitigation.

Berms should be constructed adjoining and parallel to the railway right-of-way with returns at the ends and to the following specifications:

- Principal Main Line: 2.5 metres above grade with side slopes not steeper than 2.5:1 (Figure 6-1)
- Secondary Main Line: 2.0 metres above grade with side slopes not steeper than 2.5:1
- Principal Branch Line: 2.0 metres above grade with side slopes not steeper than 2.5: 1
- Secondary Branch Line: 2.0 metres above grade with side slopes not steeper than 2.5:1
- Spur Line: no requirement

Where the standard berm and setback are not feasible, a Development Viability Assessment should be undertaken to evaluate the conditions specific to the site, determine its suitability for development, and suggest alternative barriers such as crash walls or crash berms.

### 6.2.6 Security Fencing

Trespassing on to a railway corridor is dangerous. At a minimum, all new residential developments in proximity to railway corridors should include a 1.83-metre high chain link fence along the entire mutual property line, constructed by the owner entirely on private property, as illustrated in Figure 6-1. Other materials may also be considered, in consultation with the railway company and the municipality. Noise barriers and crash walls are generally acceptable substitutes for standard fencing, although additional standard fencing may be required in any location with direct exposure to the rail corridor in order to ensure there is a continuous barrier to trespassing.

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<sup>40</sup> Ibid.

### 6.3 Adoption of the FCM-RAC Proximity Guidelines

Formal adoption of the FCM-RAC Guidelines can be expected to have major benefits in terms of reduced noise and vibration and reduced safety risks due to fewer trespassing and crossing incidents.

To date, 57 municipalities across Canada have adopted all or parts of the FCM-RAC Guidelines into their long-term development plans. As noted in Chapter 3, the City of Montreal was the first major urban area in Canada to adopt the Guidelines in full, which it did into its Island-wide development plan in January 2015. Ten other municipalities are reviewing the Guidelines, and 123 others have sought railway commenting for setbacks and safety barriers as potential conditions of approval.

Among the provinces, Ontario has included many aspects of the Guidelines in its Provincial Policy Statement that became effective on April 30, 2014. In addition, Ontario requires railways to be notified of official plans (and amendments), subdivision plans, zoning bylaws and consents to sever lands, if the proposal involves any land within 300 meters of a rail line.

This allows the railways to submit recommendations regarding incompatibility or safety issues, and disputes can be brought to the OMB for adjudication. New Brunswick has adopted a similar notification process in its subdivision bylaws, to become effective January 1, 2018.

Currently in Saskatchewan the Ministry of Government Relations is reviewing input from stakeholders (members of the FCM-RAC Proximity Government Relations Committee attended) regarding amendments to *The Planning and Development Act, 2007*. The Ministry consulted on five planning and development-related themes that included planning in proximity to railway operations. Legislation should be adopted by May 2018. The Proximity Government Relations Committee is also currently consulting with the governments of Alberta and Quebec.

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*To date, 57 municipal governments in Canada have adopted all or parts of the FCM-RAC Guidelines. Another 10 municipalities are reviewing the Guidelines, and 123 others have sought railway commenting for setbacks and safety barriers as potential conditions of approval. As noted above, the FCM-RAC Proximity Initiative has also begun engaging with provincial governments, seeking to have them adopt the Guidelines into their legislation.*

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# 7 Conclusion

As recognized by the previous *Railway Safety Act* Review in 2007, Canada has been experiencing growing proximity problems, including increased risks to public safety, since at least the late 20<sup>th</sup> century as a result of sensitive land use developments being built adjacent or near to railway corridors. And as reflected by the more recent *Canada Transportation Act* Review report and recommendations in 2015, this trend has continued.

Given the key role of railways in fostering Canada's economy, trade-based growth and prosperity, it is imperative that the integrity, efficiency and safety of Canada's railway corridors be maintained, and it is essential that the current *Railway Safety Act* Review take a carefully considered approach as regards the proximity issues highlighted in this study. Recognizing that the public safety risks emanating from these proximity issues could increase further under the status quo, the FCM-RAC Proximity Initiative goal of achieving land use policy consistency across Canada and, specifically, securing adoption of the proximity Guidelines at the provincial level by their incorporation into provincial land use acts, is a logical and appropriate strategy.

# Appendix A: Provincial and Municipal Land Use Legislation

## Ontario

Ontario Land Use Provincial Policy Statement — Sections Pertaining to Proximity<sup>41</sup>

### 1.2.6 Land Use Compatibility

1.2.6.1 *Major facilities and sensitive land uses* should be planned to ensure they are appropriately designed, buffered and/or separated from each other to prevent or mitigate *adverse effects* from odour, noise and other contaminants, minimize risk to public health and safety, and to ensure the long-term viability of *major facilities*.

### 1.6.8 Transportation and Infrastructure Corridors

1.6.8.2 *Major goods movement facilities and corridors* shall be protected for the long term.

1.6.8.3 Planning authorities shall not permit *development* in *planned corridors* that could preclude or negatively affect the use of the corridor for the purpose(s) for which it was identified.

New *development* proposed on *adjacent lands* to existing or *planned corridors* and transportation facilities should be compatible with, and supportive of, the long-term purposes of the corridor and should be designed to avoid, mitigate or minimize negative impacts on and from the corridor and transportation facilities.

1.6.9.1 Planning for land uses in the vicinity of *airports, rail facilities* and *marine facilities* shall be undertaken so that:

- a) their long-term operation and economic role is protected; and
- b) *airports, rail facilities* and *marine facilities* and *sensitive land uses* are appropriately designed, buffered and/or separated from each other, in accordance with policy 1.2.6.

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<sup>41</sup> Ontario Ministry of Municipal Affairs and Ministry of Housing (2014), *2014 Provincial Policy Statement*, op.cit.

## Saskatchewan

### Saskatchewan Statements of Provincial Interest — Transportation<sup>42</sup>

#### 6.14 Transportation

##### STATEMENT

The province has an interest in safe, cost-effective, transportation systems that meet existing and future needs for economic growth, community development and diversification.

##### Planning Documents and Decisions

To assist in meeting the province's transportation interests, planning documents and decisions shall, insofar as is practical:

1. Consider both human and environmental interests when planning, constructing, maintaining, decommissioning and reclaiming road systems and other transportation corridors;
2. Ensure that development is compatible with existing and planned transportation infrastructure, including rail lines, rail yards, airports, barge docks, ferry landings and provincial highways;
3. Be consistent with provincial transportation plans; and
4. Encourage opportunities for efficient and cost-effective alternative transportation methods.

## New Brunswick

### *Community Planning Act* (Bill 45) — Sections Pertinent to Proximity<sup>43</sup>

77(1) (h) (v), which states that where a subdivision by-law is in effect, and the development officer receives a tentative plan that (in the officer's opinion) includes a utility or other easement, and if any of the land is within 300 meters of a railway, the officer must forward a copy of the plan to the company operating the railway line.

77(2) (c), which states that a subdivision plan that involves the laying out of public or future streets, the setting aside of land for public purposes, a variance, or (in the opinion of the development officer) a utility or other easement, shall not be approved (under paragraph (1)(k)) unless in the case of a utility or other easement, the easement appears on the plan and

- (i) the development officer has been advised by the agency concerned that it is satisfied with it, or a time limit of more than two weeks determined by the officer for receiving the advice has expired without objection being received, or

<sup>42</sup> Government of Saskatchewan, *The Statements of Provincial Interest Regulations, being Chapter P-13.2 Reg 3* (effective March 29, 2012), op.cit.

<sup>43</sup> Government of New Brunswick, Bill 45 *Community Planning Act*, op.cit.

- (ii) it is approved by the development officer despite an objection being received under subparagraph (i)

81(2) (f), which states that (subject to an exemption under paragraph 77(1)(c)), a tentative plan shall be marked “Tentative Plan” and show, if applicable, any natural and artificial features, including buildings, railways, highways, watercourses, drainage ditches, swamps and wooded areas within or adjacent to the land proposed to be subdivided.

## Montreal

Translated from Schéma d'aménagement et de développement de l'agglomération de Montréal (Montreal Urban Agglomeration Land Use and Development Plan)<sup>44</sup>

### 4.8.3 Safety, noise and vibrations

#### 4.8.3.1 Occupying land adjacent to a marshalling yard or a main track

The urban planning regulations of a municipality or borough must include criteria that foster the safety of its developments or constructions required for one of the following sensitive-land uses if the proposed land is adjacent to a marshalling yard or main track, indicated on Map 24 – High volume rail and road network. For the purposes of assessing such criteria, the regulation must require the submission of an assessment in compliance with Appendix XVII.<sup>45</sup> (Note: Appendix XVII is a copy of “Annex A – Development Viability Assessment” of the FCM-RAC Proximity Guidelines discussed elsewhere in this study).

Sensitive-land uses include:

- Residential use
- One of the following community or institutional facilities:
  - Library
  - Home-care and long-term care centre
  - Child and youth protection centre
  - Rehabilitation centre
  - Health and social services centre
  - Hospital
  - School
  - Religious building, such as a place of worship or convent
  - Daycare

The urban planning regulation must stipulate that a land or a portion of land located less than 75 metres from the border of a marshalling yard or main track and adjacent to such right-of-

<sup>44</sup>

<sup>45</sup> Appendix XVII is a copy of Appendix A – Development Viability Assessment of the FCM-RAC Proximity Guidelines discussed elsewhere in this study.

way cannot be occupied by one of the sensitive-land uses listed above if the level of vibration, inside the building or part of building where its use is carried out, is greater than 0.14 mm/s.

#### 4.8.3.2 Occupying land adjacent to a marshalling yard

The urban planning regulation for a municipality or borough must stipulate that a land or a portion of land located less than 300 metres from the marshalling yard right-of-way indicated on Map 24 – High volume rail and road network, and adjacent to this right-of-way may not be occupied by one of the sensitive-land uses listed in section 4.8.3.1, if the noise level, inside the building or part of the building where its use is carried out, is greater than 40 dBA Leq (24 hr) or by ground-level recreation area outside the building if the noise level is greater than 55 dBA Leq (24 hr).

#### 4.8.3.3 Occupying land adjacent to a high traffic track or a main track

The urban planning regulation of a municipality or borough must stipulate that a land or portion of land located less than 30 metres from the right-of-way of a high volume track or main track, indicated on Map 24 – High volume rail and road networks, and adjacent to this right-of-way, cannot be occupied by one of these sensitive-land uses listed in section 4.8.3.1, if the noise level inside the building or part of the building where its use is carried out, is greater than 40 dBA Leq (24 hr).

# Appendix B: Designated Rail Corridors

## Montreal West – Drummondville Corridor

- AMT Subdivision:
  - Deux-Montagnes subdivision: from mile 0 to 1
- CN Subdivisions:
  - St-Hyacinthe subdivision: from mile 38.7 to mile 74.1
  - St-Hyacinthe Butler Industrial Spur: from mile 0 to mile 2
  - Montreal subdivision: from mile 1.22 to mile 11.53
  - Kingston subdivision: from mile 10.32 to mile 22
  - St-Laurent Subdivision: from mile 144 to 146.27
  - Drummondville subdivision: from mile 90.2 to mile 125.16
  - Rouses point subdivision: from mile 38.6 to mile 42.78
  - Sorel subdivision: from mile 0 to mile 1.93
- Central Maine and Quebec Railway subdivisions:
  - St-Guillaume subdivision: from mile 20.5 to mile 24.69
- St-Laurent & Atlantique (QC) subdivisions:
  - Sherbrooke subdivision: from mile 106.3 to mile 109.57
- CP Subdivisions:
  - Westmount subdivision: from mile 0 to mile 4.58
  - Adirondack-La Salle spur: from mile 0 to mile 0.82
  - Adirondack-South Bank Branch: from mile 0 to mile 2.52
  - Adirondack-North from mile 42.412 to mile 47
  - Farnham Connection: from mile 0 to mile 1.9
  - St-Luc Branch: from mile 0 to mile 2.1
  - Vaudreuil subdivision: from mile -0.12 to mile 19.26 (mile post -0.12 is due to merging of NRCAN database with CP timetables)

## Greater Golden Horseshoe Corridor

- Toronto Port Lands Company:
  - Kingston subdivision: from mile 2.67 to mile 6.78
- GO Transit:
  - Kingston subdivision: from mile 313.88 to mile 333.85
  - Uxbridge subdivision: from mile 38.8 to mile 61.02
  - Bala subdivision: from mile 0 to mile 16.24
  - Don Branch: from mile 206.31 to mile 211.46
  - Oakville subdivision: from mile 0 to mile 39.3
  - Weston subdivision: from mile 0 to mile 17
  - Newmarket subdivision: from mile 2.53 to mile 62.97
  - Canpa subdivision: from mile 0.04 to mile 2.58



- GO Subdivision: from mile 0 to mile 11.7
- Galt subdivision: from mile -0.15 to mile 5
- Pearson subdivision: from mile 0 to mile 1.8
- CN Subdivisions:
  - Kingston subdivision: from mile 238.1 to mile 313.94
  - Kingston subdivision – Harris lead: from mile 0 to mile 1.2
  - Kingston subdivision – Geco Branch spur: from mile 1.74 to mile 3.15
  - Kingston subdivision – CN spur: from mile
  - Stamford subdivision: from mile 0 to mile 31.6
  - Humberstone spur: from mile -0.46 to mile 5.92
  - Grimsby subdivision: from mile 0.35 to mile 43.7
  - Dundas subdivision: from mile 0 to mile 33.2
  - Dundas subdivision – TH&B: from mile 60.99 to mile 62.29
  - Oakville subdivision: from mile 19.3 to mile 39.3
  - Newmarket subdivision: from mile 92.96 to mile 101
  - Bala subdivision: from mile 16.24 to mile 100.8
  - Thorold subdivision: from mile 1.3 to mile 4.05
  - York subdivision: from mile -0.25 to mile 25
  - York subdivision – Macmilland Yard: from mile -0.1 to mile 3.94
  - Halton subdivision: from mile 0 to mile 49.5
  - Halton subdivision – Milton spur: from mile 0 to mile 1.21
  - Halton subdivision – Torbram Industrial Lead East: from mile 0 to mile 3.43
- CP Subdivisions:
  - Belleville subdivision - Yard: from mile 196.1 to mile 206.31
  - North Toronto subdivision: from mile 0 to mile 5.92
  - Montrose subdivision: from mile 2.77 to mile 13.15
  - Montrose subdivision – Stevensville spur: from mile 6.59 to mile 13.37
  - Hamilton subdivision: from mile 12.2 to mile 76.19
  - Hamilton subdivision – Dunnville spur: from mile 9.27 to mile 18.78
  - Hamilton subdivision – Caso spur: from mile 19.26 to mile 30.37
  - Hamilton subdivision – Belt Line spur: from mile 0 to mile 2.6
  - Galt subdivision: from mile 5 to mile 68.9
  - Galt subdivision – Owen Sound spur: from mile 0 to 2.13
  - Waterloo subdivision: from mile 0.84 to mile 11.21
  - Waterloo subdivision – Hesperler spur: from mile 1.91 to 3.27
  - MacTier subdivision: from mile -0.1 to mile 104
  - MacTier subdivision – Vaughan Terminal spur: from mile 0.03 to mile 2.92
  - MacTier subdivision – Honda Allister spur: from mile 0 to mile 1.38
  - Belleville subdivision: from mile 108.7 to mile 196.1
  - Belleville subdivision – Cherrywood spur: from mile 0 to mile 1.17
  - Nephton subdivision: from mile 0 to mile 20.29
  - Havelock subdivision: from mile 90.67 to mile 182.36

- Waterloo Central Railway:
  - Uxbridge subdivision: from mile 0 to mile 12.16
- Goderich-Exeter Railway:
  - Huron Park subdivision: from mile 0.43 to mile 5.5
  - Guelph subdivision: from mile 30 to mile 67
  - Guelph subdivision – Fergus Spur: from mile 18.04 to mile 30
- Guelph Junction Railway:
  - Goderich subdivision: from mile 16.44 to mile 34.85
- Barrie-Collingwood Railway:
  - Meaford subdivision: from mile 0 to 8.42
- Southern Ontario Railway:
  - Hagersville subdivision: from mile 0 to 25 and from mile 27 to mile 35
  - Grimsby subdivision: from mile 0 to mile 4.25
- Port Colborne Harbour Railway:
  - Harbour Spur: from mile 0 to mile 6.45
  - Cayuga spur: from mile 18.94 to mile 21.96
  - Canal spur: from mile 0 to 14
  - Government spur: from mile 0 to mile 1.06
  - Thorold spur: from mile 4.22 to mile 7.77
  - NS&T spur: from mile 3.67 to mile 6.08
  - Lakeshore spur: from mile 0 to mile 0.71
  - Fronthill spur: from mile 4.5 to mile 6.04
- Orangeville-Brampton Railway:
  - Owen Sound subdivision: from mile 2.13 to mile 36.8
- York Durham Heritage Railway:
  - Uxbridge subdivision: from mile 28.12 to mile 38.8
- South Simcoe Railway:
  - Beeton subdivision: from mile 54.66 to mile 59.37

#### Winnipeg City to US Border Corridor

- CP Subdivisions:
  - La Riviere subdivision: from mile 0 to mile 42
  - Emerson subdivision: from mile 0 to mile 64.1
  - Keewatin subdivision: from mile 124 to mile 125.68
- CN Subdivisions:
  - Letellier subdivision: from mile 0 to mile 63.34
  - Miami subdivision: from mile 0 to mile 2.0
  - Rivers subdivision: from mile 0.14 to mile 5
  - Sprague subdivision: from mile 147 to mile 151.3

#### Calgary Southeast-Northwest Corridor

- CN Subdivisions:
  - Drumheller subdivision: from mile 129 to mile 131.84
  - Three Hills subdivision: from mile 123 to mile 126
- CP Subdivisions:
  - Brooks subdivision: from 166 to mile 175.77

- Red Deer subdivision: from mile 0 to mile 3
- Aldersyde subdivision: from mile 116 to mile 119
- Laggan subdivision: from mile 0 to mile 10

#### Edmonton East-West Corridor

- CN Subdivisions:
  - Camrose subdivision: from mile 0 to mile 5
  - Camrose subdivision – Strathcona industrial spur: from mile 0 to mile 3.83
  - Scotford subdivision: from mile 0 to mile 2.19
  - Wainwright subdivision: from mile 0 to mile 24
  - Sangudo subdivision: from mile 0 to mile 5
  - Westlock subdivision: from mile 0 to mile 4
  - Vegreville subdivision: from mile 124 to mile 127.71
- CP Subdivisions:
  - Scotford subdivision: from mile 163 to mile 173.31
  - Leduc subdivision: from mile 95 to mile 97.08

#### Metro Vancouver East-West Corridor

- CP Subdivisions:
  - Cascade subdivision: from mile 94 to mile 106.4
  - Cascade-West subdivision: from mile 106.4 to mile 129.05
  - Westminster subdivision: from mile 0 to mile 9.25
- CN Subdivisions:
  - Yale subdivision: from mile 96 to mile 118.24
  - Rawlison subdivision: from mile 0 to mile 2.45
  - New Westminster subdivision: from mile 0 to mile 5.94
  - Burrard Inlet Line: All of it
  - Squamish subdivision: from mile 0 to mile 6
- BNSF Subdivisions:
  - New Westminster subdivision: from mile 143 to mile 155.73
  - New Westminster subdivision – Burrard Inlet Line: from mile 0 to mile 0.96