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FALCO GROUP – REINDERS LAW, ARCHITECTURE,
ENGINEERING

Development Viability Assessment – 264 Victoria Street North, Kitchener, Ontario

Final Report



December 2023 – 23-6167



December 15, 2023

Falco Group
Represented by Reinders Law, Architecture, Engineering
64 Ontario Street North
Milton, Ontario
L9T 2T1

Attention: Kyle Reinders

*Development Viability Assessment of Falco Group Mixed Use Development
At 236-264 Victoria Street North, Kitchener, Ontario*

Dear Mr. Reinders,

At the request of Reinders Law, Architecture, Engineering, Dillon Consulting Limited, (Dillon) was asked to provide a development viability assessment for the above-mentioned proposed development. Our findings are documented in this report for your consideration.

If you have any questions, please contact Lynn Gagnon at 403.215.8889 or at lgagnon@dillon.ca.

Sincerely,

DILLON CONSULTING LIMITED

A handwritten signature in blue ink, appearing to read "Lynn Gagnon".

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Project Manager

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Senior Risk Specialist

TS:tjs

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A Metrolinx Correspondence

Definitions

Carloads Originated – A carloads originated is one which is loaded and begins its journey on a particular railroad.

Dangerous Goods (DG) Leaker – A leak of a dangerous goods substance, usually from a faulty or damaged valve on a dangerous goods rail car.

Dangerous Goods (DG) Release – Loss of control over a dangerous good in transportation.

Derailment – Any instance where one or more wheels of rolling stock have come off the normal running surface of the rail.

Gross Ton-Mile – The movement of total train weight over a distance of one mile. Total train weight is comprised of the freight cars, their contents, and any inactive locomotives. It excludes the weight of the locomotives pulling the trains.

Hazard – A chemical, physical, social, or political condition that has the potential to cause damage or any kind of harm to people, property, environment or business continuity.

Inherent Risk:

A risk which is impossible to manage or transfer away is said to be an inherent risk; and
The risk that exists when no controls have been put in place.

Main-track accident – Accident which occur on main-track or spurs (not including crossing accidents, trespasser accidents, and non-main-track collisions and derailments).

Non-main-track accidents – Accident which occur on any rail track other than main-track and spurs. Yard tracks are designated non-main tracks.

Risk – The chance of injury or loss, measured as the probability and severity of an adverse effect on health, property, the environment, or other things of value. "Risk" is a way of expressing damage to a receptor due to a hazard, considering both the likelihood and magnitude of damage. The concept of risk includes four components:

- Hazard inherent in an activity;
- Consequence of an undesirable event;
- Likelihood that an undesirable event will occur; and
- Perception about the combined importance of the first three.

Risk = Likelihood of undesirable event x Consequences of that event

Risk Assessment – A process for making quantitative and/or qualitative assessment, analysis and evaluation of risks and hazards.

Train-Mile – The movement of a train the distance of one mile.

Introduction

Falco Group is proposing a residential development (herein called Proposed Development) located at 236-264 Victoria Street North, in Kitchener, Ontario (herein called the Property) which will consist of:

- One level of underground parking;
- A 4-storey podium connected to a 6-storey podium, both consisting of parking, mixed use commercial and residential occupancy, and open space;
- One Tower (Tower A) with residential units from floors 5 through 40 inclusive;
- One Tower (Tower B) with residential units from floors 5 through 35 inclusive; and
- One Midtower with residential units from floors 5 through 18 inclusive.

The Proposed Development is located within proximity (30 m) of active freight rail operations conducted by Metrolinx, VIA Rail and Canadian National (CN) on the Metrolinx Guelph Subdivision, approximately 390 m east of CN Kitchener Yard and approximately 220 m west of CN spur tracks and GO Transit/Via Rail Kitchener Station. Given the proximity of the Proposed Development to both freight rail operations and intercity/commuter passenger rail services, Falco Group was instructed to demonstrate that the Proposed Development meets the Federation of Canadian Municipalities Rail Proximity Guidelines (FCM Guidelines) and have a Development Viability Assessment (DVA) completed for the Proposed Development, as detailed in Appendix A of the FCM Guidelines. Further, Metrolinx requested the Proposed Development undergoes a rail safety study according to the “Metrolinx Adjacent Development Guidelines – GO Transit Heavy Rail Corridors” (Metrolinx Guidelines) in order to obtain Metrolinx permit/approval for the Proposed Development to proceed.

The goal of the DVA is to demonstrate that the risks associated with the Proposed Development are:

- Recognized;
- Understood; and
- Mitigated, such that it does not impede current and future rail operations, and it addresses public safety issues.

As such, Dillon Consulting Limited (herein referred to as Dillon or “team”) was retained to complete the DVA, focusing on environmental risks, health and safety risks to the public and operational risks to CN, VIA Rail, and Metrolinx. The risks, including physical and chemical hazards, will be evaluated during construction between 2024 and 2026 and at full occupancy from the Year 2026 to 2036.

Section 2.0 of the report summarizes the project setting, which includes details of the Proposed Development including during construction and at full occupancy, description of the parcels including topographic details and site drainage and an overview of the rail infrastructure and traffic adjacent to the Proposed Development. Details of the DVA methodology, analysis and findings are presented in **Sections 3.0** and 4.0 of the report, with conclusions and recommendations provided in **Section 0**.

1.1 Assumptions

Information was obtained from the following sources to complete the analysis in this report:

- Railway operations and regulatory subject matter experts;
- Publicly available databases, documents and records; and
- Information provided by Reinders Law, Architecture, Engineering, CN, Metrolinx and VIA Rail.

1.2 Development Viability Assessment (DVA) Team

Dillon's project team has extensive experience across Canada working with developers, Class 1 Railways (e.g., CP) and municipalities to address rail proximity issues associated with various types of land development. This includes not only conducting property specific DVAs, but also supporting the development of a new land use policy for developments adjacent to rail corridors.

Credentials of the key project team members are provided below.

Dave Poole, M.Sc., P.Eng. (Ab, Mb), CRM – Technical Rail Risk Expert

Dave is a Partner at Dillon with over 25 years of experience conducting risk assessments, due diligence assessments and strategic advisory services. He is a Certified Risk Manager (CRM) through the Global Risk Management Institute and has extensive experience advising the railway industry, municipalities and developers on the risks, developing frameworks and management plans related to rail operations and proximity issues in Canada and the United States. Most recently, for the Virerra Village development in Kitchener, he completed the DVA in 2019 and was a rail proximity and risk expert witness at the September 2020 LPAT hearing.

Lynn Gagnon, BSocSc, CRM – Project Manager

Lynn is a Project Manager, Risk Specialist and Engagement Specialist at Dillon, with over 12 years of professional experience. In the past eight years at Dillon, Lynn has worked on multiple projects in the rail industry examining risks in rail from operational changes to developments adjacent to rail. Lynn was a core member of the team that developed the rail proximity framework for the City of Calgary and led the development of a similar framework for the Town of Canmore.

Audrey Lebel Désorcy, B.B.A., PMP – Technical Expert

Audrey Lebel Désorcy is an Associate at Dillon with a Bachelor's degree in Business Administration and over 13 years of project management, risk management, research and data analysis, and municipal permitting experience. Since 2012, Audrey has been working with CP on risk assessment projects for a variety of proposed development at proximity to rail (crude oil transload facilities, rail crossings, commercial development, municipal infrastructure, etc.). Most recently, she was the project manager for multiple DVA projects in Manitoba and Ontario including the Virerra Village DVA in Kitchener, Ontario. She also worked on the evaluation of risk, needs and suitability study for the proposed grade

level crossing of CP's Winnipeg Beach Subdivision in the RM of West St. Paul and the emergency access evaluation of proposed development in the former Canada Packer's land in Winnipeg, Manitoba.

1.3 Limitations

The data utilized for the risk assessment included data from various sources, as outlined throughout the report. Although the data has been utilized in many risk assessments, there may be errors and omissions of which the authors are unaware and which may lead to variations in the frequencies.

2.0

Project Setting

2.1 Proposed Development

2.1.1 Overview

The Proposed Development is located on land bounded by Victoria Street North, Margaret Avenue and St Leger Street in Kitchener, Ontario (see Figure 1 and Figure 3) within proximity of the Guelph Subdivision, CN Kitchener Yard, spur tracks and a GO Transit/VIA Rail station. It is our understanding that the Proposed Development will consist of (Figure 2 and Figure 3):

- One level of underground parking;
- A 4-storey podium connected to a 6-storey podium, both consisting of parking, mixed use commercial and residential occupancy, and open space;
- One Tower (Tower A) with residential units from floors 5 through 40 inclusive;
- One Tower (Tower B) with residential units from floors 5 through 35 inclusive; and
- One Midtower with residential units from floors 5 through 18 inclusive.

The façade of the Proposed Development facing the Guelph Subdivision is approximately 7 m from mutual property line with the Subdivision. The CN Kitchener Yard is approximately 390 m east from the Proposed Development and extends to 1.2 km from the Proposed Development. Spur tracks are located approximately 225 m west from the Proposed Development. The GO Transit/VIA Rail Station is located approximately 390 m west from the Proposed Development. For discussion purposes, “North” is designated towards Breithaupt Street as shown on Figure 1.

2.1.2 Site Environmental Setting

The local topography within proximity of the Proposed Development is relatively flat. According to the survey plans provided and the Google Earth elevation profile of the study area, the rail tracks are in the 333 m above sea level range, while the Proposed Development parcel sits in the 334 m range on the east side of the property and the 340 m range on the west side. There is no apparent ditch that runs along the rail tracks. A retaining wall will separate the Proposed Development site from the rail property.

Using Google Maps, Streetscape function, at the corner of Victoria Street and Margaret Avenue (i.e. southwest corner of the Proposed Development), Margaret Avenue is grade separated from the Guelph Subdivision – see Figure 4. St. Leger Street (i.e. east of the Proposed Development), intersects with the Guelph Subdivision right-of-way via a grade crossing equipped with flashing lights, bells, gates (or FLBG system) that extends across each side of the roadway, but not the pedestrian walkways, at MP 62.26– see Figure 5.



Figure 1: Proposed Development Location and Rail Context



Figure 2: Architectural Rendering – Looking Southeast

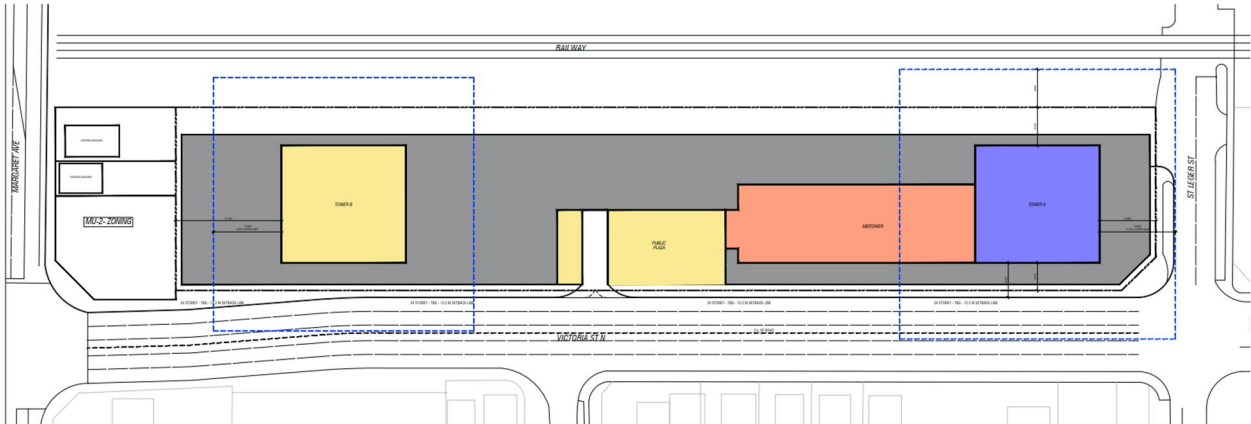


Figure 3: Site Plan of the Proposed Development Provided by Renders Law, Architecture, Engineering



Figure 4: Looking Towards Guelph Subdivision at Corner of Victoria Street North and Margaret Avenue, West of the Proposed Development



Figure 5: Looking Towards Guelph Subdivision from St Leger Street, East of the Proposed Development

2.1.3

Construction and Development Details

The Proposed Development will be built in two phases including the demolition of existing infrastructures on the Proposed Development site, beginning in fall 2024 with occupancy expected in spring 2026. All earthworks will take place within the property lines of the Proposed Development. It is assumed one or more stationary tower cranes will be used, such as the one shown in Figure 6¹.

According to the reference, the maximum boom length for a tower crane is 60 m. Given that the Proposed Development is 7 m from the rail property line, the boom may swing onto rail property.

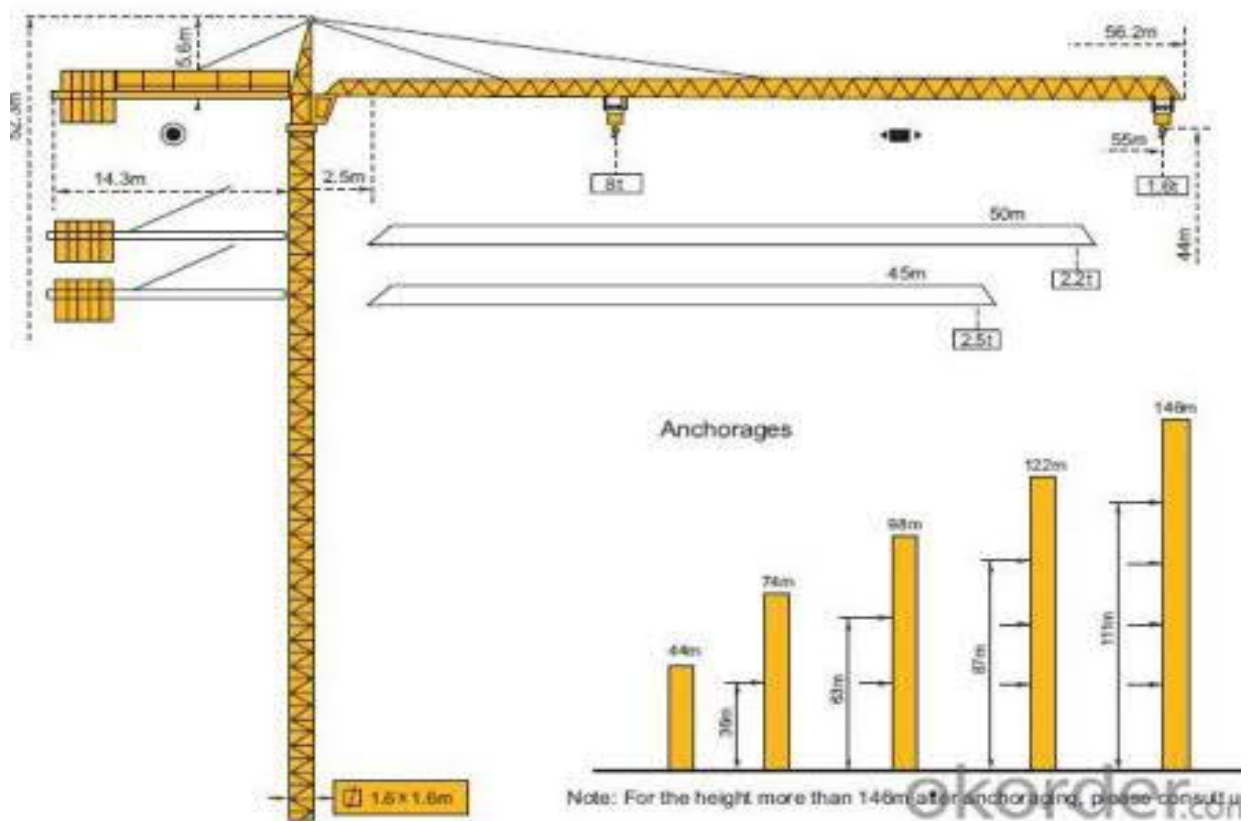


Figure 6: Example Tower Crane

As shown in Figure 7, vehicle access to the Proposed Development will be at the mid-block point along the property line off Victoria and at the northeast corner of the property off St. Leger Streets. Pedestrian access to the Proposed Development will be primarily along the south property line at various points off Victoria Street. It is noted that Margaret Avenue is grade separated from the Guelph Subdivision, and there is a grade vehicular separated crossing (vehicular, cycling and pedestrian) as well as a pedestrian grade crossing at St. Leger Street.

¹ Source: <https://www.gruasyaparejos.com/en/tower-crane/tower-crane-dimensions/>

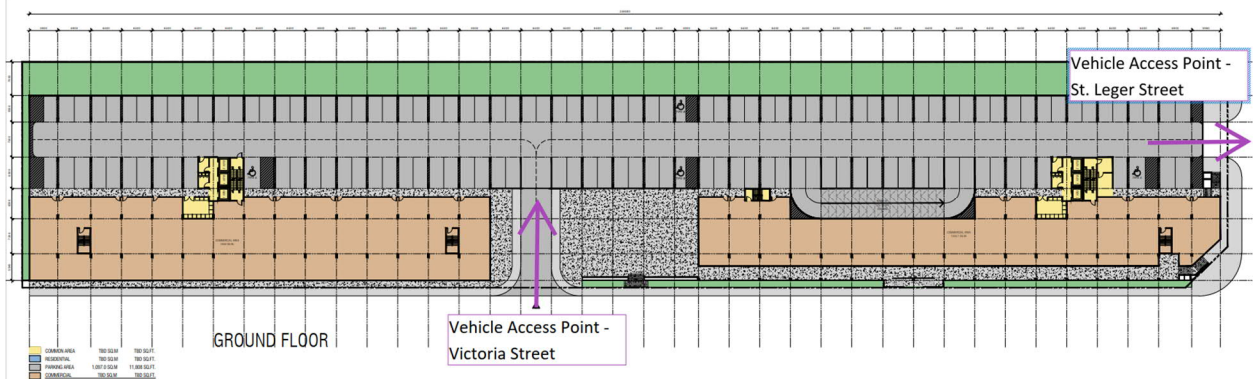


Figure 7: Vehicle Ingress/Egress Points

A concrete retaining wall, a board fence and a chain link fence are included in the Proposed Development design. They will be located at the rear property line along the property line with the Guelph Subdivision. The board fence will also extend continuously along the west property line.

2.2 Railway Details

2.2.1 Rail Operations

The Proposed Development is located adjacent to the Guelph Subdivision between MP 62.26 and MP 62.42 . It is also in proximity of Kitchener spur tracks and Rail Yard (see Figure 8), and the GO Transit/VIA Rail Station at MP 62.7. To obtain a site-specific understanding and confirmation of current and future rail operations, Dillon submitted an information request to CN on June 23, 2023 with no response at the time of this report's completion.

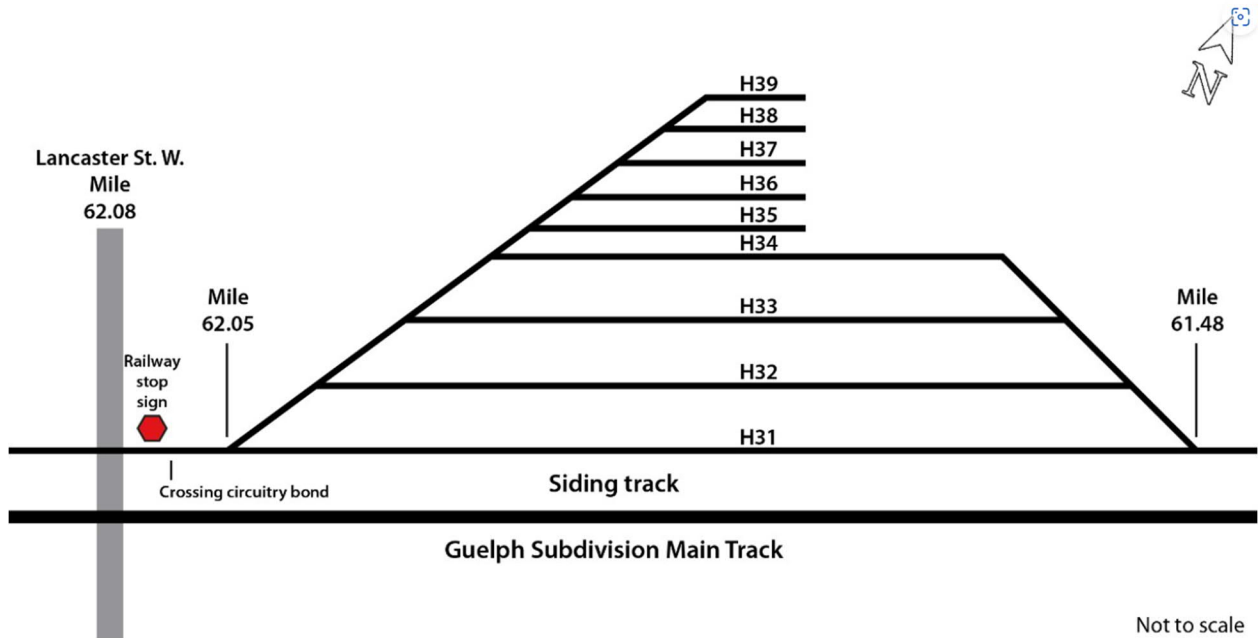


Figure 8: Schematic of CN Kitchener Yard Located East of the Proposed Development near Lancaster Street West Crossing²

According to the Railway Association of Canada (RAC) Rail Atlas³, the Guelph Subdivision consists of two tracks that are each designated for both freight and passenger rail operations, as shown in Figure 9. Dillon estimated that the Kitchener Yard and the spur tracks near the Proposed Development site have a combined total of approximately 193 freight train car capacity.

Dillon also submitted a request for information to Metrolinx on June 26, 2023, to understand current and future Metrolinx rail operations. Metrolinx is in the process of expanding and improving its network to offer more services with faster trains in the Greater Toronto and Hamilton Area (GTHA), including between Union Station in Toronto and Kitchener. Once these improvements are in place, GO Transit trains are expected to run two-ways every 30 minutes during peak hours between Georgetown and Kitchener Stations, and every 60 minutes during off-peak hours⁴.

Metrolinx responded to our request on July 18, 2023 (see Appendix B). Metrolinx anticipates that, on a typical weekday, 99 GO Transit trains (both revenue and equipment trips) will circulate near the Proposed Development once the expansion is completed. Metrolinx acknowledged that this forecast

² Source: [Rail transportation safety investigation report R19T0191 - Transportation Safety Board of Canada \(tsb.gc.ca\)](https://www.tsb.gc.ca/eng/rapports-reports/accidents/incidents/2019/20190191-eng.html)

³ Source: <https://rac.jmaponline.net/canadianrailatlas/>

⁴ <https://www.metrolinx.com/en/news/first-phase-of-work-to-expand-kitchener-go-line-service-begins>

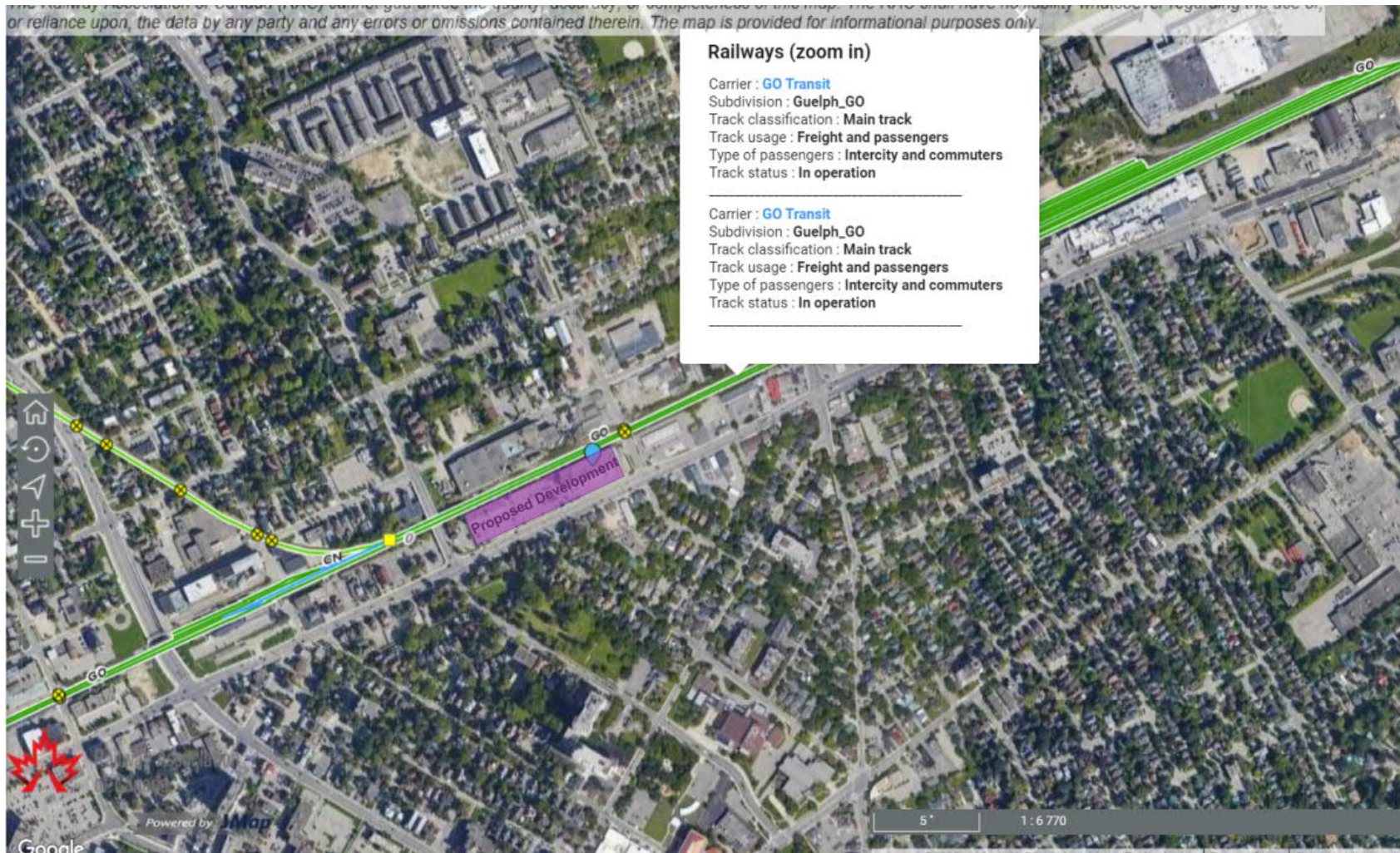


Figure 9: Canadian Rail Atlas - Guelph Subdivision Adjacent to the Proposed Development Property

may be influenced by various factors such as passenger demand, funding, service planning priorities and operational considerations.

On its website, Metrolinx claims that trains will operate at speed of up to 140 km/h on the Kitchener line once the expansion is operational; however, given the urban localisation of the Proposed Development and its proximity to a GO Transit/VIA Rail station, a Rail Yard, and a grade level crossing, it is unlikely that such speed will be achieved within the study area. Moreover, there is a permanent slow order between MP 61.8 and MP 63.52, between which the study area is located, that limits passenger trains and freight train speeds to 30 mph in preparation for a stop at the Kitchener GO Transit station, therefore the speed of GO Transit trains should not exceed 30 mph once the Kitchener Expansion Project will be completed in 2025. Metrolinx confirmed the track design speed limit of 30 mph near the proposed Development in its July 18, 2023, communication – see Appendix B.

Based on referenced sources of information combined with professional experience and judgement, a summary of pertinent information utilized within the DVA are summarized below:

- Freight and passenger/commuter rail traffic operate on two tracks within the Guelph Subdivision in proximity of the Proposed Development. The Guelph Subdivision meets the definition of a “Principle Main Line” in accordance with the FCM Guidelines;
- The Transportation Safety Board (TSB) designates the Guelph Subdivision as a “Main Track” for tracking of rail accidents on this subdivision;
- Eight freight trains proceed on the Guelph Subdivision adjacent to the Proposed Development every day;
- Combining both Metrolinx and VIA Rail traffic, current daily passenger and commuter train traffic volumes within the study area along the Guelph Subdivision consists of 19 trains per day;
- Metrolinx anticipates that, on a typical weekday, 99 GO Transit trains will run on the Guelph Subdivision adjacent to the Proposed Development once the Metrolinx Kitchener expansion project is operational;
- There is a permanent slow order between MP 61.8 and MP 63.52 that limits passenger trains and freight train speeds to 30 mph in preparation for a stop at the Kitchener GO Transit station, zone within which the Proposed Development site is located⁵;
- One switch is located on the main tracks in front of the Proposed Development site;
- Rail gauge is 286,000 lbs.⁶;
- Operations expected at the Kitchener Yard include sorting and storage of rail cars. According to the CN website, there are currently no distribution centres, rail development sites, grain elevators or automotive facilities identified at Kitchener Yard. However, it is anticipated that transloading of commodities on a case-by-case basis can occur;

⁵ Source : <https://www.tsb.gc.ca/eng/rapports-reports/rail/2019/r19t0191/r19t0191.html>

⁶ Source : <https://cnebusiness.geomapguide.ca/?MAP=WL>

- It is estimated that the Kitchener Rail Yard and spurs have a capacity of 192 freight train cars, which are potentially switched once per day;
- According to the TSB data, it is assumed that the posted speed limit within the Kitchener Yard and the spurs is 15 mph; and
- Kitchener Yard is not a designated maintenance facility for locomotives, but spot repairs of rolling stock can occur.

2.3 Transportation Safety Board Rail Occurrences

Within the Transportation Safety Board (TSB) Rail Occurrence Database, all rail accidents between MP61 and 63 of the Guelph Subdivision between January 1, 1984 and December 31, 2022 were reviewed and summarized in Table 1 and Table 2. It should be noted that there is an existing grade level crossing within 100 m of the Proposed Development, right adjacent to the Proposed Development on St. Leger Street on the east (MP 62.26). A second-grade crossing is located one block east of the Proposed Development where Lancaster Street West intersects with the Guelph Subdivision at MP 62.08. “Crossing” accidents from these two crossing locations were included in Table 1.

According to the data presented in Table 1, crossing and trespassing accounted for a total of nine accidents, resulting in three fatalities and four serious injuries.

There has never been a crossing accident at the grade crossing directly adjacent to the Proposed Development, at MP 62.26. The crossing fatality, indicated in Table 1 occurred at Lancaster Street grade crossing, located one block east of the Proposed Development. It needs to be mentioned that Lancaster grade crossing differs from St. Leger crossing in terms of traffic. Lancaster Street is a four-lane roadway where it is not uncommon to see vehicles queuing from the Lancaster Street West-Victoria Street North intersection onto the crossing⁷. Lancaster crossing has approximately 15,000 vehicles crossing daily⁸. Due to the proximity of the Lancaster crossing to the Kitchener Yard, the crossing is frequently occupied by CN freight trains and it is not uncommon to have two trains near or onto the crossing at the same time. Rail traffic and long wait times can contribute to restless behaviours and influence decision to cross against active crossing warnings. St. Leger Street is a two-lane roadway with approximately 2,000 vehicles per day⁹, that is located further away from the Kitchener Rail Yard, but that can often be activated by rail activities from the Rail Yard and the spurs located on the west of the Proposed Development.

Table 1 also indicates that there were four trespassing occurrences recorded, including one fatality in close proximity of the Proposed Development at MP 62.25. The three other trespassing accidents

⁷ Source : <https://www.tsb.gc.ca/eng/rapports-reports/rail/2019/r19t0191/r19t0191.html>

⁸ Source : <https://tc-tdg.maps.arcgis.com/apps/webappviewer/index.html?id=a540c1fa8c6146e0a6ed4fb39dde34a5>

⁹ Source : <https://tc-tdg.maps.arcgis.com/apps/webappviewer/index.html?id=a540c1fa8c6146e0a6ed4fb39dde34a5>

occurred at MP 61 and MP 62.7, which are relatively far from the Proposed Development site. No main-track train derailment has been recorded in the study area between 1984 and 2022.

Table 2 shows that non-main-track derailment accidents represent the majority of accidents that occurred on the Rail Yard and spurs between MP 61 and 63, with 23 accidents recorded between 1993 and 2022. Of these non-main-track derailments, 13 occurred during switching activities, four occurred while trains were proceeding on spur tracks, and six resulted from uncontrolled movements (e.g., break release or failure). None of these derailments occurred in front of the Proposed Development and no fatalities, serious injuries and evacuations resulted from these accidents. The accident that was the closest to the Proposed Development site was a collision of a train, at MP 62.5, with a piece of old rail foul of the track on a spur track west of the Proposed Development; there was no fatality, no injury and no evacuation resulting from the accident.

Table 1: TSB Rail Occurrences on Guelph Subdivision Main Tracks and Crossings

Accident Type	Number of Accidents	Number of Fatal Injuries	Number of Serious Injuries	Number of Evacuation	Milepost Range	Time Span
Trespasser	4	2	2	0	61 62.7	1996 2018
Crossing at Lancaster Street West MP 62.08	5	1	2	0	62.08	1986 2019
Crossing Adjacent to the Proposed Development at MP 62.26	0	-	-	-	-	-
Main-Track Train Derailment	0	-	-	-	-	-
Total	9	3	4	0	-	-

Note. Other crossing incidents other than those at MP 62.08 and 62.26 between MP 61 and 63 have been excluded from the table as they are not relevant to our study area

Table 2: TSB Rail Occurrences within Kitchener Yard and Spurs

Accident Type	Number of Accidents	Number of Fatal Injuries	Number of Serious Injuries	Number of Evacuation	Milepost Range	Time Span
Non-Main-Track Train Derailment	23	0	0	0	61.4 62.7	1993 2022
Non-Main-Track Train Collision	1	0	0	0	62.5	1993
Fire	1	0	0	0	62.7	2014
R/S Coll. With Object	1	0	0	0	62.45	2019
Total	26	0	0	0		

Note: The "Main-Track" designated accidents occurred along the Guelph Subdivision, while the "Non-Main Track" designated accidents occurred on spurs of the Guelph Subdivision. R/S refers to Rolling Stock.

Accident locations that are the most relevant to the Proposed Development are presented in Figure 10 below.



Figure 10: Locations of Rail Accidents in Close Proximity of the Proposed Development Based on the 1984-2022 TSB Data

The size of a train derailment, measured by the number of rail cars that derail, is linked to the speed of the train at the time of the derailment. The TSB Rail Occurrence database was analyzed between 2004 and 2022 to determine the yearly average number of rail cars that would derail per accident for the maximum train speeds on the Guelph Subdivision at 30 mph and the Kitchener Yard and spurs at 15 mph.

- At 30 mph, a freight train derailment will result in an average of eight cars derailed;
- At 15 mph, a freight train derailment will result in an average of four cars derailed; and
- At 30 mph, a passenger train derailment will result in an average of three passenger cars derailed.

2.3.1

Rail Traffic Forecasting

CN has previously stated, in 2021, that ***“for the purpose of noise and vibration reports, train volumes must be escalated by 2.5% per annum for a 10-year period.”*** This threshold was compared to growth projections for train traffic using an economic model developed by Dillon that correlates rail traffic to

gross domestic product, as shown in Figure 11. With construction starting year of 2024 with an estimated 10-year time frame, the projected increase in train traffic (as a function of tonnage of goods hauled) to the end of year 2034 is approximately 31 % (using Billion Gross Ton-Miles (BGTM) forecast)) – or 3 % per annum. As such, for the DVA, the train traffic growth projections based on the economic model were used to forecast future freight train traffic.

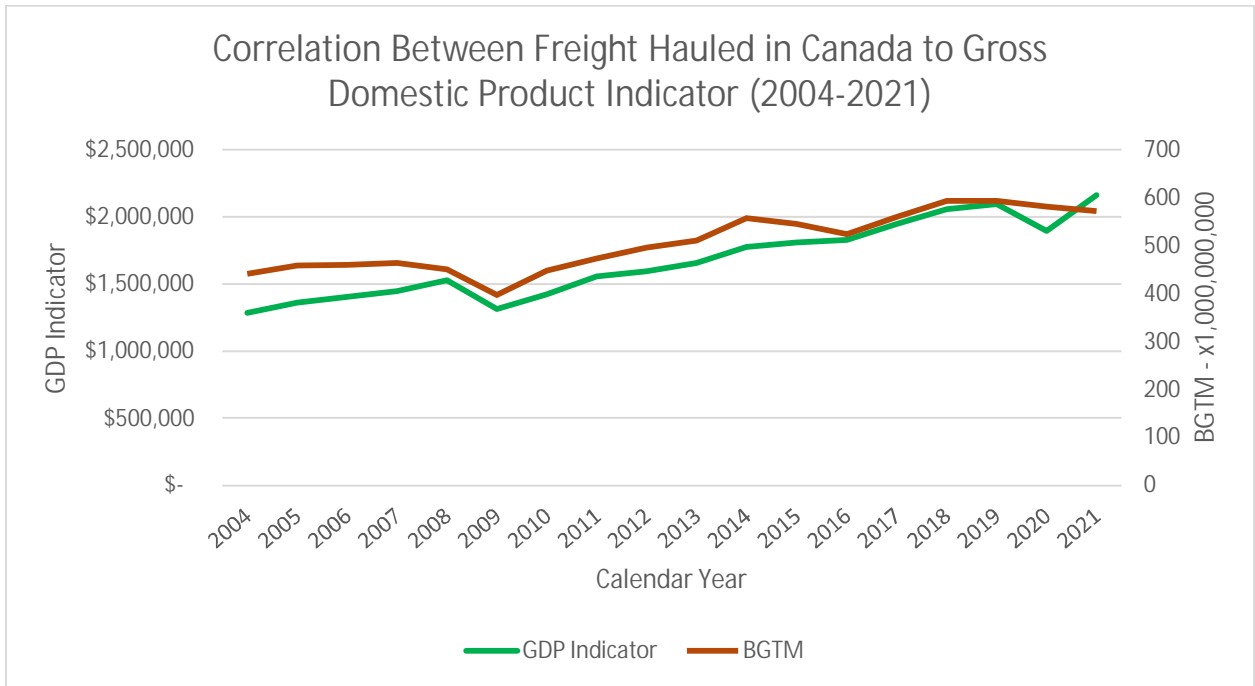


Figure 11: Canadian Freight Rail Forecast Model

The VIA Rail train traffic is reported as Intercity traffic within the annual Rail Trends reports published by the RAC, and were analyzed between 2003 and 2019 (2020 and 2021 being excluded from the analysis due to the impact of the COVID-19 pandemic on passenger transit), specifically the number of Intercity Train-Miles, as shown in Figure 12.

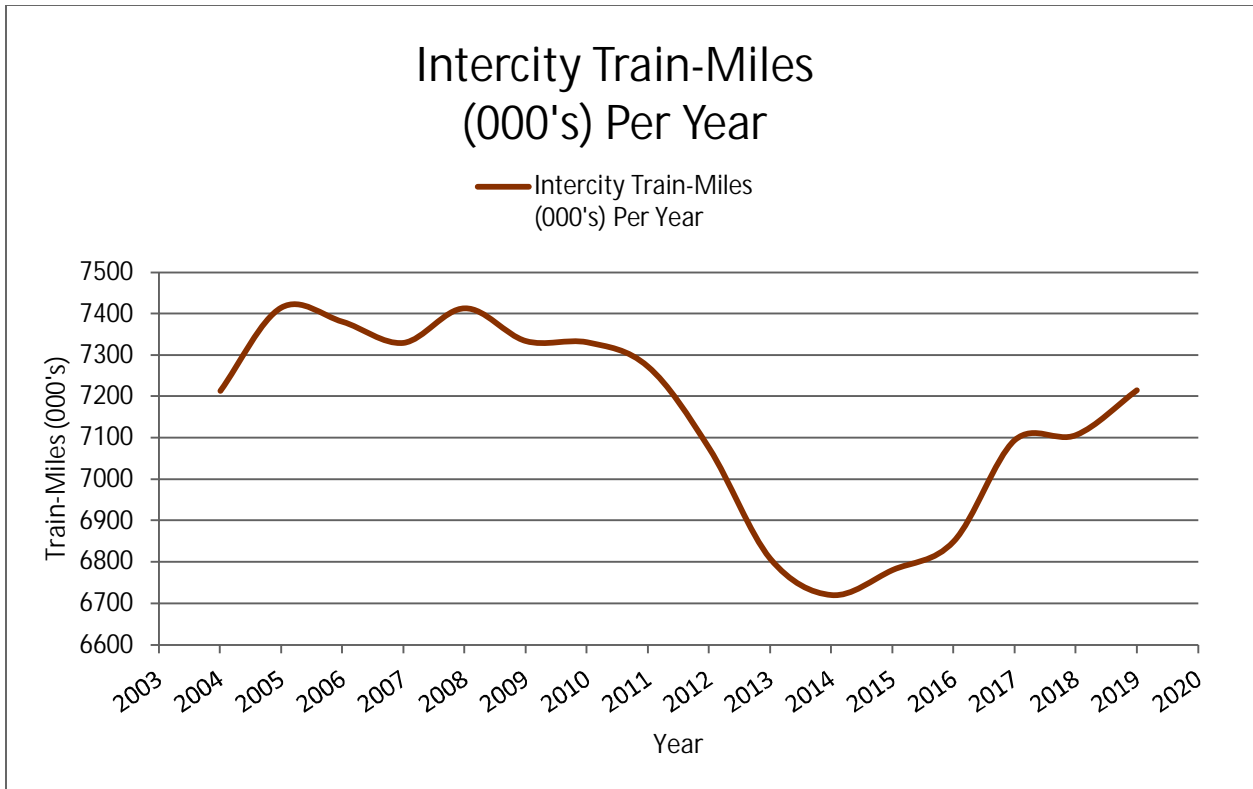


Figure 12: Intercity Passenger Rail Traffic Volumes in Canada - 2003 to 2019

A linear regression analysis of the time period between 2014 and 2019 was completed, that reflects the current growth of Intercity Train traffic in Canada, which was downscaled to the Guelph Subdivision based on the current passenger train traffic reported in CN (2021). This translates to the number of passenger (VIA Rail) trains per day increasing to 3 starting in 2026.

As indicated in **Section 2.2.1**, GO Transit future traffic data was provided by Metrolinx who estimates the typical weekday traffic to be of 99 trains, both revenue and equipment trips, in the study area once the expansion project completed (see Appendix B).

2.4 FCM and Metrolinx Guidelines

The FCM and Metrolinx have established guidelines to communicate relevant information to parties interested in undertaking development projects adjacent to railway operations. Metrolinx Guidelines were developed based on the FCM guidelines but differ from them in some aspects reviewed in the following subsections. Given that the Guelph Subdivision meets the definition of a “Principle Main Line”, the Kitchener Yard meets the definition of a “Freight Rail Yard”, the spur tracks meet the definition of “spur line”, and the GO Transit corridor meets the definition of “heavy rail corridor”; the following requirements within the FCM and Metrolinx Guidelines were identified. It should be noted that any deviation from the identified requirements would be taken into consideration within the DVA.

2.4.1 Building Setbacks

The FCM recommends minimum building setback for new residential development adjacent to a Principal Main Line of 30 m, measured from the mutual property line to the building face. For a Freight Rail Yard, it is 300 m, and for spur tracks it is 15 m.

The setback distances are measured from the mutual property line to ensure the entire railway property is protected for potential future rail expansion. Appropriate uses within the setback area include roads, parkland and other outdoor recreational spaces, unenclosed gazebos, garages and other parking structures and storage sheds. Additional details can be found in Section 3.3 on the FCM Guidelines.

Metrolinx recommended setbacks are similar to the setbacks recommended by the FCM except that Metrolinx only requires a 15 m setback for low occupancy industrial developments. Additional details can be found in Section 5.1.1 on the Metrolinx Guidelines.

2.4.2 Earthen Berm

The FCM recommends a 2 m above grade berm must be constructed within the setback, with side slopes not steeper than 2.5 to 1. Metrolinx requires a 2.5 m berm constructed at a 2.5:1 slope with a 1 m crest for lands within up to 120 m from the rail corridor. The berm height can be reduced to 2 m for low occupancy industrial developments. The earthen berm is to be located along the shared property line within the building setback. Additional details can be found in Section 3.6 on the FCM Guidelines and Section 5.1.2 on the Metrolinx Guidelines.

2.4.3 Security Fencing

The FCM requires residential developments to include a 1.83 m high chain link fence along the entire mutual property line, to be constructed by the owner entirely on private property. Other materials may also be considered, in consultation with the relevant railway and the municipality. Metrolinx requires a 2.4 m high security fence installed at 4 inches distance from the property line to ensure all material is located on the development property. Additional details can be found in Section 3.7 on the FCM Guidelines and Section 5.2.1 on the Metrolinx Guidelines.

2.4.4 Stormwater Management and Drainage

Stormwater management and drainage infrastructure proposed with the Development should not adversely impact the function, operation or maintenance of the corridor, or should not adversely affect area development. Additional details can be found in Section 3.8 on the FCM Guidelines and Section 5.3.2 on the Metrolinx Guidelines.

Additional guidelines for noise and vibration might be applicable as per Sections 3.4 and 3.5 of the FCM Guidelines, and 5.3.1 of the Metrolinx Guidelines. This DVA focuses on safety and therefore noise and vibration will not be discussed.

Applicability of FCM and Metrolinx Guidelines to the Proposed Development

The applicability of the FCM and Metrolinx Guidelines to the Proposed Development is summarized below:

- A mutual property line between the Proposed Development and the Guelph Subdivision exists;
- The Proposed Development is <30 m from the Guelph Subdivision (see Figure 1 and Figure 13);
- The Proposed Development is >300 m from the CN Kitchener Rail Yard; however, switching operations from the Yard can lead to rail cars being transported in front of the Proposed Development Property (see Figure 1); and
- The proposed development is >15 m from spur tracks located near the Kitchener GO Transit/ VIA Rail Station (see Figure 1); however, switching operations from the spurs can lead to rail cars being transported in front of the Proposed Development Property.

Therefore, an earthen berm and security fencing are applicable to the Proposed Development and, therefore, there are deviations from the FCM and Metrolinx Guidelines that would be considered within the DVA. Stormwater management and drainage is applicable given that the northwest corner of the Proposed Development the elevation is 340.00 m, while the rail tracks are in the 333 m range, which can generate surface water runoff that could discharge towards the railway property. Switching activities and the locations of switches within 300 m of the Proposed Development were taken into consideration within the DVA.

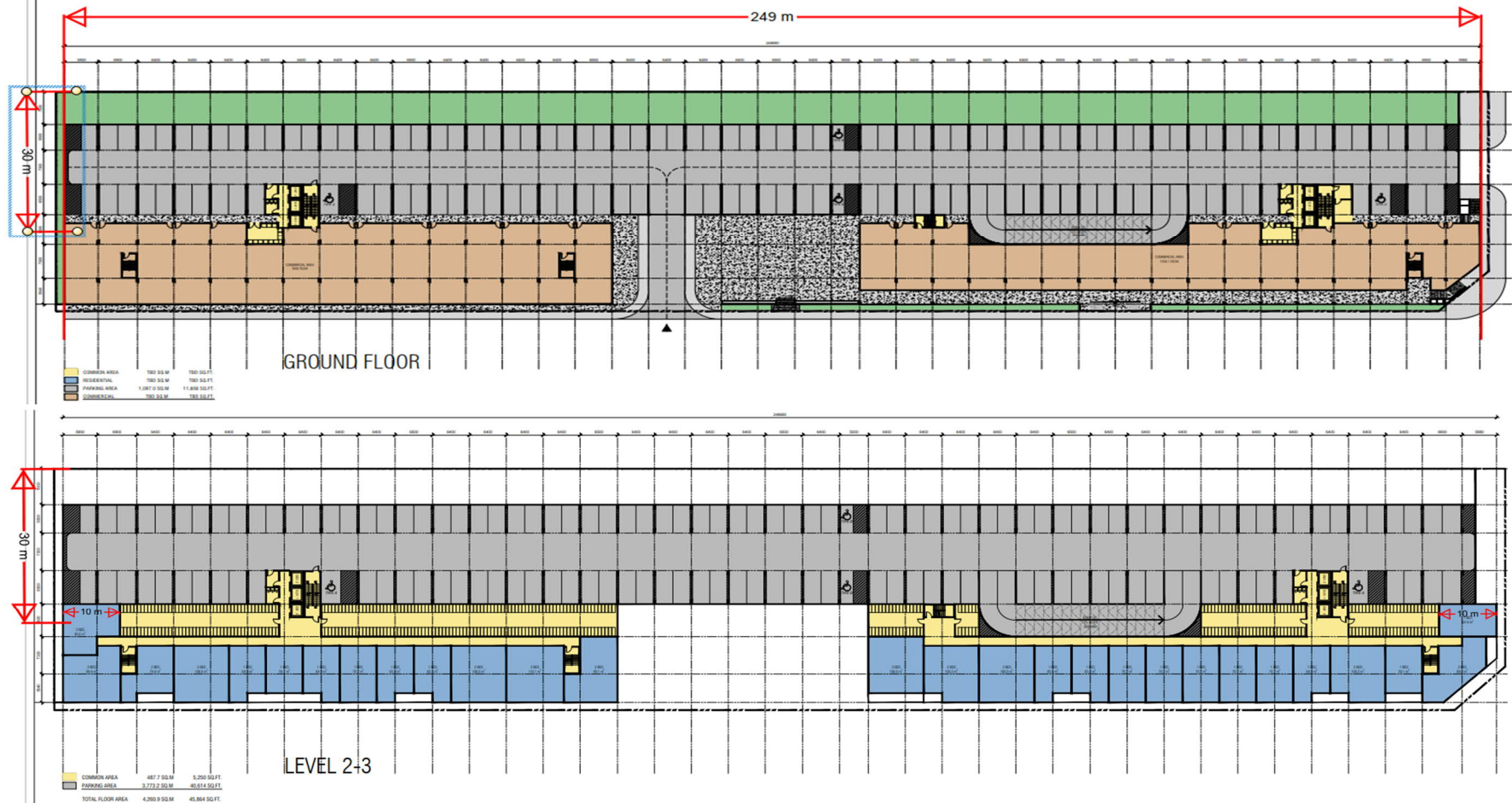


Figure 13: Site Plan of the Ground Floor (Top Figure) and Second (Bottom Figure) Levels of the Proposed Development Showing the Distance of the Building from the Mutual Property Line with the Guelph Subdivision – Parking, Commercial Spaces and Two Residential Units are within the 30 m Setback form Rail Operations

3.0 Scenario Development

In order to complete the risk assessment, credible scenarios need to be developed that take into consideration:

- Site Details;
- Railway Details; and
- Construction and Development Details.

Further details that rationalize the scenarios are provided below.

3.1 Scenarios – Site Details

The site details that were considered when developing credible “what-if” scenarios included existing site drainage patterns of the Property, topography and environmental setting. Based on our understanding of the site details for the Property, the following scenario was identified:

- Scenario 1 – Topography is such that there is a possible but limited risk of surface water runoff generated from within the Proposed Development towards the Guelph Subdivision. Given there is a shared property line and that the Proposed Development site has a higher elevation than the rail corridor, there is risk of sediment runoff during construction, although it is expected to be limited. Therefore, standard construction practices to limit sediment runoff during construction would be appropriate and no further risk analysis is deemed necessary. See Table 16 of **Section 0** for additional details.
- Scenario 2 – Encountering contaminated soils within proximity of the property line to the Guelph Subdivision during construction activities is considered a risk. No further risk analysis is deemed necessary and specific mitigation measures are identified in Table 16 of **Section 0**.

3.2 Scenarios – Railway Details

Due to the nature of rail operations that are taking place adjacent to the Proposed Development, the following scenarios were analyzed:

- Scenario 3 – Physical hazards due to a passenger/commuter or freight train derailment on the Guelph Subdivision including switching activities due to proximity of the Kitchener Yard (to the east) and nearby rail siding (to the west) that would impact the Proposed Development and cause one or more public fatalities.
- Scenario 4 – Chemical hazards due to the releases of Dangerous Goods (DG) from a train accident on the Guelph Subdivision, Rail Yard or spurs, or due to a leak of DG from railcars (DG Leaker) staged in the Kitchener Rail Yard and spurs that have the potential to cause a public fatality; therefore, requiring public evacuation of the Proposed Development.

3.2.1

Scenario 3 – Train Derailment Leading to Public Fatality

The public fatality risk for a development due to the physical hazards of a train derailment is evaluated using the concept called the Rail Proximity Envelope (RPE) as shown in Figure 14. The RPE reflects the areas of the Proposed Development that could be exposed to the physical hazards of a train derailment involving two or more derailed rail cars. It is 30 m setback from the property line and 7 m high. The 30 m distance reflects the length of the longest rail car that is typically utilized in Canada that would be involved in a jackknife type derailment.



Figure 14: Rail Proximity Envelope

As stated in **Section 2.4.5**, the Proposed Development is less than 30 m from the Guelph Subdivision;

therefore, there is a risk of a train derailment that would physically impact the Proposed Development, leading to one or more fatalities. As such, further risk analysis is deemed necessary and this scenario was brought forward in the analysis.

3.2.2

Scenario 4 – Dangerous Good Release or Leak Leading to Public Evacuation

Requirements of Section 113 and 114 of the *Canada Transportation Act* state that “Federal railways must, without delay, carry all traffic tendered by shippers”. This includes DG, which must be transported following the Transportation of Dangerous Goods Regulations. Therefore, the transportation of DG by rail is considered an inherent risk, as it cannot be avoided.

The primary activity at the Rail Yard and spurs is the exchange of rail cars, which necessitates from time to time the staging of rail cars. While the rail cars remain at the Rail Yard and spurs, there is a potential for DG leakers from DG rail cars which can escalate to requiring emergency services.

Due to the inherent risks posed by DG, we focused on the likelihood of evacuations related to DG releases and leaks, to determine the need for a rail-specific Emergency Response and Management Plan for the Proposed Development. The principle hazards of concern related to a DG release are smoke (due to a fire), as well as vapours/odours.

This scenario was applied to all rail operations along the Guelph Subdivision, as well as switching operations at the Kitchener spurs and Rail Yard that are within 1600 m of the Proposed Development during the following time frames:

Year 2024 to 2026: Construction of the Proposed Development and corresponding exposure to construction workers;

Year 2026 to 2036 – Occupancy of the Proposed Development and the corresponding exposure to residents, as well as workers that occupy commercial and retail space.

3.3 Scenarios – Construction and Development Details

During construction of the Development, the following scenarios were identified:

- Scenario 5 – Construction debris falling onto the rail tracks; worst-case scenario from a tower crane. As stated in **Section 2.1.3**, the boom from a tower crane at the Property will potentially extend onto the railway property. As such, mitigation measures must be in place should the construction phase require a tower crane that would have to swing overtop of the railway right-of-way. As a mitigation strategy, it is advisable to ensure clearance zones are not violated at all time during the development and to contact CN, Metrolinx, and VIA Rail in advance to ensure clearance zone requirements are met and to obtain permission from these parties to conduct any ground or air activities within the railway property. There should also be a plan in place between Rail operators and the Proponent highlighting the process and communication protocol to follow if equipment or debris falls onto the railway property. The construction work should not directly impact CN's operations; however, given the switching activities occurring near the Proposed Development, any impact to CN's operations can have a corresponding cascading effect on CN's operations. As such, it is recommended that the Proponent coordinate with CN on safety procedures prior to construction. Given that the Proposed Development will be constructed adjacent to the property line with the Guelph Subdivision, this can be a source of falling equipment and/or debris. As such, construction screening should be utilized to contain any fallen equipment/debris within the Property. No further analysis was deemed necessary for this scenario.
- Scenario 6 – Construction worker getting struck by passing train. Given there is a shared property line between the rail corridor and the Property, and the current lack of a continuous fence along the mutual property line, the potential for a construction worker to be unaware of rail operations or inadvertently enter the railway property is considered likely. To mitigate this risk, the installation of temporary fences during the construction phase is recommended. In addition, rail operations awareness training should be provided to all construction workers, and be included in any site-specific health and safety plan during construction. No further analysis was deemed necessary for this scenario.

During occupancy and usage of the Proposed Development, the following scenario was identified:

- Scenario 7 – Trespassing from the Proposed Development. Given that there will be an increase in population living within proximity of a railway corridor, and that there is a sport centre across the Guelph Subdivision, there is a corresponding increased risk of trespassing, especially if there are:
 - Specific ingress and/or egress points from the Proposed Development;
 - Unfenced or unsecured points along the property line; and
 - Insufficient pedestrian and cyclist access to existing rail crossing.

There is a shared property line between the Guelph Subdivision and the Proposed Development and a continuous board fence coupled with a chain link fence along the mutual property line between the two properties, which reduces the risk of trespassers originating from the Proposed Development entering the railway property. Further reducing the risk, the parking will be fully enclosed along the property line and there are suitable sidewalks and rail crossings on either side of the proposed development. There is a grade separated crossing at Margaret Avenue 40 m west of the Proposed Development and a grade crossing at St. Leger Street immediately to the east of the Proposed Development providing adequate access to pedestrian and cyclist travelling north.

Dillon recommends the Proponent to retain the board fence and the chain link fencing along the mutual property line and the board fence along the west property line in the Proposed Development design. The Proponent should consider including a fence along the east property line where applicable, to further discourage trespassing and only allow pedestrian access through the south side of the Proposed Development. Fencing along with the aforementioned features would provide sufficient mitigation measure in place to limit the risk of trespassing. It has to be mentioned that Metrolinx requires a 2.4 m high security fence¹⁰ along the mutual property line to mitigate the risk of trespassing, which is higher than the 1.83 m required by the FCM Guidelines. It is also recommended that “No Trespassing” signage be erected to remind pedestrians that they are not allowed along the Guelph Subdivision and that suitable rail crossing are accessible in close proximity.

In addition to the above, we recommend that behaviour patterns of occupants within the Proposed Development be monitored to determine if trespassing is occurring, combined with a proactive public safety communication such as Operations Lifesaver to advise people of the dangers of trespassing.

Given the proposed mitigation measures, no further risk analysis is deemed necessary. As such, the scenario was not brought forward to the risk assessment.

- Scenario 8 – Structural damage to the building due to train derailment. Given that the parking, commercial space and two residential units and parts of the primary structure of the Proposed Development fall within the 30 m of the RPE, there is the potential for a train derailment to impact one or more structural members, with a worst-case scenario being the progressive failure of the adjacent structures. For this scenario, Dillon recommends that the Proponent uses the expertise of registered professional structural engineers to conduct a Train Impact Structural Review. The analysis of the structure shall consider not only the specific structural members directly impacted by a train derailment but also the effect that this damage may have on connected or adjacent elements of the structure, leading to the potential for a progressive failure extending beyond the area directly affected by the impact. The Train Impact Structural

¹⁰ Metrolinx. (2023). *Metrolinx Adjacent Development Guidelines – GO Transit Heavy Rail Corridors*. https://assets.metrolinx.com/image/upload/v1678378450/Images/Metrolinx/Adjacent_Development_Guidelines_EN_Version_5_0_February_2023.pdf

Review should consider the energy balance approach, the methodology and requirements of which are outlined in Section 3.6.1.3 of the 2013 FCM Guidelines.

3.4 Summary – Scenario Development

In total, eight scenarios were identified (summarized in Table 3). Two scenarios were brought forward to the risk assessment. Further details on the risk assessment are provided in **Section 4.0** of this report.

Table 3: Summary of Identified Scenarios

Scenario	Recommendations
Site Details	
Scenario 1 – Stormwater runoff and sediment loading onto the Guelph Subdivision during construction	Mitigation – Refer to Section 0 . No further risk analysis required
Scenario 2 – Encountering contaminated soil within proximity of the property line	Mitigation – Refer to Section 0 . No further risk analysis required
Railway Details	
Scenario 3 – Train derailment leading to public fatality	Further risk analysis required
Scenario 4 – DG release or leak leading to public evacuation of the Proposed Development	Further risk analysis required
Construction and Development Details	
Scenario 5 – Construction debris falling onto rail tracks	Mitigation – Refer to Section 0 . No further risk analysis required
Scenario 6 – Construction worker struck by passing train	Mitigation – Refer to Section 0 . No further risk analysis required
Scenario 7 – Pedestrian originating from the Development that trespasses and is struck by a train	Mitigation – Refer to Section 0 . No further risk analysis required
Scenario 8 – Structural damage to the building due to train derailment	Mitigation – Refer to Section 0 . No further risk analysis required

4.0

Risk Assessment

4.1 Risk Criteria

The risk criteria that will be used for the risk assessment will cover the following scenarios under Railway Details:

- Scenario 3 – Train derailment leading to public fatality – See **Section 4.2**.
- Scenario 4 – DG release or leak leading to public evacuation – See **Section 4.3**.

4.1.1 Risk Criteria – Public Fatality

When dealing with industrial-based hazards, such as freight rail and passenger/commuter rail, and their potential to impact the general public, the Major Industrial Accidents Council of Canada (MIACC) developed risk criteria to help evaluate the tolerance level of individual fatality-based risks based on four types of land use/occupancy (Table 4).

This table outlines the various categories and their associated maximum tolerable frequencies. Another way of interpreting this information would be to say that for a risk frequency of $\leq 1.00 \times 10^{-4}$, someone would have to be standing in the location of the associated hazard for a period of 10,000 years and at some point, during that time, a fatality would occur from the hazard.

Table 4: MIACC Risk Criteria – Public Fatality

Land Use/Occupancy Definition	Applicability to the Development	Maximum Tolerable Frequency Each year, there is a [insert] chance of a Fatality	Minimum Tolerable Return Period The chances of a Fatality are 1 in [insert] years	Annual Probability of Occurrence Each year there is a [insert] chance of fatality
Manufacturing (industrial, warehouses, open space, parkland, golf courses)	Construction Phase and Parking	$\leq 1.00 \times 10^{-4}$	$\geq 10,000$	0.01%
Low-Density (single family residential, townhouses, recreation centres, entertainment complexes)	Commercial Spaces	$\leq 1.00 \times 10^{-5}$	$\geq 100,000$	0.001%
High-Density (high-density residential, motels, hotels)	Residential Units	$\leq 1.00 \times 10^{-6}$	$\geq 1,000,000$	0.0001%
Sensitive (day cares, hospitals, group homes)	Not Applicable	$\leq 0.30 \times 10^{-6}$	$\geq 3,333,333$	0.00003%

4.1.1.1

Manufacturing Uses

Manufacturing uses are land uses which include typically manufacturing, industrial and storage type of uses. Additionally, open park spaces and parking lots would typically be included within manufacturing uses.

Under the MIACC Risk Criteria land uses, the Proposed Development would be considered Manufacturing due to the use and occupancy of the site. Self-storage and car-wash facilities typically see people coming and going for shorter periods of time thus reducing exposure to risk significantly.

4.1.1.2

Low-Density Uses

Low-density uses include land uses with residential and commercial low-density developments. These are described typically as bungalows, row homes, small shopping centers and small office buildings.

4.1.1.3

High-Density Uses

High-density uses include both residential and commercial. This includes developments such as high-rise condo towers, high-rise office buildings and hotels.

4.1.1.4

Sensitive Uses

Sensitive uses are defined by the nature of the land use taking place in the developments. These are categorized separately, as it is recognized that they may include more long-term occupancy, occupants with mobility issues and vulnerable occupants. Examples of sensitive uses include daycares, hospitals, seniors' residences and schools.

The MIACC Risk Criteria – Public Fatality reflects that no mitigation for a specific parcel is deemed necessary, as long as the Maximum Tolerable Frequency for the specific land use(s) or occupancy is met; otherwise, mitigation is needed.

4.1.2

Risk Criteria – Public Evacuation

The MIACC Risk Criteria was developed for individual *fatality* frequencies, not public evacuation frequencies; therefore, the MIACC Risk Criteria was adapted by Dillon.

Historical records¹¹ of industrial incidents were reviewed to compare the number of incidents that resulted in public evaluations (to prevent fatalities) versus the number of incidents that resulted in public fatalities. Over the 30-year timeframe, there were 119.1 incidents that resulted in public evacuations for every one incident that resulted in one or more fatalities – an indication of the threshold that emergency responders gauge the need to evacuate in order to prevent public fatalities. As such,

¹¹ Public Safety Canada's Canadian Disaster Database for Technology- Related Incidents (e.g., fire, hazardous chemical, infrastructure failure, explosion) from 1987-2016, a 30-year timeframe.

this “threshold” was utilized as a proxy to reflect the public “tolerance” to what is considered an acceptable level of risk for a freight train incident that necessitates public evaluation and determine whether a site-specific evacuation plan that takes rail-based hazards into consideration is necessary. The corresponding adjustment to the MIACC Risk Criteria is summarized in Table 5.

Table 5: Evacuation-based Risk Criteria (Adaptation of MIACC Risk Criteria)

Land Use/Occupancy Definition by MIACC	Applicability to the Development	Maximum Tolerable Frequency Each year, there is a [insert] chance of an Evacuation	Minimum Tolerable Return Period The chances of an Evacuation are 1 in [insert] years	Annual Probability of Occurrence Each year there is a [insert] chance of an Evacuation
Manufacturing (industrial, warehouses, open space, parkland, golf courses)	Construction and Parking	$\leq 1.19 \times 10^{-2}$	≥ 84	1.19%
Low-Density (single family residential, townhouses, recreation centres, entertainment complexes)	Commercial Spaces	$\leq 1.19 \times 10^{-3}$	≥ 840	0.11%
High-Density (high-density residential, motels, hotels)	Residential Units	$\leq 1.19 \times 10^{-4}$	$\geq 8,398$	0.01%
Sensitive (day cares, hospitals, group homes)	Not Applicable	$\leq 3.57 \times 10^{-5}$	$\geq 27,994$	0.003%

The MIACC Risk Criteria reflects that no mitigation for a specific parcel or occupancy is deemed necessary, as long as the Maximum Tolerable Frequency for the specific land use(s) or occupancy is met; otherwise, mitigation is recommended.

4.2 Risk Assessment Results: Scenario 3 – Train Derailment Leading to Public Fatality

As stated in **Section 3.2.1**, the proximity of the Proposed Development to adjacent rail operations is such that there is the risk of a train derailment that, if it were to occur, can result in public fatalities within the RPE. The likelihood of a train derailment that could lead to one or more public fatalities within the RPE is based on the analysis of the TSB Rail Occurrence database from the period of January 1, 2004 to December 31, 2021, that took the following factors into consideration:

1. Accident Type: The frequency of main-track and non-main-track derailments including two or more derailed cars leading to one or more fatalities;
2. Rail Activity Type: All rail activities were included, with the exception of inspection and maintenance. Switching activities were included since railcars sorting occurs in proximity of the Proposed Development;
3. Train Type: All train types were included, including commuter and passenger trains;

4. Approximate Train Speed: The speed of the train, which determines how many cars are likely to derail (potential impact zones);
5. Approximate Train Speed: The speed of the train, which influences the likelihood of a derailment; and
6. Train Traffic: The number of trains that are travelling within proximity of the Proposed Development in the year 2024 to the year 2036.

The risk assessment also considered two factors, which are specific to the Proposed Development as shown in Figure 13:

1. The width of building structures that are within the RPE; and
2. The corresponding occupancy type within the RPE.

Three potential events were taken into consideration:

- Event 1. Accident by a freight train derailing along the Guelph Subdivision main tracks leading to public fatality;
- Event 2. Accident by a freight train derailing from non-mainline tracks located in Proximity of the Proposed Development; and
- Event 3. Accident by a Go Transit/VIA Rail Train along the Guelph Subdivision leading to public fatality.

Utilizing the information shown in **Section 2.2**, Dillon estimated the frequency (as Return Period) of train derailments of two or more derailed cars, between the years 2024 and 2036, which could lead to a fatality for the occupancy type within the RPE for each potential event. Findings are summarized in Table 6 to Table 8.

The return period for each of the three events need to be summed in order to determine the total risk for Scenario 3 (see Table 9 below), and then compared to the Risk Criteria. The findings show that there are no exceedances of the Risk Criteria, for 2024 to 2036 train traffic.

4.2.1

Event 1 – Accident by a Freight Train Derailment along the Guelph Subdivision Main Tracks

The likelihood of this event is based on the analysis of the TSB Occurrence database between 2004 and 2021 that considered the following factors:

1. Accident Type: Main-track derailments;
2. Rail Activity Type: All activities with the exception of inspection and maintenance;
3. Train Type : All train types except commuter and passenger trains ;
4. Approximate train speed: 0 to 30 mph; and
5. Train Traffic: the volume of freight hauled within Proximity of the Proposed Development between the following time periods:
 - a. 2024 to 2026 – Construction period; and
 - b. 2026 to 2036 – Occupancy of the Proposed Development.

The risk assessment also took into account the following two factors:

1. The length of exposure along the Guelph Subdivision where the event can occur, which is 248.7 m for commercial and parking structures and approximately 20 m for the two residential units located within the RPE;
2. The corresponding occupancy type within the Proposed Development between 2024 and 2026, and 2026 to 2036.

The results for this event are presented below in Table 6. No exceedance of the Risk Criteria was found for this event.

Table 6: Risk Assessment Findings Scenario 3, Event 1 – Freight Train Main-Track Derailment Leading to Public Fatality

Time Frame	Occupancy Type and Location	Return Period of Event	Findings (Colour coding represents the applicable Land Use/Occupancy Definition – see Table 5)
Year 2024 to 2026	Construction Site	>1 in 10,000 years in 2024 >1 in 10,000 years in 2026	No exceedance
	Parking Underground	No analysis required; outside of RPE	N/A
	Parking Level 1	>1 in 10,000 years in 2026 >1 in 10,000 years in 2036	No exceedance
	Commercial Level 1	>1 in 100,000 years in 2026 >1 in 100,000 years in 2036	No exceedance
Year 2026 to 2036	Parking Level 2	>1 in 10,000 years in 2026 >1 in 10,000 years in 2036	No exceedance
	Residential Level 2	>1 in 1,000,000 years in 2026 >1 in 1,000,000 years in 2036	No exceedance
	Other Levels	No analysis required; outside of RPE	N/A

4.2.2

Event 2 – Accident by Freight Train Derailing along the Guelph Subdivision Non-Main Tracks

The likelihood of this event is based on the analysis of the TSB Occurrence database between 2004 and 2021 that considered the following factors:

1. Accident Type: Non-main-track derailments;
2. Rail Activity Type: All activities with the exception of maintenance;
3. Train Type : All train types except commuter and passenger trains ;
4. Approximate train speed: 0 to 15 mph; and
5. Train Traffic: the volume of freight cars switched within Proximity of the Proposed Development between the following time periods:

- a. 2024 to 2026 – Construction period; and
- b. 2026 to 2036 – Occupancy of the Proposed Development.

The risk assessment also took into account the following two factors:

1. The length of exposure along the Guelph Subdivision where the event can occur, which is 248.7 m for commercial and parking structures and approximately 20 m for the two residential units located within the RPE;
2. The corresponding occupancy type within the Proposed Development between 2024 and 2026, and 2026 to 2036.

The results for this event are presented below in Table 7. No exceedance of the Risk Criteria was found for this event.

Table 7: Risk Assessment Findings Scenario 3, Event 2 – Freight Train Non-Main Derailment Leading to Public Fatality

Time Frame	Occupancy Type and Location	Return Period of Event	Findings (Colour coding represents the applicable Land Use/Occupancy Definition – see Table 5)
Year 2023 to 2025	Construction Site	>1 in 10,000 years in 2024 >1 in 10,000 years in 2026	No exceedance
	Parking Underground	No analysis required; outside of RPE	N/A
	Parking Level 1	>1 in 10,000 years in 2026 >1 in 10,000 years in 2036	No exceedance
	Commercial Level 1	>1 in 100,000 years in 2026 >1 in 100,000 years in 2036	No exceedance
Year 2025 to 2035	Parking Level 2	>1 in 10,000 years in 2026 >1 in 10,000 years in 2036	No exceedance
	Residential Level 2	>1 in 1,000,000 years in 2026 >1 in 1,000,000 years in 2036	No exceedance
	Other Levels	No analysis required; outside of RPE	N/A

4.2.3 Event 3 – Accident by a GO Transit/VIA Rail Train along Guelph Subdivision

The likelihood of this event is based on the analysis of the TSB Occurrence database between 2004 and 2022 that considered the following factors:

1. Accident Type: Main-track derailments;
2. Rail Activity Type: All activities with the exception of inspection and maintenance;
3. Train Type : Commuter and passenger trains;
4. Approximate train speed: 0 to 30 mph; and

5. Train Traffic: the volume of commuter and passenger cars (both revenue and equipment trips) that transit within Proximity of the Proposed Development between the following time periods:
 - a. 2024 to 2026 – Construction period; and
 - b. 2026 to 2036 – Occupancy of the Proposed Development.

The risk assessment also took into account the following two factors:

1. The length of exposure along the Guelph Subdivision where the event can occur, which is 248.7 m for commercial and parking structures and approximately 20 m for the two residential units located within the RPE; and
2. The corresponding occupancy type within the Proposed Development between 2024 and 2026, and 2026 to 2036.

The results for this event are presented below in Table 8. No exceedance of the Risk Criteria was found for this event.

Table 8: Risk Assessment Findings Scenario 3, Event 3 – Commuter or Passenger Train Derailment Leading to Public Fatality

Time Frame	Occupancy Type and Location	Return Period of Event	Findings (Colour coding represents the applicable Land Use/Occupancy Definition – see Table 5)
Year 2024 to 2026	Construction Site	>1 in 10,000 years in 2024 >1 in 10,000 years in 2026	No exceedance
Year 2026 to 2036	Parking Underground	No analysis required; outside of RPE	N/A
	Parking Level 1	>1 in 10,000 years in 2026 >1 in 10,000 years in 2036	No exceedance
	Commercial Level 1	>1 in 100,000 years in 2026 >1 in 100,000 years in 2036	No exceedance
	Parking Level 2	>1 in 10,000 years in 2026 >1 in 10,000 years in 2036	No exceedance
	Residential Level 2	>1 in 1,000,000 years in 2026 >1 in 1,000,000 years in 2036	No exceedance
	Other Levels	No analysis required; outside of RPE	N/A

4.2.4 Total Risk for Scenario 3

The return periods for each of the three events need to be summed in order to determine the total risk of Scenario 3, which is summarized in Table 9 below and compared to the Risk Criteria. No exceedance of Risk Criteria was found.

Table 9: Total Risk Combined for Freight, Passenger and Commuter Train Derailment Leading to Public Fatality

Time Frame	Occupancy Type and Location	Return Period of Event	Findings (Colour coding represents the applicable Land Use/Occupancy Definition – see Table 5)
Year 2024 to 2026	Construction Site	>1 in 10,000 years in 2024 >1 in 10,000 years in 2026	No exceedance
	Parking Underground	No analysis required; outside of RPE	N/A
	Parking Level 1	>1 in 10,000 years in 2026 >1 in 10,000 years in 2036	No exceedance
	Commercial Level 1	>1 in 100,000 years in 2026 >1 in 100,000 years in 2036	No exceedance
Year 2026 to 2036	Parking Level 2	>1 in 10,000 years in 2026 >1 in 10,000 years in 2036	No exceedance
	Residential Level 2	>1 in 1,000,000 years in 2026 >1 in 1,000,000 years in 2036	No exceedance
	Other Levels	No analysis required; outside of RPE	N/A

4.3 Risk Assessment Results: Scenario 4 – Dangerous Good Release or Leak Leading to Public Evacuation

This scenario is based on rail accidents (derailment, collision, etc.) resulting in a DG release, requiring the evacuation of the public from the Proposed Development (see **Section 3.2.2**). Four potential events were taken into consideration:

- Event 1. Accident by a freight train along the Guelph Subdivision leading to a DG spill requiring an evacuation;
- Event 2. Derailment of a freight train due to switching at the Kitchener Yard and spurs, leading to DG spill requiring an evacuation;
- Event 3. Accident by a Go Transit/VIA Rail Train along the Guelph Subdivision leading to diesel fuel spill requiring an evacuation; and
- Event 4. DG Leaker from rail cars staged at Kitchener Rail Yard and spurs requiring an evacuation.

The risk assessment also took into account two factors which are specific to the Development, as shown in Figure 13:

1. The width of the building structures that are within the RPE; and
2. The corresponding occupancy type of the Proposed Development within the RPE.

As stated in **Section 3.2.2**, a DG release or leak will result in a spill that can generate odours, and/or result in a pool fire that would generate smoke. Further details of the events that were considered in the risk analysis are provided below.

4.3.1 Event 1 – Accident by a Freight Train along the Guelph Subdivision

Approximately 10% of freight hauled in Canada by rail is classified as DG under the federal *Transportation of Dangerous Goods Act* (TDGA). Evacuation distances vary by classification, ranging from 300 m to over 4 km, depending on the specific circumstances. For the purpose of the DVA, a Class 2 dangerous good was selected as a proxy to represent a typical dangerous good that would be hauled along the Guelph Subdivision. According to the Transport Canada 2020 *Emergency Response Guidebook*, the evacuation distance for a large spill can be as high as 1,600 m in all directions from the source of the spill¹² to mitigate the odour/vapours and/or smoke impacts to the public.

The likelihood of this event is based on the analysis of the TSB Rail Occurrence database between 2004 and 2021 that took the following factors into consideration:

1. Accident Type: All accident types excluding non-main-track, DG Leaker and passenger accidents leading to an evacuation;
2. Rail Activity Type: All rail activities with the exception of inspection and maintenance;
3. Train Type: All train types except commuter and passenger trains;
4. Approximate Train Speed: 0 to 30 mph; and
5. Train Traffic: The volume of freight that is hauled within proximity of the Proposed Development between the following time periods:
 - a. 2024 to 2026 – Construction Period; and
 - b. 2026 to 2036 – Occupancy of the Proposed Development.

The risk assessment also took into account two factors which are specific to this event:

1. The length of exposure along the Guelph Subdivision where the event can occur, which is 1,600 m on either direction from the Proposed Development based on total evacuation distance for a Class 2 Dangerous Goods (anhydrous ammonia) spill; and
2. The corresponding occupancy type within the Proposed Development between 2024 and 2026 and 2026 to 2036.

Given that emergency responders tend to evacuate the public within a specified radius of the accident in all directions, the prevailing wind direction at the time of the accident may not influence the frequency and therefore, it was not taken into consideration within the risk analysis; this is considered a conservative assumption.

Utilizing the information above, Dillon estimated the frequency (as Return Period) of the accident resulting in an evacuation, between 2024 and 2026 for the construction site, and between 2026 and 2036 for the parking, commercial and residential occupancy as shown below in Table 10.

¹² Guide 125 for Gases – Toxic and/or Corrosive – Transport Canada 2020 *Emergency Response Guidebook*

Table 10: Risk Assessment Findings of Event 1 of Scenario 4 – Accident by a Freight Train along the Guelph Subdivision Causing Dangerous Good Release Leading to Public Evacuation

Time Frame	Occupancy Type and Location	Return Period of Event	Findings (Colour coding represents the applicable Land Use/Occupancy Definition – see Table 5)
Year 2024 to 2026	Construction Site	>1 in 84 years in 2024 >1 in 84 years in 2026	No exceedance
	Parking (All Levels)	>1 in 84 years in 2026 >1 in 84 years in 2036	No exceedance
Year 2026 to 2036	Commercial	>1 in 840 years in 2026 >1 in 840 years in 2036	No exceedance
	Residential (All Levels)	>1 in 8,398 years in 2026 >1 in 8,398 years in 2036	No exceedance

No exceedance of Risk Criteria was found.

4.3.2

Event 2 – Derailment of a Freight Train due to Switching Activities at Kitchener Rail Yard and Spurs

Similarly, for Event 1, a Class 2 dangerous good was selected to represent one of the most DG that would be within rail cars that are being stored and switched within the Kitchener Yard and spurs. The principle location for a derailment is at a switch. As stated in **Section 2.2.1**, there are switches within 300 m of the Proposed Development.

The likelihood of this event is based on the analysis of the TSB Rail Occurrence database between 2004 and 2021 that took the following factors into consideration:

1. Accident Type: Non-main-track derailment;
2. Rail Activity Type: All rail activities with the exception of maintenance;
3. Train Type: All train types except commuter and passenger trains;
4. Approximate Train Speed: 0 to 15 mph;
5. Train Traffic: The volume of freight that is stored and switched within the Kitchener Yard and spurs between the following time periods:
 - a. 2024 to 2026 – Construction Period; and
 - b. 2026 to 2036 – Occupancy of the Proposed Development.

The risk assessment also took into account:

1. The corresponding occupancy type of within the Proposed Development between 2024 and 2026 and 2026 to 2036.

Utilizing the information above, Dillon estimated the frequency (as Return Period) of a rail accident resulting in an evacuation, between 2024 and 2026 during construction work, as well as between 2026

and 2036 for the parking, commercial and residential occupancy as shown in Table 11. No exceedance of Risk Criteria was found.

Table 11: Risk Assessment Findings of Event 2 of Scenario 4 – Derailment of a Freight Train due to Switching at Kitchener Yard and Spurs Leading to Public Evacuation

Time Frame	Occupancy Type and Location	Return Period of Event	Findings (Colour coding represents the applicable Land Use/Occupancy Definition – see Table 5)
Year 2024 to 2026	Construction Site	>1 in 84 years in 2024 >1 in 84 years in 2026	No exceedance
	Parking (All Levels)	>1 in 84 years in 2026 >1 in 84 years in 2036	No exceedance
Year 2026 to 2036	Commercial	>1 in 840 years in 2026 >1 in 840 years in 2036	No exceedance
	Residential (All Levels)	>1 in 8,398 years in 2026 >1 in 8,398 years in 2036	No exceedance

4.3.3

Event 3 – Accident by a GO Transit/VIA Rail Train along Guelph Subdivision

The likelihood of this scenario is based on the analysis of the TSB Rail Occurrence database between 2004 and 2022 that took the following factors into consideration:

1. Accident Type: All accident types with the exception of non-main track accidents leading to an evacuation;
2. Rail Activity Type: All rail activities with the exception of inspection and maintenance;
3. Train Type: Commuter and passenger Trains;
4. Approximate Train Speed: 0 to 30 mph; and
5. Train Traffic: The volume of commuter/passenger trains that transit within proximity of the Proposed Development between the following time periods:
 - a. 2024 to 2026 – Construction Period; and
 - b. 2026 to 2036 – Occupancy of the Proposed Development.

The risk assessment also took into account two factors which are specific to this event:

1. The length of exposure along the Guelph Subdivision where the event can occur is 1,600 m (800 m in all directions¹³) based on total evacuation distance for a diesel fuel spill; and
2. The corresponding occupancy type of within the Proposed Development between 2024 and 2026 and 2026 to 2036.

Utilizing the information above, Dillon estimated the frequency (as Return Period) of a rail accident resulting in an evacuation, between 2024 and 2026 during construction work, as well as between 2026

¹³ Guide 128 for Flammable Liquids (Water-Immiscible) – Transport Canada 2020 Emergency Response Guidebook

and 2036 for the parking, commercial and residential occupancy as shown in Table 12. The findings show that there is exceedance of the Risk Criteria for high-density residential occupancy starting 2025.

Table 12: Risk Assessment Findings of Event 3 of Scenario 4 – Accident by a GO Transit/VIA Rail Train along Guelph Subdivision causing Dangerous Good Release Leading to Public Evacuation

Time Frame	Occupancy Type and Location	Return Period of Event	Findings (Colour coding represents the applicable Land Use/Occupancy Definition – see Table 5)
Year 2024 to 2026	Construction Site	>1 in 84 years in 2024 >1 in 84 years in 2026	No exceedance
	Parking All Levels	>1 in 84 years in 2026 >1 in 84 years in 2036	No exceedance
Year 2026 to 2036	Commercial	>1 in 840 years in 2026 >1 in 840 years in 2036	No exceedance
	Residential All Levels	<1 in 8,398 years in 2026 <1 in 8,398 years in 2036	Exceedance starting 2025

4.3.4

Event 4 – DG Leaker from Rail Cars Staged at Kitchener Yard and Spurs

This event is based on the staging of rail cars within the railyard and spurs, where there is the incidental leaking of DG that is of sufficient volume to require the evacuation of the public from the Proposed Development. The likelihood this event is based on the analysis of the TSB Rail Occurrence database that took the following factors into consideration:

1. The frequency of DG leakers leading to an evacuation;
2. The percentage of rail cars that are anticipated to contain DG; and
3. The number of rail cars that are staged within proximity of the Proposed Development, between 2024 and 2026 during the construction phase, and between 2026 and 2036 during occupancy of the Proposed Development.

The risk assessment also took into account one factor which is specific to the Proposed Development:

1. The corresponding occupancy type of the Proposed Development.

On average 11% of originating carloads hauled by rail are designated as DG, which will be utilized for the analysis of Event 4.

Utilizing the information above, Dillon estimated the frequency (as Return Period) of a DG leaker, between 2024 and 2026 during construction work, as well as between 2026 and 2036 for the parking, commercial and residential occupancy, which could lead to a public evacuation of the Proposed Development. As summarized in Table 13, the findings show that no Risk Criteria were exceeded for both current (2024) and future (2036) train traffic.

Table 13: Risk Assessment Findings of Event 4 of Scenario 4 – Dangerous Goods Leaker Leading to Public Evacuation

Time Frame	Occupancy Type and Location	Return Period of Event	Findings (Colour coding represents the applicable Land Use/Occupancy Definition – see Table 5)
Year 2024 to 2026	Construction Site	>1 in 84 years in 2024 >1 in 84 years in 2026	No exceedance
	Parking All Levels	>1 in 84 years in 2026 >1 in 84 years in 2036	No exceedance
Year 2026 to 2036	Commercial	>1 in 840 years in 2026 >1 in 840 years in 2036	No exceedance
	Residential All Levels	>1 in 8,398 years in 2026 >1 in 8,398 years in 2036	No exceedance

4.3.5

Total Risk for Scenario 4 – Dangerous Good Release or Leak Leading to Public Evacuation

The return periods for each of the four events need to be summed in order to determine the total risk of Scenario 4, which is summarized in Table 14 and compared to the Risk Criteria. The findings show that there is exceedance of the Risk Criteria for high-density residential occupancy starting 2025.

Table 14: Total Risk of Scenarios 4 - Dangerous Goods Release and Leaker Leading to Public Evacuation

Time Frame	Occupancy Type and Location	Return Period of Event	Findings (Colour coding represents the applicable Land Use/Occupancy Definition – see Table 5)
Year 2024 to 2026	Construction Site	>1 in 84 years in 2024 >1 in 84 years in 2026	No exceedance
	Parking All Levels	>1 in 84 years in 2026 >1 in 84 years in 2036	No exceedance
Year 2026 to 2036	Commercial	>1 in 840 years in 2026 >1 in 840 years in 2036	No exceedance
	Residential All Levels	<1 in 8,398 years in 2026 <1 in 8,398 years in 2036	Exceedance starting 2025

Conclusions and Recommendations

A total of eight scenarios were identified and analyzed within the DVA that cover risks associated with:

1. Site Details;
2. Railway Details; and
3. Construction and Development.

Of the eight, two were identified that required a risk assessment to be completed, Scenario 3 – Train Derailment Leading to Public Fatality and Scenario 4 – Dangerous Goods Release or Leak Leading to **Public Evacuation**.

The MIACC risk-based land use standards were utilized to determine whether the risks were considered acceptable based on the occupancy and land-use activities that will be taking place at the Proposed Development. Our conclusions are summarized in Table 15.

Table 15: Risk Assessment Conclusions

Total Risk	Conclusions
Scenario 3 – Train derailment leading to public fatality	Acceptable level of risk based on forecasted train traffic. No mitigation measures required.
Scenario 4 – DG release and leak leading to public evacuation of the Proposed Development	Exceedance starting in 2025. Additional mitigation measures recommended.

A summary of the recommendations for all eight scenarios are summarized in Table 16.

Table 16: Summary of Recommendations

Scenario	Recommendations
Scenario 1 – Stormwater runoff and sediment loading onto Guelph Subdivision during construction	Topography is such that there is a possible but limited risk of surface water runoff generated from within the Proposed Development towards the Guelph Subdivision. A retaining wall is included in the Proposed Development design and should contribute to mitigate surface water runoff. Nevertheless, it is recommended that an Erosion and Sediment Control Plan be put in place to limit the potential runoff and prevent sediment erosion on the Guelph Subdivision.
Scenario 2 – Encountering contaminated soils within proximity of the Guelph Subdivision during construction activities	If suspected contaminated soils are encountered during construction within proximity of the property line to the rail corridor, the property owner should initiate discussions with CN, Metrolinx, and VIA Rail on next steps.
Scenario 3 – Train derailment leading to public fatality	Acceptable level of risk – An earthen berm and/or crashwall are not deemed necessary.

Scenario	Recommendations
<p>Scenario 4 – DG release or leaker leading to public evacuation of the Proposed Development</p>	<p>Likelihood is high enough starting 2025, develop a site-specific evacuation plan that takes into consideration a rail incident that results in a DG release or leaker.</p> <p>The evacuation plan would be implemented in the event of a rail accident or DG leaker in order to protect the public from the potential smoke and/or odours that could result from a DG release.</p> <p>Additional preventative mitigation measures to consider would be the orientation of building fresh air intakes away from the rail corridor.</p>
<p>Scenario 5 – Construction debris falling onto rail tracks</p>	<p>Any crane being utilized in the Proposed Development construction require Metrolinx approval. A Crane Swing Plan to illustrate the swing radius and proximity to the railway property shall be provided.</p> <p>The boom from a tower crane at the Proposed Development site will likely extend onto the rail property, therefore, it is recommended to determine if an Air Right Agreement/ Crane Swing Agreement with CN and Metrolinx is needed for the overhead building crane that extends over the Guelph Subdivision right-of-way.</p> <p>Also, there should be a plan in place between CN, Metrolinx, VIA Rail and the Proponent highlighting the process and communication protocol to follow if equipment or debris fall onto the railway property.</p> <p>Construction screening should be utilized along the mutual property line to contain any fallen equipment/debris within the Property.</p>
<p>Scenario 6 – Construction worker struck by passing train</p>	<p>Given the proximity of the construction of the Proposed Development to the adjacent Guelph Subdivision and that, currently, there is no continuous fencing along the mutual property line, there is the potential for a construction worker to be unaware of rail operations and inadvertently enter the rail right-of-way. Rail operation awareness training should be provided to all construction workers and be included in any site-specific health and safety plan during construction. Moreover, temporary fencing that encloses the construction site should be installed.</p>

Scenario	Recommendations
<p>Scenario 7 – Pedestrian originating from the Proposed Development that trespasses and is struck by a train</p>	<p>There is a shared property line between the railway property and the Proposed Development, as well a sport center across the Guelph Subdivision, which generate a risk of trespassers originating from the Proposed Development entering the railway property. However, continuous board fence and a chain-link fence that run along the mutual property line are included the Proposed Development design, which reduce the risk of trespassing. The board fence will also run along the west property line. In addition, the Proposed Development is adjacent to a grade separated crossing at Margaret Avenue and a grade level crossing at St. Leger Street and sufficient sidewalks provide safe access to pedestrians and cyclist travelling north of across the Guelph Subdivision. Further mitigating the risk, the parking will be fully enclosed with exits located on St. Leger Street and Victoria Street.</p> <p>Nevertheless, to further mitigate the risk and align with the FCM and Metrolinx Guidelines, Dillon recommends that that one of the fences within the Project design be a 2.4 m high security. To further discourage trespassing behaviours and orient pedestrians to exit the Proposed Development off Victoria Street, Dillon also recommend that the fence also encloses the northeast corners of the Proposed Development site. Noise barriers are generally considered acceptable substitute the chain link fence.</p> <p>A pro-active public safety communication such as Operations Lifesaver is recommended to advise people (residents, users) of the dangers of trespassing to increase overall rail safety awareness of residences. Rail operation awareness should be included in any site-specific Health and Safety Plan for maintenance operations.</p> <p>Dillon also recommends “No Trespassing” signages to be erected on the fence to remind pedestrians that they are not allowed on the Guelph Subdivision and that suitable rail crossings are accessible in close proximity.</p> <p>In addition to the above, Dillon recommends that behaviour patterns of occupants within the Proposed Development be monitored to determine if trespassing is occurring.</p>
<p>Scenario 8 – Structural damage to the building due to train derailment</p>	<p>It is recommended that a Train Impact Structural Review be completed by a professional Structural Engineer to determine whether a train impact could result in the progressive failure of the primary structure. The Train Impact Structural Review should consider the AREMA methodology and requirements outlined in Section 3.6.1.3 of the 2013 FCM Guidelines.</p>

Closure Statement

This report has been prepared for Reinders Law, Architecture, Engineering. This report may become a public document upon submission. The report is based on information provided to or obtained by Dillon Consulting Limited (Dillon) as indicated in the report, and applies solely to site conditions existing at the time of the Development Viability Assessment and on future projected traffic.

The material in it reflects Dillon's best judgment in light of the information available to it at the time of preparation. Any use which a third party makes of this report, or any reliance on or decisions made based on it, are the responsibilities of such third parties. Dillon accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report.

Sincerely,

DILLON CONSULTING LIMITED



Lynn Gagnon, CRM
Project Manager

Dave Poole, M.Sc., P.Eng., (Ab) CRM
Senior Risk Specialist

TS:tjs

Our file: 23-6167

Appendix A

Metrolinx Correspondence



Stephan, Tiffany <tstephan@dillon.ca>

Kitchener Rail Data

2 messages

Stephan, Tiffany <tstephan@dillon.ca>
To: raildatarequests@metrolinx.com

Wed, Jul 12, 2023 at 7:43 AM

Good Morning,

My name is Tiffany Stephan and I am a Risk Management Professional at Dillon Consulting Limited. Dillon has been hired to conduct a rail safety analysis for a mixed-use development located 264 Victoria Street North in Kitchener.

Would it be possible to obtain up to date current and future traffic forecasts along the Guelph Subdivision for this study area? Also, could you provide us some information on the speed observed by Go-Transit trains in this area? We already know that there is a speed limit of 30 mph, but we were wondering whether GO Transit trains go slower than this speed limit. In the future, because of the Kitchener line expansion Project, is Metrolinx planning to apply to request a speed limit lift/increase? This data would help us get more accurate results.

I thank you in advance for your help on that matter.

Sincerely,

Tiffany Stephan

--



Tiffany Stephan
Dillon Consulting Limited
334 - 11th Avenue SE Suite 200
Calgary, Alberta, T2G 0Y2
T - 403.215.8880ext. 4330
tstephan@dillon.ca
www.dillon.ca



Rail Data Requests <RailDataRequests@metrolinx.com>
To: "Stephan, Tiffany" <tstephan@dillon.ca>

Tue, Jul 18, 2023 at 12:49 PM

Hello Tiffany,

Further to your request dated July 12th, 2023, the subject lands ([264 Victoria Street North](#), Kitchener) are located within 300 metres of the Metrolinx Guelph Subdivision (which carries Kitchener GO rail service).

It's anticipated that GO rail service on this Subdivision will be comprised of diesel trains. The GO rail fleet combination on this Subdivision will consist of up to 2 locomotives and 8 passenger cars. The typical GO rail weekday train volume forecast near the subject lands, including both revenue and equipment trips is in the order of 99 trains. The planned detailed trip breakdown is listed below:

	1 Diesel Locomotive	2 Diesel Locomotives	1 Electric Locomotive	2 Electric Locomotives		1 Diesel Locomotive	2 Diesel Locomotives	1 Electric Locomotive	2 Electric Locomotives
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Day (0700-2300)	62	14	0	0	Night (2300-0700)	21	2	0	0
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The current track design speed near the subject lands is 30 mph (48 km/h).

There are *anti-whistling by-laws* in affect near the subject lands at Duke St, Saint. Leger St. Park St, Strange St, and Lancaster St. W.

Operational information is subject to change and may be influenced by, among other factors, service planning priorities, operational considerations, funding availability and passenger demand.

It should be noted that this information only pertains to Metrolinx rail service. It would be prudent to contact other rail operators in the area directly for rail traffic information pertaining to non-Metrolinx rail service.

I trust this information is useful. Should you have any questions or concerns, please do not hesitate to contact me.

Regards,

Justin Neale

Third Party Projects Review Team

Metrolinx | [10 Bay Street](#) | Toronto | Ontario | M5J 2W3

From: Stephan, Tiffany <tstephan@dillon.ca>
Sent: July 12, 2023 9:43 AM
To: Rail Data Requests <RailDataRequests@metrolinx.com>
Subject: Kitchener Rail Data

You don't often get email from tstephan@dillon.ca. [Learn why this is important](#)

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Good Morning,

My name is Tiffany Stephan and I am a Risk Management Professional at Dillon Consulting Limited. Dillon has been hired to conduct a rail safety analysis for a mixed-use development located [264 Victoria Street North](#) in Kitchener.

Would it be possible to obtain up to date current and future traffic forecasts along the Guelph Subdivision for this study area? Also, could you provide us some information on the speed observed by Go-Transit trains in this area? We already know that there is a speed limit of 30 mph, but we were wondering whether GO Transit trains go slower than this speed limit. In the future, because of the Kitchener line expansion Project, is Metrolinx planning to apply to request a speed limit lift/increase? This data would help us get more accurate results.

I thank you in advance for your help on that matter.

Sincerely,

Tiffany Stephan

--

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[Redacted signature area]

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7/18/23, 1:21 PM

Dillon Consulting Limited Mail - Kitchener Rail Data

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