



**To:** Public Works and Transportation Committee

**Date:** April 3, 2014

**From:** Victor Wei, P. Eng.  
Director, Transportation

**File:** 01-0140-20-TCAN1-  
01/2014-Vol 01

**Re:** **Proposed Railway-Roadway Grade Crossings Regulations and Standards**

**Staff Recommendation**

1. That a letter be sent to the federal Minister of Transport and to Transport Canada as a formal comment in response to the pre-publication of the proposed Grade Crossings Regulations in the *Canada Gazette*, Part I, on February 8, 2014:
  - (a) requesting that the specification of a maximum time limit of five minutes that a moving train may block any at-grade roadway crossing be included in the proposed Grade Crossings Regulations; and
  - (b) reiterating the previous Council resolution of July 23, 2012 that the proposed Grade Crossings Standards be revised to be engineering guidelines to allow for a risk-based approach that provides flexibility to address any identified safety concerns and, if the proposed Standards are implemented, a dedicated program be established by Transport Canada to provide adequate funding support to municipalities for any upgrades required from the new Standards.
  
2. That a copy of the above letter be sent to all Richmond Members of Parliament and Lower Mainland municipalities affected by the proposed Regulations and Standards for support of the above request.

Victor Wei, P. Eng.  
Director, Transportation  
(604-276-4131)  
Att. 2

REPORT CONCURRENCE		
ROUTED TO:	CONCURRENCE	CONCURRENCE OF GENERAL MANAGER
Engineering	<input checked="" type="checkbox"/>	
Roads & Construction	<input checked="" type="checkbox"/>	
Parks	<input checked="" type="checkbox"/>	
REVIEWED BY STAFF REPORT / AGENDA REVIEW SUBCOMMITTEE	INITIALS: 	APPROVED BY CAO 

## Staff Report

### Origin

At the July 23, 2012 Council meeting, Council considered a report on Transport Canada's development of Canadian Railway-Roadway Grade Crossings Standards (the Standards) and associated Railway-Roadway Grade Crossings Regulations (the Regulations) that would enable enforcement of the standards. The Regulations would apply to all public and private grade crossings on federally-regulated rail lines and govern the grade crossing owners (i.e., road authorities, beneficiaries and railway companies) who share ownership of these crossings.

The report identified that compliance with the proposed standards could materially impact City resources as information from Transport Canada at that time indicated that the City is the responsible road authority for nearly 60 public grade crossings in Richmond. Hence, Council resolved to send a letter to the Minister of Transport requesting that:

- a) the proposed Standards be revised to be engineering guidelines, to allow for a risk-based approach that provides flexibility to address any identified safety concerns in light of limited financial resources and technical constraints; and
- b) a dedicated program be established to provide adequate funding support for any upgrades required to meet the new guidelines.

On February 8, 2014, Transport Canada published the proposed Regulations and Standards. The public and other stakeholders now have 90 days to submit comments (i.e., deadline is May 9, 2014). Staff recommend that the City provide formal comments to Transport Canada reiterating the above Council resolution and outlining the City's concerns with the proposed Regulations and Standards.

### Findings of Fact

#### Responsibility of Roadway Authority

The proposed Regulations and Standards can be viewed at [www.gazette.gc.ca](http://www.gazette.gc.ca) > Proposed Regulations > *scroll to* Department of Transport – Proposed Regulations: Grade Crossing Regulations. In summary, the added responsibilities for the City would comprise:

- gathering and documenting information to be shared with the railway authority, which includes roadway specifications, traffic volumes and safe stopping distance;
- conducting safety reviews that are targeted towards recurring unsafe occurrences at a grade crossing and must be conducted within a reasonable time of being made aware of the occurrence;
- funding the construction and installation of any warranted upgrades identified by a safety review that are within the road right-of-way; and
- notifying landowners of sightline requirements over the owner's land.

With respect to the elements of a public<sup>1</sup> grade crossing, a road authority is responsible for the following requirements of the Regulations:

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<sup>1</sup> Railway authorities are responsible for the elements of a private grade crossing.

- (i) the design, construction and maintenance of a road approach;
- (ii) traffic control devices, except for a stop sign that is installed on the same post as a railway crossing sign;
- (iii) the design of a crossing surface; and
- (iv) sightlines within the land on which the road is situated and over land in the vicinity of the grade crossing, including the removal of trees and brush that obstruct the sightlines.

Table 1 summarizes the different timelines identified by the proposed Regulations for road authorities to meet the two levels of standards (basic and full) for all existing public grade crossings. Works that entail the upgrade of an existing crossing or the construction of a new crossing must meet the full standards at the time of construction.

**Table 1: Timelines for Proposed Standards for Existing Crossings**

Timeline	Standards to be Met	
Immediately (Upon Coming into Force)	BASIC	<ul style="list-style-type: none"> <li>• road crossing surface width (vehicular travel surface and shoulders)</li> <li>• depth and width of flangeway</li> </ul>
Within 5 Years (of Coming into Force)	FULL	<ul style="list-style-type: none"> <li>• road and pathway crossing surface dimensions</li> <li>• minimum/maximum depth/width of flangeway and field side gaps</li> <li>• minimum/maximum wear limits of top of rail and crossing surface</li> <li>• traffic control devices: stop, stop/railway crossing ahead, advisory speed tab, prepare to stop at railway crossing, traffic signal</li> <li>• information sharing</li> <li>• sightlines</li> <li>• warning system: lights, warning time, circuits</li> </ul>

Blocked Crossings

Currently, the *Canadian Rail Operating Rules* pursuant to the *Railway Safety Act* prohibit a stopped train or switching operations from obstructing a public grade crossing for more than five minutes when vehicular or pedestrian traffic requires passage across it. However, there is no comparable existing regulation with respect to moving trains (i.e., there is no maximum time limit that a moving train can block a crossing). To address the issue of prolonged blockage at crossings by moving trains, the proposed Regulations instead first restricts the scope of grade crossings to be considered by listing several qualifying conditions that must be met, which are:

- (a) the average annual daily traffic at the grade crossing is 2,000 or more and there is no other road crossing within three kilometres of the crossing surface, measured along the line of railway, that crosses the line of railway;
- (b) the public grade crossing is located in a municipality or other organized district where:
  - (i) there are two or fewer main roads that pass through it, or provide access into or egress out of it, and that cross the line of railway at grade, and
  - (ii) there is no other road crossing within three kilometres of the crossing surface, measured along the line of railway, that crosses the line of railway; or
- (c) the public grade crossing is the primary access for emergency services.

Then, only if the crossing meets the above criteria, a municipality may declare in a resolution and issue notice to the Minister of Transport and the railway company that the obstruction of the grade crossing creates a safety concern, upon which the railway company and the road authority

must collaborate to resolve the safety concern within 90 days. If an agreement cannot be reached within the 90 day period, the road authority must notify the Minister of Transport.

### Whistling Cessation

The proposed Regulations include enforceable anti-whistling requirements such that when the Regulations come into force, authorities will be prohibited from enacting anti-whistling at grade crossings that do not meet the specified standards with respect to warning systems and signage.

### **Analysis**

Staff acknowledge the worthy goal of the proposed Regulations to improve public safety at railway-roadway grade crossings but have concerns regarding the potential costs to municipalities of complying with the proposed Standards as well as issues not fully addressed, namely:

- the prescription of standards versus guidelines plus the need to upgrade existing public crossings within the specified time frame without any financial considerations; and
- the lack of a maximum time limit that a moving train may block a roadway causing delays, frustration, and potential safety consequences of other road users, including trucks.

These concerns are shared by a number of municipalities across Canada and staff have continued to participate in discussions with Transport Canada regarding the proposed Regulations and Standards through the aegis of the Federation of Canadian Municipalities (FCM). Transport Canada also recognizes that the proposed Regulations and Standards are crafted from a legal perspective and lack clarity with respect to their practical application in the field. The agency is therefore in the process of developing a manual for road authorities that will provide interpretation and guidance.

### Standards versus Guidelines

As stated in the previous report, staff recommend that the proposed Regulations be introduced as guidelines rather than standards to allow for a risk-based approach that provides flexibility for road authorities to address any identified safety concerns. Compliance with the proposed Standards is likely to create an additional burden for the City and, given limited resources, may displace other municipal priorities as discussed in more detail in the following sections.

### Preliminary Assessment of Existing Public Grade Crossings

Based on information supplied by Transport Canada in 2012 and staff knowledge, there are 39 active public at-grade crossings in Richmond, all of which (30 roadway crossings and nine pedestrian crossings) are used by CN Rail (see Attachment 1 for their locations). Of the 30 roadway crossings, the City shares responsibility with the Ministry of Transportation & Infrastructure for one crossing (Alderbridge Way-Highway 91 just east of Shell Road) and the remaining 29 are wholly within the jurisdiction of the City. While the two pedestrian crossings at the south end of the Horseshoe Slough Trail and the pedestrian crossing for the Bath Slough Trail are all signed as private, the three crossings have been deemed public as the City has signed the trails (i.e., the path is maintained by a road authority and is designed for public use). The 11 at-grade crossings along CP Rail's former Van Horne spur in north Richmond have been

discontinued and as such are no longer within the purview of the proposed Regulations and Standards. All remaining crossings are private and thus not the responsibility of a road authority.

Staff conducted site visits to all 39 crossings to assess on a preliminary basis whether or not the existing conditions comply with both the basic Standards (to be met on Day 1 as per Table 1) and the full Standards (to be met within five years) that fall within the responsibility of road authorities. Attachment 2 details the existing conditions and deficiencies at each location, which are summarized below.

- **Road Approaches and Shoulders (Day 1):** The proposed basic Standards require a 0.5 m shoulder beyond the travelled surface of the road or trail. Site visits indicate that 10 of the 30 roadway crossings and all nine pedestrian crossings require shouldering (see Figure 1 for an example). With respect to flangeways (i.e., the gap in a road surface that allows the wheel flange of a rail vehicle to pass as shown in Figure 2), only six crossings (three road and three pedestrian) appear to be in poor condition and require maintenance (i.e., removal of accumulated debris). For all other crossings, the flangeways appear in fair to good condition.



**Figure 1: Shouldering Needed**



**Figure 2: Flangeways**

Site visits indicate that the asphalt of the road approaches for the majority of road crossings (23 of 30) is in good or fair condition. The remaining seven crossings need repaving due to cracked and broken pavement. Of the nine pedestrian crossings, the three crossings that have a paved surface require repaving and four of the six crossings with crushed limestone require additional fill.

**Table 2: Responsibilities of City and CN Rail for Repaving**

City Responsibility	CN Rail Responsibility
<ul style="list-style-type: none"> <li>• public notices</li> <li>• traffic management</li> <li>• saw cut, remove and dispose of road crossing to a typical width of 6 m</li> <li>• reinstate asphalt road to thickness of top of ties to top of rails, typically 180 mm</li> <li>• supply rail seal materials</li> </ul>	<ul style="list-style-type: none"> <li>• replace ties and/or rails as required</li> <li>• supply and install additional rail ballast as required</li> <li>• compact ballast material and grade rail</li> <li>• install rail seal materials</li> <li>• provide track protection to City crews</li> </ul>

The City has a long-standing relationship with CN Rail regarding the regular repaving of road approaches at grade crossings. The City and CN Rail share the costs based on jurisdiction and responsibility with the average unit cost for only the City portion being \$2,200 per track meter based on the costs of the last five projects completed. Table 2 identifies the breakdown of responsibilities between the two authorities.

- Sightlines (within 5 Years): Per Table 1, the basic Standards do not identify any requirements for sightlines. The full Standards do not apply to roadway crossings with warning systems (lights and bells) and gates (five crossings). For roadway crossings with warning systems but without gates (11 crossings), roadway crossings with stop signs (10 crossings) or pedestrian crossings (eight crossings), sightlines requirements must be met from the stop position of the vehicle or individual to approaching railway equipment. For roadway crossings without warning systems or stop signs (four crossings), additional sightlines are required (i.e., from the stopping sight distance to the stop position of the vehicle).

Staff's preliminary assessment indicates that 26 crossings (23 road and three pedestrian) have sightline issues, the majority of which (22 of 26) are due to overgrowth of vegetation within the sightline area. The remaining four road crossings, three on Vulcan Way and one on Bridgeport Road east of Viking Way, are all located on spur lines and have sightline issues due to buildings situated within the sightline area. More detailed assessments (i.e., sightline calculations) at these four crossings as well as discussion with CN Rail as to the actual train movements on the spur lines will be undertaken to confirm whether or not there is a sightline concern and, if so, what level of warning system is warranted.

- Warning Systems (within 5 Years): the full Standards identify a formula to determine whether or not a warning system is needed based on the speed of the train, the average annual daily railway movements and the average annual daily traffic of vehicles using the crossing. Warning systems would not be required for the pedestrian crossings in Richmond due to the combination of a low train speed and only one set of tracks at each crossing. Of the 15 roadway crossings without warning systems, the combined low volume of daily railway and vehicle traffic indicates that it would be unlikely that any crossing would need to be upgraded based on rail and vehicle movements. However, as discussed above, sightline requirements may still necessitate upgraded warning systems. More detailed assessments (i.e., traffic volume counts and train speeds) will be undertaken to confirm whether or not a warning system is warranted based on rail and traffic volumes.
- Traffic Control Devices (within 5 Years): As shown in Table 1, the basic Standards do not identify any requirements for traffic control devices. With respect to the full Standards, stop signs may be necessary at the four roadway crossings where there is no stop sign and sightline issues exist (two crossings on Vulcan Way, one on Viking Way and one on Rice Mill Road leading to BC Ferries site). All four roadway crossings are located on local or collector roads where the installation of a stop sign would not unduly impact traffic movements. Additional signage (e.g., stop/railway crossing ahead) would not be required as the railway crossing sign and/or stop sign are visible within the stopping sight distance. Although not required by the Standards, the City's practice is to also install a stop bar; 16 road crossings are lacking stop bars while six crossings have stop bars that need refreshing. Two of the 29 roadway crossings and six of the nine pedestrian crossings lack railway crossing signage, which is the responsibility of the railway authority. Stop signs are not required at pedestrian crossings.

In summary, the majority (34 of 39) of public road and pedestrian crossings in Richmond do not meet the basic and/or full Standards. However, the vast majority of the deficient crossings (30 of 34) require only remedial work (i.e., repaving, shouldering, signage, pavement markings, trimming of vegetation) to comply with the Standards. Only the four road crossings that have sightline issues due to a building located within the sightline area have potentially major deficiencies.

As shown in Table 3, the preliminary cost estimate to address the outstanding minor deficiencies is in the order of \$0.8 million, of which \$570,000 would be required to meet the Standards on Day 1 of coming-into-force. The worst-case scenario of installing a warning system with gates to address the sightline issues due to a building at four crossings is estimated at \$1.6 million, for a total estimate cost of \$2.4 million.

**Table 3: Estimated Cost to Address Deficiencies**

Timing	Cost Item	Est. Cost
Day 1	Repaving/Shouldering: road/path approach including flangeways • 12 road & 9 pedestrian crossings	\$570,000
In 5 Years	Sightlines: vegetation trimming • 19 road & 3 pedestrian crossings	\$220,000
	Signage: stop signs • 4 road crossings	\$2,000
	Pavement Markings: stop bar • 22 road crossings	\$4,000
	<b>Subtotal: Minor Deficiencies</b>	<b>\$796,000</b>
In 5 Years	Sightlines: warning system with gates • 4 road crossings	\$1,600,000
	<b>Total</b>	<b>\$2,396,000</b>

#### Potential Impact to City of Upgrades to meet Proposed Regulations and Standards

Of the proposed Standards, meeting the sightline requirements is the one area that could have significant cost implications for road authorities. The proposed Regulations and Standards are silent on the process for determining how the costs to install an advanced warning system to meet sightline requirements would be shared between rail and road authorities. Should the two authorities be unable to agree on cost apportionment, the agencies can apply to the Canadian Transportation Agency (CTA), which has the authority to resolve disputes. The CTA assesses each situation on a case-by-case basis and gives consideration to factors such as relative rail versus road movements, which agency can more easily accommodate any required changes, and what measures would have the overall least impact to society (e.g., the net impact of requiring the railway company to reduce the speed of approaching trains may be less than requiring the installation of a warning system with gates).

Transport Canada administers the Grade Crossing Improvement Program (GCIP), which is an existing fund that supports the implementation of safety improvements at crossings. Transport Canada funds up to 50 per cent of the eligible costs under the program with the remaining 50 per cent divided amongst the involved authorities (typically roadway and railway). If the involved authorities cannot agree on the percentage split of the remaining costs, they can apply to the CTA for a determination. The Agency makes its decision based on the merits of each case, following submissions from the authorities involved.

While the GCIP has been recently undersubscribed (i.e., \$1 million unallocated in 2013), FCM has advised Transport Canada that increased funding may be necessary to help municipalities meet the full Standards within the prescribed five year period. Staff recommend that Council reiterate the need for Transport Canada to establish a dedicated program to provide adequate funding support to municipalities for any upgrades required to meet the proposed Standards.

### Crossings Blocked by Moving Trains

Since the start of the consultation process on the proposed Regulations and Standards led by Transport Canada, municipalities across Canada have consistently voiced (through FCM) a preference for a maximum time limit (between five and 10 minutes) that a moving train can block a crossing for reasons of public safety (e.g., need for emergency vehicle access) and negative impacts on the local road network (e.g., congestion and delays, particularly for goods movement). That preference was rejected by railway companies plus Transport Canada deemed that there is insufficient evidence that a blanket 10-minute rule is required. Transport Canada has further advised that the clause is intended to address safety concerns only and not the impacts to other travel modes. However, blockages of long duration may encourage drivers to engage in risky manoeuvres such as U-turns on two lane roads.

As noted earlier, the proposed clause contains qualifying conditions that would in effect eliminate virtually all crossings in most urban areas from consideration, as the threshold distance of three kilometres between crossings is measured along the railway line and most crossings are spaced closer than that. The clause does not take into account the configuration of the local road network where the detour for motorists may be much greater than three kilometres.

In addition, the clause does not identify any recourse for road authorities after they have notified the Minister of Transport that a blockage concern could not be resolved with the railway company. While Transport Canada has advised that a guideline similar to the whistling cessation process will be developed, a guideline lacks certainty and authority.

Given the shared concern of roadway authorities regarding blocked crossings, Transport Canada initiated a short-term project in December 2013 to examine measures to mitigate risky behaviour by road users at blocked crossings. The study comprises a literature review of railway operational reasons for blocking crossings, road user behaviour at blocked crossings and countermeasures to avoid risk taking behaviour. Both FCM and City staff are participating on the project steering committee, which is chaired by Transport Canada's Rail Safety Directorate and also includes representatives from the Railway Association of Canada. Staff recently received a draft of the final report, which identifies the following potential countermeasures outside of grade separation of the crossing:

- use of communications technologies and/or changeable message systems to provide real-time information on expected blockages and wait times, and alternate routes;
- pre-emption of traffic signals to clear traffic through the crossing;
- linkage of emergency service providers with rail traffic control centre to display crossings either blocked or potentially blocked, and also the nearest clear crossings; and
- shorter trains, track circuit upgrades and revised train schedules.

As the City has received concerns from local businesses regarding the negative impact of blocked crossings, particularly in the East Richmond area, a notice was published in the March 5 and 19, 2014 editions of the City Page of the Richmond Review advising the public of the proposed railway-roadway grade crossing regulations and, in particular, the lack of a maximum time that a moving train can block a crossing. The public and business owners were encouraged to review the proposed regulations and provide feedback directly to Transport Canada, particularly if they have been negatively impacted by a blocked crossing.



Based on discussions with staff of other Greater Vancouver municipalities, there is consensus that a maximum time limit for blocked crossings is preferred that would, for consistency, match the existing maximum time limit of five minutes for stopped/switching trains. From the perspective of a road authority, a crossing is occupied whether the train is moving or stopped, and thus the maximum time limit should be the same for both types of operations.

### **Financial Impact**

None.

Should the proposed Standards as written come into force, staff estimate the potential costs could range from an average of \$40,000 per crossing to address minor deficiencies (i.e., shouldering, repaving, trimming of vegetation, signage, and pavement markings) and up to \$400,000 per crossing to address sightline deficiencies due to buildings, or a total cost of approximately \$2.4 million over the five years (approximately \$480,000 per year) allowed to meet the proposed Standards. Any such funding needs would be submitted to Council via the capital and operating budget process and compete with other City priorities.

### **Conclusion**

Transport Canada is currently seeking feedback from stakeholders and the public regarding its proposed Canadian Railway-Roadway Grade Crossings Regulations and Standards. Staff support the intent of the Regulations to increase public safety at grade crossings but advise that compliance with the Standards may carry considerable financial impacts. In addition, the proposed Regulations do not satisfactorily address the issue of blocked crossings by moving trains. Both concerns are shared by municipalities across Canada as FCM has continued to facilitate discussions with Transport Canada on these issues. Staff recommend that the City provide formal comments to the Minister of Transport and Transport Canada regarding these key concerns.

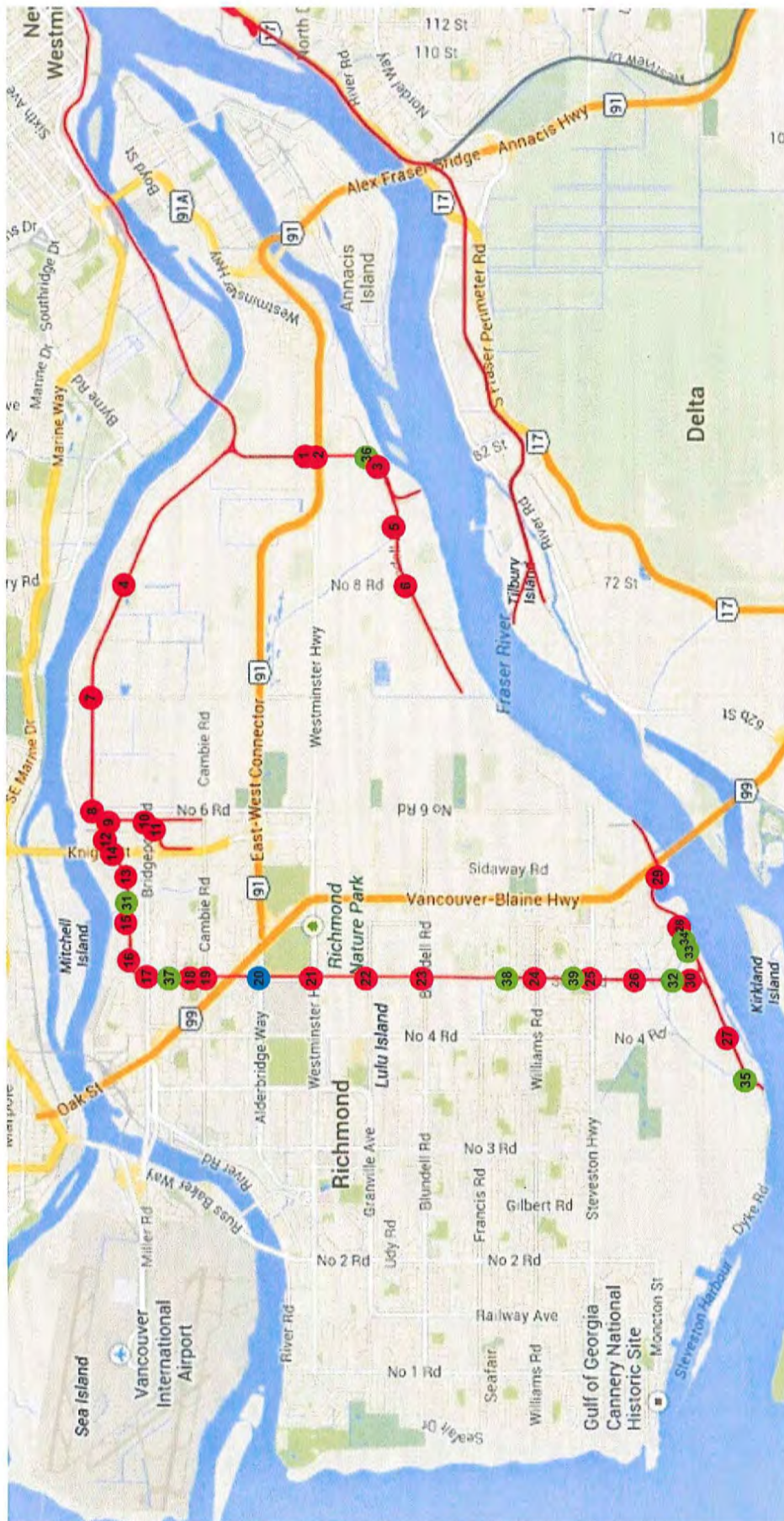


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JC:jc

Att. 1: CN Rail Public At-Grade Crossings in Richmond  
Att. 2: Condition of Existing 39 Public At-Grade Crossings

# CN Rail Public At-Grade Crossings in Richmond



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Condition of Existing 39 Public At-Grade Crossings

Location	Road or Trail?	Warning System	Sightlines		Traffic Control Devices			Road/Trail Approach			Meets Standards?	Level of Deficiency	
			Issue?	Due To	Railway Xing Sign	Stop Sign	Stop Bar	Surface Condition	Width (m)	Shoulder Needed?			Flangeway Condition
1	WESTMINSTER HWY - N of Hwy 91	Lights & Bells	No	N/A	Yes	N/A	No	Poor	9.0	Yes	Good	X	Minor
2	WESTMINSTER HWY - S of Hwy 91	Lights & Bells	Yes	Vegetation	Yes	N/A	No	Good	9.0	Yes	Good	X	Minor
3	NO 9 ROAD	Stop	Yes	Vegetation	Yes	Yes	Yes	Good	7.3	Yes	Fair	X	Minor
4	NO. 8 ROAD - N	Stop	Yes	Vegetation	Yes	Yes	Yes but faded	Good	5.0	Yes	Good	X	Minor
5	NELSON RD - S	Stop	Yes	Vegetation	Yes	Yes	Yes but faded	Fair	11.3	No - C&G	Fair	X	Minor
6	NO 8 ROAD - S	Lights, Bells & Gates	N/A	N/A	Yes	N/A	Yes but faded	Good	15.0	No - C&G	Good	✓	N/A
7	NO 7 ROAD	Stop	Yes	Vegetation	Yes	Yes	No	Fair	7.5	Yes	Good	X	Minor
8	NO 6 ROAD	Lights & Bells	Yes	Vegetation	Yes	N/A	Yes but faded	Poor	14.5	No - C&G	Fair	X	Minor
9	VULCAN WAY - W of No. 6 Rd	None	Yes	Building	Yes	No	No	Good	25.2	No - C&G	Fair	X	Major
10	BRIDGEPORT ROAD	Lights & Bells	Yes	Building	Yes	N/A	No	Good	14.5	No - C&G	Good	X	Major
11	VIKING WAY	None	Yes	Vegetation	No	No	No	Good	11.4	No - C&G	Fair	X	Minor
12	VULCAN WAY - E of Knight St Bridge	Stop	Yes	Building	Yes	Yes	No	Poor	8.3	Yes	Fair	X	Major
13	VULCAN WAY - W of Knight St Bridge	None	Yes	Building & Vegetation	No	No	No	Good	14.8	Yes	Good	X	Major
14	FRONTAGE RD btwn Vulcan Way	Lights & Bells	No	N/A	Yes	N/A	No	Poor	6.7	Yes	Fair	X	N/A
15	NO 5 ROAD - N	Stop	Yes	Vegetation	Yes	Yes	Yes	Poor	19.6	Yes	Fair	X	Minor
16	SIMPSON RD	Stop	Yes	Vegetation	Yes	Yes	Yes	Fair	14.0	Yes	Fair	X	Minor
17	BRIDGEPORT ROAD	Lights, Bells & Gates	N/A	N/A	Yes	N/A	Yes	Good	15.0	No	Fair	✓	N/A
18	BAMFIELD GATE ROAD	Lights & Bells	Yes	Vegetation	Yes	N/A	Yes	Poor	10.8	No - C&G	Good	X	Minor
19	CAMBIE RD	Lights, Bells & Gates	N/A	N/A	Yes	N/A	Yes	Good	18.0	No - C&G	Fair	✓	N/A
20	ALDERBRIDGE WAY	Lights, Bells & Gates	N/A	N/A	Yes	N/A	Yes	Good	35.0	No - C&G	Fair	✓	N/A

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Condition of Existing 39 Public At-Grade Crossings

Location	Road or Trail?	Warning System	Sightlines		Traffic Control Devices			Road/Trail Approach			Meets Standards?	Level of Deficiency
			Issue?	Due To	Railway Xing Sign	Stop Sign	Stop Bar	Surface Condition	Width (m)	Shoulder Needed?		
21 WESTMINSTER HWY	Road	Lights, Bells & Gates	N/A	N/A	Yes	N/A	Yes	Good	20.0	No - C&G	✓	N/A
22 GRANVILLE AVE	Road	Lights & Bells	Yes	Vegetation	Yes	N/A	No	Good	7.6	No	✗	Minor
23 BLUNDELL ROAD	Road	Lights & Bells	Yes	Vegetation	Yes	N/A	No	Poor	9.2	Yes	✗	Minor
24 WILLIAMS ROAD	Road	Lights & Bells	Yes	Vegetation	Yes	N/A	No	Good	13.5	No - C&G	✗	Minor
25 STEVESTON HWY	Road	Lights & Bells	Yes	Vegetation	Yes	N/A	Yes	Good	13.5	No - C&G	✗	Minor
26 HAMMERSMITH GATE	Road	Lights & Bells	Yes	Vegetation	Yes	N/A	Yes but faded	Good	14.4	No - C&G	✗	Minor
27 NO 4 ROAD	Road	Stop	Yes	Vegetation	Yes	Yes	No	Good	5.0	No	✗	Minor
28 NO 5 ROAD - S	Road	Stop	Yes	Vegetation	Yes	Yes	No	Good	12.0	No	✗	Minor
29 RICE MILL RD to BC Ferries	Road	None	Yes	Vegetation	Yes	No	No	Good	15.5	No	✗	Minor
30 SHELL RD (north of Dyke Road)	Road	Stop	Yes	Vegetation	Yes	Yes	Yes but faded	Good	12.0	No	✗	Minor
31 BATH SLOUGH TRAIL	Trail	None	No	N/A	No	N/A	N/A	Poor	2.0	Yes	✗	Minor
32 HORSESHOE SLOUGH TRAIL - N	Trail	None	No	N/A	No	N/A	N/A	Fair	2.0	Yes	✗	Minor
33 HORSESHOE SLOUGH TRAIL - W	Trail	None	No	N/A	No	N/A	N/A	Poor	2.0	Yes	✗	Minor
34 HORSESHOE SLOUGH TRAIL - E	Trail	None	No	N/A	No	N/A	N/A	Poor	2.0	Yes	✗	Minor
35 SOUTH DYKE TRAIL - Crown Packaging	Trail	None	Yes	Vegetation	No	N/A	N/A	Poor	2.0	Yes	✗	Minor
36 MCMILLAN WAY - South End	Trail	None	Yes	Vegetation	No	N/A	N/A	Fair	4.5	Yes	✗	Minor
37 BIRD RD	Trail	None	Yes	Vegetation	Yes	N/A	N/A	Poor	2.0	Yes	✗	Minor
38 ATHABASCA Drive	Trail	None	No	N/A	Yes	N/A	N/A	Poor	3.0	Yes	✗	Minor
39 SEALORD RD	Trail	None	No	N/A	Yes	N/A	N/A	Poor	3.0	Yes	✗	Minor

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