

# Appendix 5 DEVELOPMENT GUIDELINES NEAR RAILWAY OPERATIONS <sup>1</sup>

## Table of contents

<i>A-5.1 Introduction</i> .....	1
<i>A-5.2 Information about the site</i> .....	2
<i>A-5.3 Information about railway facilities</i> .....	2
<i>A-5.4 Information about the development</i> .....	3
<i>A-5.5 Information about the construction</i> .....	3
<i>A-5.6 Determination of hazards and risks</i> .....	4

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### A-5.1 Introduction

Development of residential structures in proximity to railway corridors can pose many challenges, particularly in terms of successfully mitigating the various vibration, noise, and safety impacts associated with railway operations. The standard mitigation measures, illustrated below, have been designed to provide proponents with the simplest and most effective solution for dealing with these common issues.

However, in some cases, particularly in already built-up areas of the country's largest cities, development proposals will be put forward for smaller or constrained sites that are not able to accommodate these measures, particularly the full setback and berm. In cases where municipalities have already determined that residential is the best use for these sites, such proposals will be subject to a Development Viability Assessment, the intent of which is to evaluate any potential conflicts that may result from the proximity of the development to the neighbouring rail corridor, as well as any potential impacts on the operation of the railway as a result of the new development, both during the construction phase and afterwards. The proposed development will not be permitted to proceed unless the impacts on both the railway and the development itself are appropriately managed and mitigated. It must be noted that the intention of the Development Viability Assessment tool is not to justify the absence of mitigation in any given development proposal. Rather, it is to allow for an assessment based on the specific and inherent characteristics of a site, and therefore, the identification of appropriate mitigation measures.

As such, the Development Viability Assessment is a tool to assist developers who cannot accommodate standard mitigation measures in assessing the viability of their site for development and in designing the appropriate mitigation to effectively address the potential impacts associated with building near railway operations. The development viability assessment exercise, which should be carried out by a qualified planner or engineer in close consultation with the affected railway, must:

- i. identify all potential hazards to the operational railway, its staff, customers, and the future residents of the development;
- ii. take into account the operational requirements of the railway facilities and the whole life cycle of the development;

## Appendix 5

### DEVELOPMENT GUIDELINES NEAR RAILWAY OPERATIONS

- iii. identify design and construction issues that may impact on the feasibility of the new development;
- iv. identify the potential risks and necessary safety controls and design measures required to reduce the risks to the safety and operational integrity of the railway corridor and avoid long-term disruptions to railway operations that would arise from a defect or failure of structure elements; and
- v. identify how an incident could be managed if it were to occur.

It is strongly recommended that developers consult with the affected railway while preparing the assessment of the development's viability, to ensure that all relevant issues are addressed.

This document establishes the minimum generic requirements that must be addressed as part of a Development Viability Assessment accompanying a development application for land in proximity to railway operations. Proponents should note that there may be additional topics that will need to be addressed in a Development Viability Assessment, depending on the unique nature of the subject site and proposed development. These additional topics should be determined in consultation with the affected railway and local municipality.

Municipalities should use the results of the Development Viability Assessment to determine whether proposed mitigation measures are appropriate.

The following sections outline basic content requirements for a standard Development Viability Assessment.

#### A-5.2 Information about the site

The Assessment must include a detailed understanding of the conditions of the subject site in order to generate a strong understanding of the context through which conflicts may arise. At a minimum, the factors to be considered are:

- i. site condition (cutting, embankments, etc.);
- ii. soil type, geology;
- iii. topography;
- iv. prevailing drainage patterns over the site; and
- v. proximity to the railway corridor and other railway infrastructure/utilities.

#### A-5.3 Information about railway facilities

It is imperative that details of the railway corridor (or other facility) itself also be evaluated in order to properly determine the potential conflicts associated with a new development in close proximity to railway activities. At a minimum, the factors to be considered are:

- i. track geometry and alignment (i.e. is the track straight or curved?);
- ii. the existence of switches or junctions;
- iii. track speed, including any potential or anticipated changes to the track speed;
- iv. derailment history of the site and of other sites similar in nature;
- v. current and future estimated usage and growth in patronage (10-year horizon);

## Appendix 5

### DEVELOPMENT GUIDELINES NEAR RAILWAY OPERATIONS

- vi. details of any future/planned corridor upgrades/ works, or any protection of the corridor for future expansion, where no plans are in existence; and
- vii. topography of the track (i.e. is it in a cut, on an embankment, or at grade?).

#### A-5.4 Information about the development

Details of the development itself, including its design and operational components, are important in understanding whether the building has been designed to withstand potential conflicts as a result of the railway corridor, as well as ensuring that the new development will not pose any adverse impacts upon the railway operations and infrastructure. At a minimum, the following information must be provided:

- i. proximity of the proposed development to the railway corridor or other railway infrastructure;
- ii. clearances and setbacks of the proposed development to the railway corridor; and
- iii. any collision protection features proposed for the new development, to protect it in the case of a train derailment.

#### A-5.5 Information about the construction

While it is understood that construction details will not be finalized at the development application stage, there are a number of impacts associated with construction on a site in proximity to a railway corridor that need to be considered prior to development approval. At a minimum, the following information must be provided:

- i. corridor encroachment - provide details with regard to:
  - a. whether access to the railway corridor will be required;
  - b. whether any materials will be lifted over the railway corridor;
  - c. whether any temporary vehicle-crossing or access points are required; and
  - d. whether there will be any disruption to services or other railway operations as a result of construction;

Generally, encroachment within a railway corridor for construction purposes is not permitted and alternative construction options will need to be identified.

- i. provide details of how the security of the railway corridor will be maintained during construction, (i.e. by providing details about the type and height of security fencing to be used);
- ii. provide details of any planned demolition, excavation and retaining works within 30 metres of the railway corridor and specify the type and quantity of works to be undertaken;
- iii. services and utilities - provide details of:
  - a. whether any services or utilities will be required to cross the railway corridor; and
  - b. whether any existing railway services/ utilities will be interfered with; and
- iv. stormwater, drainage, sediment, and erosion control - provide details of how any temporary stormwater and drainage will operate during construction, and how sediment and erosion control will be managed.

## Appendix 5

# DEVELOPMENT GUIDELINES NEAR RAILWAY OPERATIONS

### A-5.6 Determination of hazards and risks

Once details unique to the site, railway corridor, development design, and construction have been determined, the individual risks must be identified and evaluated with individual mitigation measures planned for each. Such risks may include injury or loss of life and damage to public and private infrastructure. At a minimum, consideration must be given to:

- i. the safety of people occupying the development and the potential for the loss of life in the event of a train derailment;
- ii. potential structural damage to the proposed development resulting from a collision by a derailed train; and
- iii. the ability of trespassers to enter into the railway corridor.

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<sup>1</sup> *The Federation of Canadian Municipalities and The Railway Association of Canada, Guidelines for New Development in Proximity to Railway Operations, 2013*