

Development Next to Freight Rail Corridors Policy

EXECUTIVE SUMMARY

Calgary is a major transportation and logistics hub and is connected to the national rail network through the Canadian Pacific Railway and Canadian National Railway. With increasing volumes and types of goods being transported via freight railways there is an increased awareness across the country for the potential risks of accidents and the physical impacts of train derailments. Calgary has developed a risk management approach for development next to the freight rail Corridors that is unique to the Calgary context.

On 2017 March 20, Council directed Administration to bring forward a *Development Next to Freight Rail Corridors Policy* to the Standing Policy Committee on Planning and Urban Development no later than 2018 Q2.

A key aspect towards creating a viable policy is to use evidence to gain a proper understanding of the potential risks and impacts of train derailments. Towards this, in April 2017, Administration commissioned a Baseline Risk Assessment (Assessment) for the entire freight rail network within Calgary. The Assessment is an empirical engineering study that determined the probability of a train derailment leading to a fatality for each parcel adjacent to Calgary's freight rail corridors. The results of the Assessment informed the proposed policy "*Development Next to Freight Rail Corridors Policy*" (Attachment 1) and the associated Implementation Guide (Attachment 2). Administration recommends a ten-year review period of the Implementation Guide and Assessment with annual monitoring.

The objectives of the proposed policy are to protect buildings and building occupants, enable development and redevelopment by using a risk management approach, advance the vision of the Municipal Development Plan, and incorporate risk and noise considerations associated with freight rail operations in the development approval process, where appropriate. The proposed policy considers the physical impact of a potential train derailment as well as the noise impact associated with freight rail operations. The proposed policy applies to development located within 30 metres of the freight rail Corridors and enables compatibility between urban development and rail operations.

In order to achieve these objectives, this report proposes the adoption of the *Development Next to Freight Rail Corridors Policy* to guide development along the corridors (Attachment 1), and to utilize the proposed Implementation Guide (Attachment 2) in making development decisions. Amendments to Land Use Bylaw 1P2007 (Attachment 3) will ensure the technical requirements are reviewed during the Development Permit stage.

Through the completion of the Assessment, significant work has been completed for the land owners both from risk and noise perspectives. Administration has established a consistent risk assessment and streamlined approval process. The proposed policy will replace the interim approach which was initially established in 2015 March.

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ADMINISTRATION RECOMMENDATION:

That the Standing Policy Committee on Planning and Urban Development:

1. Direct Administration to:
 - a. Prepare an amending bylaw to Land Use Bylaw 1P2007 as outlined in Attachment 3;
 - b. Forward the proposed report and bylaw directly to the 2018 June 11 Public Hearing of Council to accommodate the required advertising; and
 - c. Formulate a corporate emergency response plan to include an Access Strategy to the freight rail corridor that focuses on utilizing portions of public lands, and report back to the SPC on CPS no later than Q2 2019.
2. Recommend that Council hold a Public Hearing and adopt and give three readings to the proposed amending bylaw;
3. Adopt, by resolution, the proposed Development Next to Freight Rail Corridor Policy as outlined in Attachment 1; and
4. Direct Administration to use the proposed Implementation Guide (Attachment 2) when making development decision.

PREVIOUS COUNCIL DIRECTION / POLICY

On 2017 March 20, Council adopted the recommendation from the Standing Policy Committee on Planning and Urban Development to receive PUD2017-0123 (Development in Proximity to the Railway Corridors Update) for information; and directed Administration to bring a Development and Rail Policy to the Standing Policy Committee on Planning and Urban Development no later than 2018 Q2.

On 2016 June 20, Council adopted the recommendation from the Standing Policy Committee on Planning and Urban Development to direct Administration to prepare a Rail Policy, in accordance with the Terms of Reference in Attachment 2, and provide an update to Council no later than 2017 Q1.

On 2016 March 21 Council directed Administration to consult with key stakeholders to review the draft deliverables for a Rail Policy Framework, including a more particular review and revision of the sensitive use list and report back to Council with a Terms of Reference that includes deliverables, scope of work and timelines no later than 2016 Q2.

At an in-camera session on 2015 December 18 Council directed Administration to report back to the 2016 March 21 Strategic Meeting of Council.

BACKGROUND

Like many Canadian cities, Calgary was shaped by the railways in its early days. From 1883 rail properties influenced Calgary's pattern of growth, as businesses and industries wanted to be as close as possible to the railway and its stations.

Today, Calgary is a major transportation and logistical hub and is connected with the national rail network through the Canadian Pacific Railway (CP) and Canadian National Railway (CN). CP and CN play a critical role in the economic development and prosperity of Calgary. This rail service makes the Calgary Region one of the most cost-effective places in Western North America to establish a business within the transportation and logistics industry. According to the Calgary

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Logistics Council, the Calgary Region Inland Port offers the quickest delivery time to western Canada because it is located at the heart of major east-west, north-south rail and highway routes.

Since the Lac Megantic disaster in 2013, Transport Canada has undertaken several initiatives to improve railway safety in Canada. These initiatives include, but are not limited to:

- New rules regarding hauling dangerous goods by rail restrict speeds for trains operating within the cores of Census Metropolitan Areas and in areas of higher risk.
 - These rules also require rail companies to incorporate input from municipalities on safety and security concerns in dangerous goods route risk assessments.
- Increased inspections and fines by Transport Canada's Railway Safety Inspectors who monitor railway operations, equipment, infrastructure and grade crossings. The monitoring program uses evidence-based risk indicators to direct and enforce necessary changes.
- Accelerated the phase out of older tank cars so that by November 1, 2016 all older tank cars have been removed from crude oil service.

In addition to these initiatives CP is investing in technologies to improve rail safety within the city of Calgary.

The rail traffic volume has increased and the nature of goods being carried by rail has changed over the last decade, with volumes projected to increase. A review of the potential risks and impacts of derailment accidents is appropriate. With development interest along the freight rail corridors increasing, it is important for a municipality to employ a risk management approach when considering development proposals in proximity to the freight rail.

In 2013 the Federation of Canadian Municipalities (FCM), in collaboration with the Railway Association of Canada (RAC), published *The Guidelines for New Development in Proximity to Railway Operations*. In response to this publication and with Council direction, Administration formed an inter-departmental working group and developed an 'Interim Approach' to review planning applications within 30 metres of the freight rail Corridors property line. In 2017 March, the approach was updated and Council directed Administration to prepare a *Development Next to Freight Rail Corridors Policy* in consultation with key stakeholders and return to the Standing Policy Committee on Planning and Urban Development no later than 2018 Q2.

INVESTIGATION: ALTERNATIVES AND ANALYSIS

Administration commissioned a Baseline Risk Assessment (Assessment). The original mandate for the Assessment included the Centre City, Sunalta and Inglewood/Ramsay. However, Administration expanded the scope of the Assessment for the entire freight rail network in Calgary to develop a consistent approach that can be applied across the city. The network consists of six freight rail corridors as shown in Map 1 in the *Development Next to Freight Rail Corridors Policy Implementation Guide* (Attachment 2).

Baseline Risk Assessment (Assessment)

The Assessment is an empirical engineering study that uniformly assessed the risk associated with freight rail operations to development adjacent to the freight rail corridors, throughout the City. It is an innovative approach not yet undertaken by a municipality. The assessment focused on two areas:

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1. Understanding the probability of a train derailment leading to a fatality for each parcel along the six corridors; and
2. Investigating the impact of noise and vibration associated with freight rail operations on adjacent development.

The Assessment helped Administration to:

- Employ evidence-based decision making to achieve the right balance between safety, quality of life and enable development that is aligned with the growth direction of the Municipal Development Plan;
- Understand the probability and impact of a train derailment and the noise impacts on a parcel-specific level along the freight rail lines;
- Develop a “Rail Proximity Envelope” where the policy applies and confirm a list of sensitive uses;
- Identify risk thresholds for High Density Uses and sensitive uses;
- Determine Maximum Building Width and Maximum Use Width for each parcel;
- Determine that a parcel-specific evacuation plan is not required for any parcel;
- Refine a consistent risk assessment process for applications and identify when site-specific assessments are required;
- Establish noise standards for indoor living spaces for residential, hotel and sensitive uses;
- Remove duplication of efforts relating to risk and noise studies;
- Understand the impact of vibration associated with freight rail operations and the implementation challenges of vibration standards; and
- Streamline the approval process and provide more certainty for development next to the freight rail corridors.

Through the completion of the Assessment and extensive stakeholder engagement, Administration has concluded that existing freight rail corridors within Calgary can be compatible with urban development.

Context Specific Policy

The proposed policy is specific to the context of Calgary, specific to the context of each corridor within Calgary and specific to the context of each development along each corridor. The purpose of this policy is to promote the vision of the Municipal Development Plan and local area plans to ensure that development and redevelopment reach their full potential near freight railways. This policy supports the following objectives:

- a) Protection for building occupants and buildings;
- b) Mitigation of noise impacts from freight rail operations on residents in buildings near freight railways; and
- c) Provide the planning process and landowners with a clear understanding of the potential risks and by doing so remove the need for individual risk assessments for most developments.

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Rail Proximity Envelope

The policy looks to address areas of concern on developments within close proximity to rail, which the Baseline Risk Assessment defined as the “Rail Proximity Envelope” (Envelope). The Envelope relates to two areas: 1) Safety Envelope; and 2) Noise Envelope. The depth of the Safety Envelope is measured 30 metres horizontally from the freight rail corridor and 7 metres in height from grade. The depth of the Noise Envelope is 30 metres horizontal and 64 metres in height from grade. Therefore this policy applies only on parcels and the buildings on them that are partially or entirely within Rail Proximity Envelope.

Other Exclusions are:

- Existing buildings, unless a change of use application is submitted for residential, hotel or sensitive uses;
- Lands solely adjacent to Light Rail Transit;
- Development adjacent to spur lines, which are lines built to serve specific customers; and
- Portions of Alyth Rail Yard in Inglewood that fall within the Airport Vicinity Protection Area (AVPA).

Foundation of Risk Tolerance Levels

The Assessment included an analysis of all commodities hauled by rail companies, including dangerous goods, to determine the probability of fatality as a result of derailment. This includes dangerous goods release, explosions and fires.

Consultation with experts, analyses based on a nationally used risk standard and comparison of other risk tolerance levels have enabled Administration to recommend annual probabilities of a train derailment leading to a fatality of 0.0001% for High Density Uses and 0.00003% for sensitive uses as acceptable tolerances respectively.

These risk tolerance levels have been determined based on the following:

- The number of people exposed to the potential risk of a train derailment only;
- Ease of evacuation;
- Duration of exposure to the potential risk; and
- The occupants’ ability to self-evacuate.

Maximum Building Width and Maximum Use Width

The Baseline Risk Assessment determined that an effective way of lowering the risk to an individual building located within the Envelope was to limit the building width or, in the case of a sensitive use, the use width. By limiting the width, the amount of time the building or use is exposed to the risk of a train derailment is reduced. In essence a smaller building or portion of a building within the Envelope has a lower risk of being directly impacted by a train derailment. The policy contains Maximum Building Widths and Maximum Use Widths for each parcel along all six corridors.

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Sensitive Uses

The policy identifies 12 sensitive uses (Addiction Treatment, Assisted Living, Child Care Service, Custodial Care, Emergency Shelter, Home Based Child Care – Class 2, Hospital, Jail, Residential Care, School Authority – School, School – Private, and Temporary Shelter), which are the same sensitive uses identified through the Interim Approach.

In March 2017, Council directed Administration to consider sensitive uses within the Envelope. If the proposed policy is approved, Council would reconfirm its direction to enable sensitive uses within the Envelope. The Assessment confirmed the list of sensitive uses is in accordance with nationally recognized industry standard risk assessment practices.

If feasible, consideration should be given to locate sensitive uses outside the Envelope. However, the Assessment has confirmed that sensitive uses can locate within the Envelope provided that the requirements of the proposed policy are met.

Interim Approach

The proposed policy will supersede the Interim Approach that has been in use since 2015. Administration advises that following the approval and adoption of the proposed policy, the *Development and Rail: Internal Review Committee (IRC)* should be dissolved. Circulations to Calgary Fire and Calgary Emergency Management Agency (CEMA) would continue as normal and Administration would apply the approved policy during the review and approval of applications adjacent to the freight rail corridors.

Parcel Specific Evacuation Plan

When looking at the potential for evacuations related to the release of dangerous goods, the extent of exposure varies based on the type of chemical release, wind direction and wind speed. It is beyond the scope of the Assessment to quantify the extent of dangerous goods release beyond the development right adjacent to the freight rail corridors; therefore, the Assessment's evacuation risks were only applied to the parcels that share a property line with the rail corridors. The Assessment analyzed the risk of evacuation for each of these parcels and determined that parcel-specific evacuation plans are not needed.

Noise and Vibration

The Assessment determined the noise level associated with freight rail operations and recommended acceptable noise standards for residential, hotel and sensitive uses. Applicants are required to mitigate the impact of noise. Mitigating the impact of noise can significantly improve human health and quality of life.

The assessment also determined the impact of vibration on adjacent development. Applicants are encouraged to mitigate the impact of vibration on their development.

Review and Update

The proposed policy is based on a ten-year projection of traffic growth to 2027. Administration recommends a ten-year review period with annual monitoring of:

1. Rail operations (any changes in track speed); and
2. Overall industry trends (traffic volume).

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Any significant changes in rail operations such as change in speed in certain sections of the corridors, or increase in train traffic volume may trigger an earlier review of the policy and supporting documents.

FCM/RAC Guidelines vs the proposed Development Next to Freight Rail Corridor Policy

There are many subtle differences between the FCM/RAC Guidelines and the proposed policy.

Major differences include:

- FCM Guidelines are not evidence based and are applied in general. Whereas the proposed policy is evidence based and specific to the context of each development.
- FCM Guidelines recommend residential buildings to be setback 30 metres from principle main line and 15 metres from a spur line. The proposed policy allows residential within the 30 metres, and because spur lines are for industrial use only, the policy does not apply to spur lines.
- Irrespective of the actual risk, if a residential building is proposed within the 30 metres, FCM Guidelines' most common mitigation measures includes a crash wall. The proposed policy considers the actual risk and calls for mitigation only when the risk tolerance is exceeded.
- FCM Guidelines require a noise study for development within 1,000 metres of rail yard, 300 metres of main line and requires noise barriers as mitigation measures. The proposed policy requires residential and sensitive uses to adhere to the noise standards within 30 metres.

Emergency Access Strategy

Facilitating emergency response to a railway incident was initially one of the deliverables of the policy. As the project progressed it was determined that the proposed policy's purpose is to provide a planning tool with a specific focus to assess and enable development on individual parcels next to the freight rail corridors. An Emergency Access Strategy is a tool used by emergency agencies outside of but, aligned with the proposed policy.

It is important that development does not preclude the ability of first responders to access the rail corridor in the event of an emergency. Administration has identified a total of 33 potential access points to the entire rail corridors throughout the city, which consist of existing at-grade crossings and adjacent parks and opens spaces. In addition to these access points there are 545 vacant parcels adjacent to the corridors, 234 of which are owned by The City. Portions of the public lands could be retained long term for strategic access points while portions of the private lands could be considered for procurement as part of the access strategy. In anticipation of redevelopment of inner city lands adjacent to railways, Calgary Emergency Management Agency and Calgary Fire prefer access points to the corridors every 500 metres, which requires further review during the completion of the Access Strategy.

The Access Strategy would consider requirements by first responders for set-up and "room to work" in the event of a rail incident. The Calgary Fire Department, Calgary Emergency Management Agency, and the railway companies will maintain their existing plans and utilize established communication requirements in the event of an incident. These plans in conjunction with the rail companies' federally mandated Emergency Response Assistance Plan will be the

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main sources for a coordinated response. Administration recommends further developing an Access Strategy which would be incorporated into a corporate emergency response plan.

Summary of Proposed Changes

This report contains the following documents in order to implement the goals for development along freight rail corridors:

- Proposed Development Next to Freight Rail Corridors Policy: This is a non-statutory document and contains policies on safety and noise for development within the Rail Proximity Envelope. The policies of this document apply at the development permit stage. This is needed to facilitate and enable development using a risk management approach through a streamlined approval process for development next to the freight rail corridors (Attachment 1).
- Proposed Development Next to Freight Rail Corridors Policy Implementation Guide: This document provides additional information to implement the *Development Next to Freight Rail Corridors Policy* (Attachment 2).
- Proposed amendments to the Land Use Bylaw: The Land Use Bylaw will be amended to contain the technical rules to implement the policy. The amendments ensure the requirements of the proposed *Development Next to Freight Rail Corridors Policy* are incorporated at the development permit stage and Administration has the ability to implement the policy (Attachment 3).

Stakeholder Engagement, Research and Communication

Through a series of ten workshops, Administration has worked very collaboratively with internal business units and key stakeholders, including rail companies, to understand the objectives of developers, the regulatory environment in which the rail companies operate, the needs of first responders, the vision and growth strategy of the Municipal Development Plan, and the needs of other stakeholders.

1. Key stakeholders: Since 2016 June, Administration has been working very collaboratively with key stakeholders including Canadian Pacific (CP) to develop the *Development next to Freight Rail Corridors Policy*.

Ten workshops were held between 2016 June and 2018 February with the key stakeholders. Through this engagement, Administration and industry stakeholders worked closely together towards a Calgary-based solution for development adjacent to the freight rail corridors. To further refine the proposed Policy, Administration met regularly with the core industry representatives and internal stakeholders. The key stakeholders are supportive of the proposed policy.

2. Council: On 2018 February 1, Administration invited members of Council and their offices to attend a drop-in information session to learn about the proposed policy. Administration also met with individual Councillors to discuss the proposed policy.

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3. Public Information Sessions

Administration has met to present the proposed policy with a number of Community Associations that are adjacent to a freight rail corridor. Administration met with the Ogden Planning Committee on 2018 January 23. The Ogden Planning Committee advised against having a public information session and instead recommended to inform residents through a newsletter article.

Additionally, Administration scheduled four information sessions to inform community members about the proposed policy and the impact of the policy on their neighbourhoods. Members of Council were informed about the scheduled public information sessions. A summary of the information sessions and number of attendees is provided in the table below:

Date	Communities	Attendees
February 15, 2018	Bowness	45
February 22, 2018	Inglewood, Ramsay, and Downtown neighbourhoods	42
February 27, 2018	Dover, Erin Woods, Penbrooke Meadows	39
February 28, 2018	Canyon Meadows, Southwood and Haysboro	49
Total		175

Other Jurisdictions

Other jurisdictions are also looking at creating rules and guidelines for development next to the freight rail corridors, specific to their area. The City of Toronto is currently in the process of creating guidelines for development close to rail corridors and yards. The City of Montreal has adopted the FCM/RAC *Guidelines for New Development in Proximity to Railway Operations*. The draft Zoning Bylaw-Law for the City of Waterloo prohibits development within 15.0 metres of the railway right-of-way. No sensitive use is allowed within 75 metres of the railway right-of-way unless a noise and vibration study is provided.

Strategic Alignment

Enabling development and redevelopment along the freight rail corridors through a risk management approach advances the vision of the Municipal Development Plan (MDP) by:

- Providing safe and healthy communities with a variety of housing choices (MDP section 2.1.1.a);
- Making efficient use of land and achieve city wide growth targets; (MDP section 3.6.2, 2.2.3, 3.2 and 3.2.1.b);
- Creating a liveable, vibrant and diverse Centre City (MDP section 2.2.3); and
- Providing good quality of life for citizens (MDP section 2.1.1).

The systematic and risk management approach for development next to the freight rail corridors aligns with the following Integrated Risk Management principles:

- Better decisions are made when supported by a systematic approach to risk management;

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- Risk management should be integrated into existing long-term strategic and business planning as well as informed decision-making in the day-to-day management of activities; and
- Risk management is consistently applied to the development and implementation of policy, programs, plans and future directions of The City of Calgary.

Social, Environmental, Economic (External)

Social

Creating policy for development along the freight rail corridors will ensure that the safety of building occupants and buildings is considered in the approval process. The requirement of a noise study at the development permit stage will ensure that the impact of noise is mitigated for buildings next to the freight rail corridors, thus creating a higher quality of life for the building occupants.

Environmental

The environmental impact associated with railway operations on adjacent development include noise and vibration. To address the impact of noise, the proposed policy requires residential, hotel and sensitive uses to meet recommended noise standards. The proposed policy also encourages applicants to consider the impact of vibration associated with freight rail operations on their development.

Economic

Parcels adjacent to the freight rail corridors can achieve their full development potential and reach Municipal Development Plan, local area plan, and Land Use Bylaw objectives provided that they meet the requirements of the proposed policy. The proposed policy recognizes the development potential of the parcels adjacent to the freight rail corridors by determining the risk profile of each parcel. The implementation of the proposed policy will result in parcels achieving their highest and best use and, therefore, significant revenue for The City through property tax.

Financial Capacity

Current and Future Operating Budget:

The implementation of the proposed policy can be achieved within the existing Planning & Development operating budget. Budget requests may be necessary in the future to review and update the Assessment.

Current and Future Capital Budget:

There are no capital expenditures associated with the proposed policy.

Risk Assessment

Approving the proposed policy:

The proposed policy is founded on a specific-to-Calgary, evidence based analysis that confirms the risk of development adjacent to the railway in Calgary is within nationally accepted levels. In

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adopting the new policy The City acknowledges that the annual probability of a train derailment leading to a fatality is 0.0001% for High Density Uses and 0.00003% for Sensitive Uses. The proposed policy appropriately balances the goals of public safety, continued economic prosperity and appropriate patterns of development in the city.

In order to ensure that the proposed policy remains relevant and strikes the right balance between competing priorities, Administration is recommending a ten-year review period with annual monitoring of rail operations, traffic volume and transportation of goods by rail and will bring forward further recommendations as warranted.

Not approving the proposed policy:

In the event that proposed policy is not adopted each application next to the rail corridors may have to conduct a site-specific risk assessment, thus adding unnecessary time and resources for the applicants and the Development Authority. This could impede private sector investment for lands adjacent to the freight rail corridors. Additionally, the absence of noise policy may result in exposing any potential residents to the elevated noise from freight rail operations.

REASON(S) FOR RECOMMENDATION(S):

The proposed policy assists the Development Authority when making a decision on a development permit next to freight rail corridors using a risk management approach. The proposed Land Use Bylaw amendments add necessary definition and rules to guide development next to freight rail corridors. The Access Strategy will help first responders to respond to incidents in the railway corridor.

ATTACHMENT(S)

1. Attachment 1 – Proposed Development Next to Freight Rail Corridors Policy
2. Attachment 2 – Proposed Development Next to Freight Rail Corridor Policy Implementation Guide
3. Attachment 3 – Proposed Amendments to the Land Use Bylaw 1P2007