Regulations Amending the Grade Crossings Regulations: SOR/2021-233

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RAILWAY SAFETY ACT

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Her Excellency the Governor General in Council, on the recommendation of the Minister of Transport, pursuant to section 7.1 [a] and subsections 18(1) [b] and (2) [c] and 24(1) [d] of the *Railway Safety Act* [e], makes the annexed *Regulations Amending the Grade Crossings Regulations*.

Regulations Amending the Grade Crossings Regulations

Amendments

1 Subsection 1(1) of the *Grade Crossings Regulations* [1] is amended by adding the following in alphabetical order:

cross-product
means the product of the average annual daily railway movements and the average annual daily traffic. (*produit vectoriel*)

high-priority grade crossing
means a public grade crossing with average annual daily railway movements of 10 or more and a railway design speed of 97 km/h (60 mph) or more. (*passage à niveau de priorité élevée*)

storage distance
means, on a road that crosses a grade crossing, the shortest distance between the rail nearest the road approach of the grade crossing and the edge of the nearest intersecting road, measured along the centre line of the road, as represented by D in Figure 11-1 of the Grade Crossings Standards. (*distance de stockage*)

2 Section 2 of the Regulations is amended by adding the following after subsection (2):

Non-application

(3) Despite subsection (1), sections 19 to 96 do not apply in respect of the following grade crossings:

(a) a public grade crossing where

(i) the average annual daily railway movements is less than three,

(ii) the railway design speed is 17 km/h (10 mph) or less,

(iii) it does not cross more than one track,

(iv) the storage distance is 30 m or more, except if, at the road approach, access is for the exclusive use of pedestrians and non-motor vehicles,

(v) whistling is required or permitted when railway equipment is approaching the grade crossing, and

(vi) the cross-product is less than 2 000;

(b) a private grade crossing where

(i) the railway design speed is 17 km/h (10 mph) or less,

(ii) it does not cross more than two tracks, and

(iii) the cross-product is less than 100;

(c) a private grade crossing where

(i) the railway design speed for freight trains is 41 km/h (25 mph) or less,

(ii) the railway design speed for passenger trains is 49 km/h (30 mph) or less,

(iii) it does not cross more than one track,

(iv) the storage distance is 30 m or more, except if, at the road approach, access is for the exclusive use of pedestrians and non-motor vehicles,

(v) the cross-product is less than 100, and

(vi) there is no sidewalk; and

(d) a grade crossing where the average annual daily railway movements is zero.

3 Subsection 21(4) of the Regulations is replaced by the following:

Timing

(4) The requirements of subsections (1) to (3) must be met beginning on

(a) November 28, 2022, in the case of a high-priority grade crossing; or

(b) November 28, 2024, in any other case.

4 (1) Subsection 53(2) of the English version of the Regulations is replaced by the following:

Alternative — limited use

(2) If the grade crossing provides access to fewer than three private dwelling-places and does not provide access to a business, a limited use warning system, and signs, that meet the standards set out in Appendix B of the Grade Crossings Standards, may be installed at the grade crossing instead of the warning system referred to in subsection (1).

(2) The portion of subsection 53(3) of the English version of the Regulations before paragraph (a) is replaced by the following:

Alternative — walk light

(3) A limited use warning system with a walk light, and signs, that meet the standards set out in Appendix C of the Grade Crossings Standards, may be installed at the grade crossing instead of the warning system referred to in subsection (1) or (2), if

5 Section 59 of the Regulations is replaced by the following:

Additional requirements

59 In addition to meeting the requirements of section 58, an existing grade crossing that is a public grade crossing must meet the requirements of sections 60 to 71 beginning on

(a) November 28, 2022, in the case of a high-priority grade crossing; or

(b) November 28, 2024, in any other case.

6 Section 74 of the Regulations is replaced by the following:

Additional requirements

74 In addition to meeting the requirements of section 73, an existing grade crossing that is a private grade crossing must meet the requirements of sections 76 to 81 beginning on November 28, 2024.

7 Subsection 75(1) of the Regulations is replaced by the following:

Requirements respecting warning systems

75 (1) An existing grade crossing that is a private grade crossing must meet the requirements of sections 82 to 85 beginning on November 28, 2024.

8 Section 87 of the Regulations is amended by adding the following after subsection (3):

Alternative — limited use

(4) If the grade crossing provides access to fewer than three private dwelling-places and does not provide access to a business, a limited use warning system, and signs, that meet the standards set out in Appendix B of the Grade Crossings Standards, may be installed at the grade crossing instead of the warning system referred to in subsection (1).

Alternative — walk light

(5) A limited use warning system with a walk light, and signs, that meet the standards set out in Appendix C of the Grade Crossings Standards, may be installed at the grade crossing instead of the warning system referred to in subsection (1) or (4), if

(a) access to the road is controlled by a locked barrier; or

(b) the grade crossing is for the exclusive use of the private authority and is not used by the public.

9 The Regulations are amended by replacing "the day on which these Regulations come into force" with "November 28, 2014" in the following provisions:

(a) the definitions *existing grade crossing* and *new grade crossing* in subsection 1(1);

(b) subsection 4(3);

(c) subsection 12(3); and

(d) paragraph 21(2)(b).

Coming into Force

10 These Regulations come into force on the day on which they are registered.

REGULATORY IMPACT ANALYSIS STATEMENT

(*This statement is not part of the Regulations*.)

Executive summary

Issues: The *Grade Crossings Regulations* (the Regulations), which were published in the *Canada Gazette*, Part II, on December 17, 2014, established enforceable safety standards, such as sightlines, signage, design of crossing surface, warning systems, inspection, and testing requirements, for federally regulated public and private railway grade crossings. The Regulations, which apply to both new and existing grade crossings, became effective immediately for all new grade crossings; however, the Regulations provided a seven-year timeframe for stakeholders (e.g. railway companies, road authorities and municipalities) to bring existing grade crossings into compliance with the safety standards. The seven-year compliance timeframe will expire, and the safety requirements will become effective for existing grade crossings, on November 28, 2021.

Based on broad consultations conducted since fall of 2019 with stakeholders, including municipalities, road authorities, railway companies and farmer associations, Transport Canada (TC) has determined that stakeholders will be unable to meet the

November 28, 2021, compliance deadline for thousands of existing grade crossings. The COVID-19 pandemic has been partly responsible for the delays; however, there are also other factors, such as a lack of clarity among stakeholders about specific responsibilities and liabilities for the required upgrades, which could lead to disputes being raised to the Canadian Transportation Agency (the Agency) for settlement and contribute to implementation delays.

In addition to timing issues, TC has determined that the scope of application of the Regulations is too broad and, therefore, needs adjustment. Based on a comprehensive analysis of risk data covering the past seven years, TC has identified common characteristics in grade crossings that present a very low risk for serious accidents. From the data available to TC, 3 734 grade crossings that were subject to the upgrade requirements set out in the Regulations could be exempted based on these low-risk characteristics, as it has been determined that upgrades would only yield minimal safety benefits.

Description: The regulatory amendments revise the scope of application of the Regulations by setting requirements for grade crossings according to a risk-based model. Under this model, grade crossings considered to be low risk are now not subject to upgrade requirements. The amendments also extend the compliance deadline for upgrade requirements by one year (until November 28, 2022) for existing crossings considered to be high priority, and three years (until November 28, 2024) for all other existing crossings (i.e. crossings that do not meet the threshold criteria for low-risk or high priority).

Rationale: This regulatory initiative addresses stakeholder concerns about meeting the November 2021 compliance deadline. The regulatory amendments also ensure that low-risk crossings are not subject to undue burden. In addition to the flexibilities being provided to

stakeholders, the Regulations will also help ensure that needed safety improvements are prioritized according to risk and carried out as expeditiously as possible at the majority of grade crossings in Canada.

The total cost of the amendments is estimated to be $244.03 million between 2021 and 2030 (present value, in 2020 Canadian dollars at a 7% discount rate), of which $238.21 million would be assumed by Canadians and $5.82 million by railway companies. These estimated costs represent safety benefits (estimated at the time of the 2014 publication of the Regulations) that would not be realized as a result of (i) delaying the compliance deadlines for upgrade requirements; and to a much lesser extent; (ii) exempting low-risk crossings from the application of some upgrade requirements. These costs are associated with estimated fatalities, serious injuries and property damage that would have been prevented if all existing grade crossings were to come into compliance with upgrade requirements on November 28, 2021.

The total benefits of the amendments are estimated to be $110.76 million over the same 10-year analytical period, of which $69.72 million would be realized by road authorities and $41.04 million by railway companies. These benefits reflect the financial relief to affected stakeholders that would result from introducing a compliance exemption for low-risk grade crossings and from delaying the compliance deadlines for high-priority grade crossings and other implicated crossings. Overall, the amendments are expected to result in a net cost of $133.27 million over the 10-year period. Despite the net cost, TC has determined that the amendments are in the public interest, as they (i) address the fact that thousands of grade crossings were not going to meet the compliance deadline of November 28, 2021; and (ii) help ensure that required upgrades to high-priority crossings are

prioritized and completed as expeditiously as possible.

Issues

Grade crossing accidents remain the single largest source of fatalities and serious injuries involving railway operations in Canada. The *Grade Crossings Regulations* (the Regulations) were intended to address this long-standing and persistent rail safety issue. However, the approach and timeline for improving grade crossing safety in Canada were proving to be a significant challenge for various reasons, including the effects of the COVID-19 pandemic on municipal finances and construction activity; the financial burdens facing owners of private crossings; unforeseen delays in the process of identifying owners of private crossings; and difficulties in obtaining agreement between road authorities and railway companies on the upgrades required and apportionment of the costs.

Based on broad consultations conducted with stakeholders, including municipalities, road authorities, railway companies and farmer associations, Transport Canada (TC) determined that thousands of grade crossings covered under the Regulations were not going to meet the November 28, 2021, compliance deadline. As a result, it was TC's position that the upgrade requirements would not be implementable by November 28, 2021. TC concluded that it would not be able to enforce the Regulations at a level sufficient to produce a demonstrable improvement in the overall compliance situation. Railway companies and private and public crossing owners indicated that, as of November 28, 2021, they would still need between one and three years, to come into compliance. TC has therefore determined that regulatory amendments were necessary to avoid triggering a mass of non-compliances and to ensure that required improvements to safety at grade crossings are undertaken as quickly as possible with a priority focusing on crossings that present a higher risk.

Background

The Regulations came into force on November 28, 2014. The Regulations apply to over 13 000 public crossings and to more than 10 000 private crossings [2] along 41 711 kilometres (km) of track in Canada. Railway companies, road authorities and private owners of existing crossings were given until November 28, 2021 (seven years after the Regulations came into force), to comply with the upgrade requirements included in the Regulations. These requirements touched areas such as sightlines, crossing surface, road geometry (road approach, gradient/crossings angle, travelled way width), warning system specification/design and signage. All new crossings built after the Regulations came into force in 2014 must comply with specific safety requirements.

The primary objective of the Regulations was to increase safety at Canada's federally regulated grade crossings to reduce the incidence of deaths, injuries, and property damage by

1. establishing enforceable safety standards for grade crossings;
2. clarifying the roles and responsibilities of railway companies, road authorities and private authorities; and
3. promoting collaboration between railway companies and road authorities.

During the first two years of the original seven-year compliance period, road authorities and railway companies were required to share information with each other to determine what upgrades, if any, were required. The following five years were intended to provide stakeholders with sufficient time to plan and prepare for the required upgrades, with the majority of construction activities expected to happen in 2020 and 2021.

The Regulations clarified the roles and responsibilities of railway companies, road authorities and private authorities. Under the Regulations, railway

companies, road authorities and private authorities share responsibility for managing safety at federally regulated grade crossings. This brought thousands of new regulated parties (some 1 600 road authorities and 9 000 private crossing owners) to the table. This resulted in unanticipated challenges among stakeholders in exchanging safety-related information and determining the required upgrades for public crossings. There were also unforeseen challenges in identifying owners of private crossings. These challenges led to delays and disputes about cost apportionment.

Public crossings

Safety at public crossings is a shared responsibility between the railway company and the road authority. For existing public grade crossings, railway companies and road authorities were required to share prescribed information with each other within two years of the coming into force of the Regulations (by November 28, 2016). This was to give each party time to assess the safety of its infrastructure and plan accordingly. Several road authorities faced challenges with this phase; in communication with railway companies, these road authorities had indicated that they did not have the resources or the expertise to produce and validate the required safety information. Railway companies noted various gaps in the information that was provided by some road authorities. As a result, further communication and investigation were required to validate the information. The challenges in obtaining safety-related information combined with the pandemic restrictions had a significant impact on meeting the compliance deadline for upgrades.

In addition, since the fall of 2019, railway companies and road authorities have expressed concerns about their ability to complete the required upgrades to their crossings and stated that they would not be able to meet the November 2021 deadline. These concerns only intensified since the start of the COVID-19 pandemic. The bulk of the required upgrades to public

grade crossings was always expected to occur towards the end of a five-year municipal planning cycle, meaning during the summers of 2020 and 2021. However, the pandemic led to the loss of the entire 2020 construction season, and municipalities are now faced with budget constraints, declining revenues and public health priorities, and lack the financial resources to invest in required upgrades. The impact of these constraints is evident in the fact that approximately 85% of existing public crossings are currently not compliant with the upgrade requirements.

Private crossings

Safety at private crossings has traditionally fallen under the responsibility of the railway company. However, in some cases, railway companies have agreements with private landowners, most of them from the agricultural community, where the private landowner can be responsible for up to 100% of the costs for required upgrades under the Regulations. Since January 2020, railway companies have started to send letters to these private owners informing them of upcoming bills for work on their crossing. In the prepublication of the Regulatory Impact Analysis Statement (RIAS), the cost of a regular warning system was estimated at $200,000. While estimates of these bills can vary, TC has been advised by railway companies that the cost of a warning system could cost $300,000 to $600,000, or higher, which most, if not all, landowners would be unable to afford. These costs have attracted considerable media attention, and some of the stakeholders have indicated that they were not properly informed of the November 2021 compliance deadline. Railway companies have indicated that delays were incurred in both (i) determining the required upgrades; and (ii) identifying and informing private crossing owners. Both activities proved to be more complex than expected. To date, only 22% of private crossings are considered to be fully compliant with the upgrade requirements.

Transport Canada's outreach efforts

TC has conducted extensive outreach with industry and stakeholders since 2015 to foster collaboration between railway companies and road authorities and to promote compliance by the deadline by using all tools at its disposal.

TC made the following efforts to encourage and facilitate stakeholder compliance with the Regulations:

- 2015–2020: TC attended annual meetings of municipal associations, including the Federation of Canadian Municipalities (FCM), and presented multiple information sessions on the Regulations to municipal stakeholders at numerous municipal association meetings and conferences across Canada, through both webinars and face-to-face meetings.
- 2015–2020: TC held information sessions on the Regulations with the provinces.
- 2015–2020: TC held joint sessions with the Canadian Transportation Agency (the Agency) to address and facilitate the resolution of disputes related to the Regulations, and also worked with the Agency to update their respective websites related to the Regulations.
- 2015–2020: TC held information sessions with smaller railway companies and road authorities to increase applications under Rail Safety Improvement Program (RSIP) for upgrades required by the Regulations.
- 2015: A placemat on the regulatory timelines was shared with the Railway Association of Canada (RAC) and the FCM for dissemination to their members.
- 2015: Information documents to support regulatory compliance were published on the TC website, including information sharing forms to support stakeholders in meeting the information-sharing requirements by the November 28, 2016, deadline.

- September 2016: TC sent letters to 1 656 road authorities providing information on the requirements in the Regulations.
- April 2017: The Minister of Transport sent letters to larger municipalities and provinces regarding the information-sharing requirements in the Regulations.
- 2017: TC established a working group with the RAC and the FCM to assist stakeholders in completing the information-sharing requirements in the Regulations.
- 2017–2019: Railway safety inspectors (RSIs) communicated with more than 478 road authorities between September 2017 and December 2019 to improve the information sharing for more than 2 300 crossings.
- 2019: TC presented multiple information sessions to municipal stakeholders on the regulatory requirements and on the application process for funding under the RSIP.
- December 2019: TC established a working group with various municipal associations in response to a letter sent to the Minister. Working group participants include the FCM, Alberta Urban Municipalities Association (AUMA), Saskatchewan Association of Rural Municipalities (SARM), Union des municipalités du Québec (UMQ), Association of Manitoba Municipalities (AMM), Rural Municipalities of Alberta (RMA), and Union of B.C. Municipalities (UBCM). This working group meets every other month to discuss the Regulations.

According to TC data, these efforts helped industry and stakeholders reach a compliance rate of approximately 99% for the information-sharing requirements of the Regulations as of March 2021 compared to 82% in 2016. Work continued to gather the missing information by the summer of 2021. However, it became clear that compliance with the November 2021 deadline for required upgrades would not be possible, leading to a situation where

thousands of crossings would have been non-compliant if the Regulations were not amended.

Scope of application

In addition to the numerous challenges that impacted the timely implementation of required upgrades by stakeholders, TC determined that the scope of application of the 2014 Regulations was too broad and, therefore, in need of adjustment.

TC now has significantly more data than it did when the Regulations were initially developed, which has allowed TC to conduct more comprehensive and more accurate risk analyses on grade crossings throughout Canada. For example, TC now has the Rail Safety Integrated Gateway (RSIG), which is a data system tool that was developed to provide inspectors with the ability to document, analyze and report on the results of their oversight activities. RSIG enables TC to better capture and consolidate its inspection results, which can then be used to support better informed, risk-based decision-making.

TC now also uses GradeX, an internal web-based risk analysis tool, to generate a list of grade crossings, which is published annually on the Grade Crossings Inventory [3] on the Government of Canada's Open Data portal. The list of grade crossings in the inventory includes data on the location and characteristics of all crossings in Canada. This data is then used to support TC's rail safety inspection program.

Based on information collected through inspection activities in the RSIG, GradeX, as well as the Transportation Safety Board of Canada (TSB) data on rail occurrences, TC was able to determine that there are common characteristics for grade crossings that would represent a very low risk for serious accidents. Using this information, TC was able to establish an objective set of criteria that would capture grade crossings that present a

very low risk. Based on the information available, TC estimates that 3 734 grade crossings currently subject to the upgrade requirements set out in the Regulations could be exempted.

Objective

The primary objectives of the regulatory amendments are to address stakeholder concerns about meeting the November 2021 compliance deadline and to ensure that safety requirements for existing individual grade crossings better reflect the relative level of risk at those crossings. Despite delaying compliance deadlines and removing some grade crossings from the scope of application, the regulatory amendments will still support the broad safety goals of the 2014 Regulations by ensuring that safety improvements are carried out at the majority of grade crossings in Canada as soon as reasonably practical — with a focus on completing upgrades at the public grade crossings that present the highest risk first.

Without the amendments, it was expected that the Agency would receive a high level of complaints from private crossings owners in the lead up to the November 2021 compliance deadline. The amendments permanently exclude approximately 32% of private crossings from the requirements and provide a three-year extension for approximately 68% of private crossings. This could be translated into an immediate 32% reduction in the number of complaints expected to be received by the Agency from owners of private crossings, and a staggering of the majority of the complaints from owners of other private crossings over three additional years.

Description

1. Establish risk criteria

As previously noted, based on extensive analyses of data, which looked at factors such as train volumes and speeds at grade crossings, as well as the

likelihood and potential impact of incidents, TC determined that the 2014 Regulations were suboptimal in their scope of application. As a result, TC developed a three-tiered, risk-based approach to the scope of application, specifically looking at the following risk factors:

- TSB data on rail occurrences;
- the volume of road and railway traffic;
- maximum train and vehicle speeds;
- number of tracks and lanes;
- whether the crossing is located in an urban or a rural environment; and
- whether or not warning systems are in place at the crossing (i.e. gates, bells, lights).

High-priority grade crossings

High-priority grade crossings are defined in the Regulations as public grade crossings with average daily railway movements [4] of 10 or more and a railway design speed [5] of 97 km/h (60 mph) or more.

Based on TC data, only the Canadian National Railway Company (CN), Canadian Pacific Railway (CP) and VIA Rail Canada (VIA) have crossings that meet the criteria for high-priority grade crossings. The new definition of high-priority grade crossings will capture 2 125 public grade crossings.

Low-risk grade crossings

Low-risk crossings are crossings for which TC has determined that the residual risks would be minimal regardless of whether or not these crossings are upgraded. In other words, TC has determined that subjecting these crossings to the requirements in sections 19 to 96 of the Regulations would not result in appreciable safety benefits.

Specifically, crossings meeting all of the criteria in any one of the following

four categories are considered low risk (as long as they continue to satisfy the criteria):

1. Public grade crossings where the average annual daily railway movements are less than three, the railway design speed is 17 km/h (10 mph) or less, no more than one track crosses the grade crossing, the storage distance [6] is 30 metres or more (except if, at the road approach, access is for the exclusive use of pedestrians and non-motor vehicles), whistling is required or permitted when railway equipment is approaching the grade crossing, and the cross-product [7] is less than 2 000;
2. Private grade crossings where the railway design speed is 17 km/h (10 mph) or less, no more than two tracks cross the grade crossing, and the cross-product is less than 100; or
3. Private grade crossings where the railway design speed is 41 km/h (25 mph) or less for freight trains and 49 km/h (30 mph) or less for passenger trains, no more than one track crosses the grade crossing, the storage distance is 30 metres or more (except if, at the road approach, access is for the exclusive use of pedestrians and non-motor vehicles), the cross-product is less than 100, and there is no sidewalk.
4. Public or private grade crossing where the average annual daily railway movements is zero.

Other grade crossings

Grade crossings that do not meet the definition of “high-priority grade crossings” or do not fall under any of the four categories of low-risk grade crossings are not specifically defined in the Regulations. This general category of other grade crossings currently includes an estimated 17 469 crossings, representing 75% of the total crossings in scope of the Regulations.

Changes to grade crossings

It should be noted that a crossing could become subject to different requirements or a different timeline for compliance if there are changes to the railway design speed, average annual daily railway movements, cross-product, or other criteria applicable at the crossing. Operational characteristics at a grade crossing are not static and may change over time (e.g. increase in train speeds to maintain a level of service, road volumes increasing or decreasing due to changes in urban planning). Stakeholders who make changes to a grade crossing that would put the grade crossing in a different risk category under the Regulations will need to ensure that any upgrade requirements are met within the timeframes set out in the Regulations or, if those timelines have expired, before implementing the changes to the grade crossing.

2. Add a scope of application to exclude low-risk grade crossings from sections 19 to 96 of the Regulations

The Regulations amend the scope of application to exclude low-risk grade crossings from the requirements in sections 19 to 96 of the Regulations.

Sections 19 to 96 establish requirements to sightlines; design, construction, signs and warning systems for new public and private grade crossings; updated requirements for existing public and private grade crossings; and general requirements for instrument housing, inspections, testing and maintenance. Excluding the application of sections 19 to 96 of the Regulations for low-risk crossings will likely capture a significant number of field-to-field crossings used by farmers, which comprise a large proportion of private crossings, as well as many public and private crossings located on railway lines that have been identified for discontinuance within the next three years.

The amendments reduce the overall number of grade crossings impacted by upgrade requirements and will alleviate concerns from private landowners

facing large expenditures for upgrading crossings that are subject to minimal traffic levels. The amendments are also expected to reduce pressure on the Agency to mediate existing and potential disputes between railway companies and landowners over costs for upgrades to such crossings.

The amendments remove a total of 3 734 low-risk crossings from scope, including 496 public crossings and 3 238 private crossings, as long as they continue to satisfy the criteria. Based on available data, these low-risk crossings comprise about 16% of the total crossings currently subject to the Regulations. Despite the exclusion, if TC determines that a crossing presents a safety risk, options remain available under the *Railway Safety Act* (RSA) for TC to address specific threats or immediate threats.

Of the 3 238 total private crossings that have been excluded, 1 099 are expected to be excluded on the basis that the railway design speed is 17 km/h (10 mph) or less, no more than two tracks cross the grade crossing, and the cross-product is less than 100. In addition, 2 593 private crossings are expected to be excluded on the basis that the railway design speed is 41 km/h (25 mph) or less for freight trains and 49 km/h (30 mph) or less for passenger trains, no more than one track crosses the grade crossing, the storage distance is 30 metres or more, the cross-product is less than 100, and there is no sidewalk. Finally, 253 private crossings are expected to be excluded on the basis that there are no railway movements. Note that a total of 707 private crossings are captured under more than one exclusion criteria for low-risk private crossings.

TC estimates that costs have already been borne for approximately 665 low-risk private crossings to perform upgrades in order to be in compliance with the requirements of the Regulations by the original November 2021 compliance date. It is likely that many of these crossings required only minimal upgrades to be in compliance with the Regulations.

Low-risk grade crossings remain in scope for the regulatory provisions

related to definitions (section 1), application (section 2), compliance (section 3), information sharing (sections 4 to 18), blocked crossings (sections 97 to 103), audible warnings (sections 104 to 107), and records (sections 108 to 110). The following is the rationale for keeping low-risk crossings in scope for each of these sections:

1. Section 1: The definitions are relevant to low-risk crossings because they would still be subject to some requirements of the Regulations.
2. Section 2: The scope of application are relevant to low-risk crossings because it would set out the criteria for low-risk crossings.
3. Section 3: The compliance section provides a detailed clarification of the roles and responsibilities under the Regulations for railway companies and road authorities in respect of public and private grade crossings. Before the Regulations came into force in November 2014, the roles and responsibilities of these parties for monitoring conditions at existing grade crossings were often unclear, and multiple *Railway Safety Act* review reports had noted that the multi-jurisdictional nature of grade crossings is at the root of their safety deficiencies. As railway companies and road authorities will continue to have responsibilities related to low-risk crossings under some sections of the Regulations, section 3 will continue to apply.
4. Sections 4 to 18: Under the information-sharing requirements of the Regulations, railway companies and road authorities were required to share information with each other within two years after approval and publication of the Regulations, i.e. by November 28, 2016. Railway companies are also required to keep the most recent information shared. The purpose of these requirements is to ensure railway companies and road authorities have the information needed to assess what modifications, if any, would be needed to bring crossings into compliance with the Regulations. Railway companies and road

authorities are also required to share information with each other when a new grade crossing is constructed or when there is an alteration or operational change at a grade crossing. These sections will continue to apply to all crossings, as they contain requirements for stakeholders to share information on planned changes to the operations of the grade crossing so that railway companies and road authorities have the information they need to assess the safety of their infrastructure and plan accordingly.

5. Sections 97 to 103: Before the Regulations came into force in November 2014, *Railway Safety Act* review reports identified blocked grade crossings as a serious safety concern. Under these sections on the obstruction of grade crossings, when a city, town, municipality or other organized district passes a resolution that the obstruction of a public grade crossing creates a safety concern, railway companies and road authorities are required to collaborate to resolve that concern. Further, railway companies are required to use all necessary measures to clear a public grade crossing immediately when an emergency vehicle requires passage. Road authorities are required to ensure that vehicles do not stop on the crossing surface of a public grade crossing. These sections will continue to apply to low-risk crossings because the safety rationale and benefits of these requirements are still relevant for low-risk crossings.
6. Sections 104 to 107: The audible warning sections of the Regulations prescribe the requirements of an area where the cessation of train whistling may be prohibited under section 23.1 of the RSA and also provide for the safety attributes of a grade crossing in respect of audible warnings. For instance, in order to be granted whistling cessation, a crossing must have a warning system. These sections will continue to apply to low-risk crossings because the safety rationale and benefits of

these requirements are still relevant for low-risk crossings.

7. Sections 108 to 110: These record-keeping requirements support TC in conducting oversight and enforcement of the Regulations, and are still relevant to low-risk crossings under the amendments.

3. Extend the compliance deadline by one year for high-priority grade crossings and three years for other grade crossings

The amendments provide a one-year extension to the November 2021 compliance deadline for high-priority grade crossings and a three-year extension to the compliance deadline for other grade crossings.

Given the extent of the work that remains to be done on public crossings by railway companies and road authorities, a risk-based extension to the deadline ensures that parties prioritize their efforts and resources to bring public grade crossings that present the highest risk into compliance as quickly as possible.

In developing the compliance deadlines, TC consulted with stakeholders, such as railway companies and road authorities, and conducted extensive data reviews, which looked at collision risks, impacts, and histories.

Risk-based extension

Through consultation with stakeholders, such as railway companies and road authorities, TC has determined that between one and three years would be required for all grade crossings to come into compliance. It was also established that in order to preserve the safety benefits for the Regulations as much as possible, public crossings that present higher risk should be addressed as a priority.

The factors that TC considered in developing the proposed extensions to the compliance deadlines were based on a review of collision history, likelihood of collisions and their associated impacts. The data reviewed included TSB

data, GradeX data, as well as current requirements under the Regulations.

One-year extension for high-priority grade crossings

These datasets allowed TC to develop a risk-based approach where grade crossings, which saw a collision history resulting in serious or fatal injuries, would be compared for common characteristics. This risk-based approach was validated with available data from GradeX. Stakeholders have indicated that safety at public grade crossings is important and that they are working towards achieving compliance as quickly as possible. It was concluded that grade crossings presenting characteristics in the higher-risk range should be addressed as a priority.

It is estimated that a total of 2 125 public grade crossings would be considered as high priority and have to be in compliance by the extended deadline of November 28, 2022. Based on available data, these high-priority crossings comprise about 9% of the total crossings currently subject to the Regulations. As stakeholders are already working towards achieving compliance, the extension of the deadline by one year for high-priority crossings will allow them to concentrate their efforts on 9% of the grade crossing population, while also giving an additional construction season and an additional 12 months for municipalities to secure the necessary funding for required upgrades to those crossings. It will also stagger the potential draw on Agency resources to settle costing disputes between the road authorities and railway companies over any necessary upgrades over an additional 12-month period.

Three-year extension for all other crossings

The extended deadline of three years (to November 28, 2024) will affect approximately 17 469 grade crossings, which represents 75% of grade crossings in Canada. In the 2014 Regulations, the decision was initially left up to stakeholders on how to plan and prioritize their crossings upgrades to

ensure compliance. The three-year extension will allow stakeholders to dedicate their resources to upgrading these crossings after the work on high-priority crossings is completed. This will include finalizing work plans after assessing the safety-related information of their crossing, as needed. During consultations, stakeholders have indicated that the Regulations were built with the premise that five years would be available to plan and perform the required upgrade after the initial two years for stakeholders to exchange safety-related information. Therefore, and given the fact that information sharing took longer than expected, they wished to be provided an equivalent timeframe. TC data shows that stakeholders had complied with 92% of the information-sharing requirements by the end of 2018, which slowly rose to 99% of those requirements completed as of March 2021. Most of the delay was due to additional work required by railway companies and road authorities to validate information that was exchanged. Therefore, extending to November 28, 2024, the deadline for other grade crossings will provide the original planned five years to plan and perform the required upgrades for a vast majority of the grade crossings.

This should be achievable given that 85% of public grade crossings and 78% of private grade crossings that are currently not in compliance with the Regulations require only minor upgrades. Minor upgrades may include sightline requirements, signage requirements, etc., but do not include installing a new warning system. While many of these upgrades are minor, the sheer volume of crossings requiring these changes, and the fact that approximately 95% of these crossings are concentrated between the two major railway companies in Canada, each of whom is responsible for coordinating crossing upgrades separately with hundreds or thousands of different stakeholders, means that it would not be possible for all these minor upgrades for all of those crossings to be completed by November 2021.

Alternative warning system

After prepublication in the *Canada Gazette*, Part I, further amendments were made to the Regulations in response to comments from railway companies and railway associations regarding the costs of warning systems for private landowners. While estimates of these costs can vary, TC has been advised by railway companies that a warning system could cost up to $600,000 or higher, which most if not all private landowners would be unable to afford.

Generally, a warning system consists of flashing lights and a bell. In addition, a warning system can also include gates. These are mostly found at public grade crossings. By contrast, an alternative warning system is a warning system that typically consists of flashing lights only. These alternatives were developed to be used at private grade crossings for which use is limited or restricted. TC estimates that an alternative warning system would cost (on average) approximately $200,000.

For new private grade crossings, the Regulations allow for the installation of an alternative warning system in cases where there is limited use of the grade crossing. For example, if the grade crossing provides access to fewer than three private dwelling-places and does not provide access to a business, a limited use warning system and signs that meet the standards set out in Appendix B of the *Grade Crossings Standards* may be installed. In addition, a limited use warning system with a walk light and signs, which meet the standards set out in Appendix C of the *Grade Crossings Standards*, may be installed at a grade crossing instead of a warning system or limited use warning system if certain access restrictions were met. For example, access to the road would need to be controlled by a locked barrier or the grade crossing would need to be for the exclusive use of the private authority and not used by the public.

Amendments were made to the Regulations to allow for the installation and use of alternative warning systems at existing grade crossings to meet

sightline requirements if certain access restrictions are met and maintained. These amendments mirror the existing criteria already in the Regulations for new private grade crossings.

Regulatory development

Consultation

TC conducted extensive engagement with railway companies on the November 2021 compliance deadline to identify possible options for moving forward, and rail companies have provided TC with data to validate the approach taken to amend the Regulations.

In early January 2021, TC officials intensified this engagement with a broad public consultation on the proposed amendments, including the three-tiered, risk-based approach, using the TC "Let's Talk Transportation" web consultation portal. Stakeholders who might have been affected by the amendments being proposed to the Regulations, including railway companies, provinces, municipalities, and municipal associations, were given 30 days to provide comments through the portal. TC received 40 responses through the Let's Talk Transportation forum as well as 25 responses via letters or emails. All the comments received were supportive of the overall approach to amending the Regulations. TC did not receive any comments from stakeholders expressing concerns about having already invested in upgrades to meet the requirements of the Regulations in advance of the original November 2021 compliance deadline.

Prepublication in the Canada Gazette, *Part I*

The amendments were prepublished in the *Canada Gazette*, Part I, on June 19, 2021, followed by a 30-day comment period. A total of 19 submissions were received from railway companies and railway associations, provincial authorities, municipal associations, organizations representing

producers, and one member of the public.

Most stakeholders were supportive of the risk-based approach taken in the regulatory amendments that were proposed and the extension of compliance deadlines for upgrade requirements. Nevertheless, some stakeholders expressed concerns respecting the scope of the criteria for low-risk grade crossings, cost of upgrades, compliance deadlines, ensuring on-time performance for passenger rail and maintaining minimum safety standards at federally regulated grade crossings.

TC considered all stakeholder comments and the Regulations were amended to address some stakeholder concerns without compromising the safety objectives established at prepublication. Amendments were made to further refine the scope of the criteria for low-risk grade crossings and to permit alternative warning systems to be installed and used at an existing private grade crossing without a warning system. However, no amendments were made to further extend compliance deadlines.

Low-risk grade crossings

The prepublished Regulations established a condition that, to be considered low risk, a public grade crossing would need to have — among other things — a storage distance of 30 m, or more. Storage distance means, on a road that crosses a grade crossing, the shortest distance between the rail nearest the road approach of the grade crossing and the edge of the nearest intersecting road, measured along the centre line of the road. Minimum storage distances help prevent the risk of motor vehicles queuing over the tracks.

One railway company recommended that the Regulations be amended to permit a storage distance of 10 m or greater if the design vehicle is a passenger car. The prepublished Regulations, however, were not amended to modify the condition to have a storage distance of 30 m or more for grade

crossings with motor vehicles. The condition to have a storage distance of 30 m or more helps ensure clear storage space for vehicular road users at grade crossings. When clear storage cannot be provided, there is a risk of vehicles queuing over the railway tracks, putting them at risk of collision with a train.

Nevertheless, in consideration of the stakeholder comments, the criteria for low-risk grade crossings were amended to exclude a grade crossing from the condition to have a storage distance of 30 m or more if, at the road approach, the grade crossing is for the exclusive use of pedestrians and non-motor vehicles. This amendment aligns with the existing conditions for new public grade crossings in the Regulations: a new public grade crossing is not required to meet the condition to have a storage distance of 30 m or more if, at the road approach, access is for the exclusive use of pedestrians and non-motor vehicles.

One railway company and one railway association recommended that out-of-service grade crossings be added as an additional criterion for low-risk grade crossings. TC determined that the residual risks of adding this criterion would be minimal regardless of whether or not the crossing is subject to the requirements in sections 19 to 96 of the Regulations and the amendment could offer additional relief to road and private authorities. As a result, the criteria for low-risk grade crossings were updated to include grade crossings where the average annual daily railway movements is zero (e.g. grade crossing located on a rail line that is out of service). It should be noted that any crossing, which is later brought back into service, would need to meet upgrade requirements under sections 19 to 96 of the Regulations if it does not meet the criteria of a low-risk grade crossing.

Some associations representing producers and municipalities expressed concerns that grade crossings seldom used by road vehicles or crossed once or twice a day by agricultural and forestry equipment would be subject to

upgrade requirements because train speeds would be above the thresholds of 10, 25 and 30 mph prescribed in the Regulations. These stakeholders recommended that the Regulations treat seldom-used crossings as low-risk. TC considered the recommendation; however, in the interest of ensuring a consistent level of safety, no changes were made to the Regulations. The regulatory criteria for low-risk grade crossings include common characteristics that represent a very low risk of serious accidents, including maximum train and vehicle speeds, number of tracks and lanes, volume of railway and vehicle traffic, and storage distance. If these criteria are not met, a crossing would not qualify as low risk.

However, it should be noted that the Regulations offer flexibility in the way that a grade crossing can achieve compliance. For example, for grade crossings without a grade crossing warning system, minimum sightlines may be achieved by clearing sightline obstructions or reducing train and vehicle speeds. In some cases, one could also restrict the use of long combination vehicles or improve road approach gradients. Other options may also include installing a STOP sign or an active warning system.

Some stakeholders raised questions during the prepublication period about whether or not their individual crossings would qualify as low risk. These questions were considered out of scope as they did not relate to the substantive content or the potential impacts of the Regulations.

An individual member of the public recommended that the Regulations give inspectors the flexibility to exempt individual crossings from regulatory requirements. TC considered the recommendation but ultimately determined that it would not be practical or transparent. Establishing the criteria for low-risk grade crossings in the Regulations ensures that the criteria is known in advance to stakeholders and supports predictability, transparency, and public confidence in the enforcement regime.

Compliance costs

Nearly all stakeholders were concerned about the compliance costs associated with upgrade requirements. Six stakeholders recommended additional federal funding through the Railway Safety Improvement Program (RSIP). On August 13, 2021, the Minister of Transport announced that the Government of Canada would be providing $100 million over five years (starting in 2021–2022) to continue to advance the safe and secure transportation of people and goods by rail. The funding will be dedicated to a wide range of activities, including providing funding to the ongoing success of RSIP and supporting upgrades to existing grade crossings.

One association representing agriculture producers emphasized that costs incurred to meet safety improvements as a result of regulatory requirements should not include costs for the general maintenance of the crossing; the association argued that these costs should be the responsibility of the railway company. Matters pertaining to cost apportionment fall under the purview of the Agency and are therefore beyond the scope of the Regulations. As a result, no amendments were made to the Regulations to address this concern. Where parties are unsuccessful in negotiating an agreement with respect to the costs for the maintenance of a crossing, such matters should be referred to the Agency. Where agreements cannot be reached by the parties, the Agency will help resolve issues relating to the construction, maintenance, and costs for private crossings through a range of approaches such as facilitation, mediation, and adjudication. [8]

Railway companies were also concerned that private landowners would be unable to afford the upgrade costs associated with installing warning systems. While estimates of these bills can vary, TC has been advised by railway companies that the cost of a warning system could cost up to $600,000 or higher. In response to these concerns, the Regulations have been amended to ensure that an existing private grade crossing would have the same flexibility as a new private grade crossing to install an alternative

warning system. Similar to a new private grade crossing, an existing private grade crossing would also be required to meet certain access restrictions (e.g. to provide access to fewer than three private dwelling-places, no access to a business or where access to the road is controlled by a locked barrier or the grade crossing is for the exclusive use of the private authority and is not used by the public). These amendments could offer some financial relief to private landowners facing large expenditures for upgrading private crossings while preserving safety objectives. For example, unlike a regular warning system, which could cost $600,000 or higher, TC estimates that an alternative use of a warning system could cost (on average) $200,000.

Monitoring and oversight

Almost all stakeholders supported the exclusion of low-risk grade crossings from the requirements in sections 19 to 96 of the Regulations. Nevertheless, a provincial authority was concerned that minimum safety standards prescribed for sightlines, grade crossing surfaces, traffic signs and warning systems would not be maintained at federally regulated grade crossings.

It should be noted that, despite being excluded from the requirements in sections 19 to 96 of the Regulations, a low-risk grade crossing would still be required to meet certain statutory requirements in the RSA. For example, section 11 of the RSA requires the application of sound engineering principles to crossing design, construction, evaluation, maintenance and alteration of these grade crossings. As a result, no changes were made to the Regulations to address the concern raised. Based on the data available to TC, requiring low-risk grade crossings to comply with sections 19 to 96 of the Regulations would only yield minimal safety benefits. As a result, TC determined that these crossings could be exempted from sections 19 to 96 without compromising overall safety objectives.

An association representing municipalities requested more clarity from TC as to how low-risk grade crossings would be monitored given that traffic levels

and risk profiles could change over time. In addition, a railway company was concerned that non-compliance with upgrade requirements could impact on on-time performance for passenger rail services.

TC's oversight role will continue to include monitoring railway companies for compliance with the RSA and its regulations through audits and inspections. TC currently uses a risk-based approach to planning oversight activities, which includes conducting regular audits and inspections. TC also has several authorities under the RSA to address identified safety concerns, including, but not limited to, issuing notices, orders and/or emergency directives.

An association representing producers suggested that more diligent oversight is needed by TC and the Agency to ensure that project costs for upgrades to grade crossings are competitive. The association was concerned that railway companies were doing upgrade work themselves without opening the projects to competition. As matters pertaining to cost are not dealt with in the Regulations and fall under the purview of the Agency, this comment was considered beyond the scope of the regulatory amendments. The Agency has processes to deal with disputes respecting costs and will continue to provide information and answer questions regarding the amounts that may be charged by railway companies for work and services provided at private crossings. [9]

Cost apportionment

Some associations representing producers recommended that railway companies be required to pay for the costs of making improvements to private grade crossings. These recommendations were considered out of scope for the regulatory amendments because the legislative framework for private crossings is established through sections 102 and 103 of the *Canada Transportation Act* (CTA). For crossings constructed pursuant to section 103 of the CTA, the costs associated with the crossings are the responsibility of the

private landowner.

One railway company was concerned that some third parties may have an inaccurate view of the ability of the Agency to address the financial impacts associated with the Regulations. In response to the concerns raised, TC will continue to work with the Agency to clarify requirements to stakeholders and to raise awareness about the scope of services offered through the Agency, including the alternative dispute resolution process.

Compliance deadlines

While most stakeholders supported the extension of compliance deadlines, one railway company and some associations representing agriculture producers requested additional extensions. TC considered requests to extend deadlines, but determined that in order to ensure that safety objectives are met at grade crossings, no further extensions could be provided. TC has concluded that upgrades need to be completed as soon as possible to help reduce and prevent loss of life, serious injuries, and serious property damages. The amendments to the Regulations already extend the compliance deadlines for upgrades by one year (until November 28, 2022) considered to be high priority and three years (until November 28, 2024) for all other crossings (i.e. crossings that do not meet the threshold for low-risk or high priority). To support compliance with these deadlines, TC will continue to work with railway companies to encourage the timely notice of upgrade requirements to public and private authorities.

Timely upgrades will also support safe, efficient and reliable rail services. In the comments submitted after the prepublication in the *Canada Gazette*, Part I, one railway company identified that the compliance with the upgraded requirements supported on-time performance and attractive transit times between destinations for passenger rail services.

Outreach and engagement

One association representing municipalities was concerned that municipalities were not consulted in the development of the criteria for low-risk grade crossings. In its submission, it recommended that TC encourage information sharing between municipalities and railway companies and use the open data portal to share updates on the Regulations and completed upgrades. In addition, one municipality was unclear about the prioritization of upgrades based on the level of risk for crossings that did not meet the criteria of a low-risk grade crossing or high priority grade crossing. One railway company was also concerned that road and private authorities may be uninformed of their obligations under the Regulations.

TC has consulted extensively on the regulatory amendments. Nevertheless, in order to address these concerns, TC will continue to reach out to railway companies, municipalities, and private authorities to clearly communicate the regulatory amendments, the upgrade requirements and the timing for implementation. In addition, TC will continue to encourage the cooperation and sharing of information between railway companies, road and private authorities. Finally, TC will also reach out to individual municipalities to provide more guidance with respect to the prioritization of upgrades for crossings that do not meet the criteria of a low-risk grade crossing or high priority grade crossing.

Modern treaty obligations and Indigenous engagement and consultation

The Regulations will have an impact on Indigenous governments that are responsible for roads at grade crossings and for road approaches to the grade crossings where the road approaches impact on the safety of the grade crossings. The amendments will provide relief by allowing more time to comply with the Regulations. Going forward, TC will engage with impacted Indigenous governments, as necessary, to ensure the successful implementation of the Regulations.

In accordance with the *Cabinet Directive on the Federal Approach to Modern Treaty Implementation*, an analysis was undertaken to determine whether the Regulations were likely to give rise to modern treaty obligations. This assessment examined the geographic scope and subject matter of the Regulations in relation to modern treaties in effect and no modern treaty obligations were identified.

Instrument choice

The amendments to the Regulations were needed to address the practical reality that thousands of grade crossings would not be in compliance with upgrade requirements by the previous regulatory deadline of November 28, 2021. In addition, TC determined that the scope of application of the Regulations was too broad: some grade crossings are sufficiently low risk that they do not need to be subject to upgrade requirements.

TC considered some alternatives to regulatory intervention, including a status quo option where no extension to the original compliance deadline would be made and TC would enforce all requirements beginning on November 28, 2021. However, TC determined that, given the broad scope of the anticipated non-compliance, enforcement actions would carry a high cost for both TC and industry stakeholders, and would not be practical or sufficient to bring grade crossings into compliance as expeditiously as possible. After consulting extensively with industry stakeholders, TC has concluded that regulatory intervention would be the only practical way to address the compliance situation and ensure that upgrades are completed as soon as possible with a focus on upgrading crossings of the highest risk first.

TC also considered granting ministerial exemptions under the RSA for such grade crossings; however, it was determined that the authority to grant such exemptions would not extend to construction requirements set out in the

Regulations. Therefore, TC concluded that regulatory amendments were needed to establish exemptions to the requirements set out in sections 19 to 96 of the Regulations.

Regulatory analysis

Benefits and costs

The amendments will provide financial relief to affected stakeholders by introducing a compliance exemption for low-risk grade crossings, and by delaying the compliance deadlines for high-priority and other types of crossings for one year and three years, respectively. The total benefits (avoided and delayed capital investment) associated with the amendments are estimated to be $110.76 million between 2021 and 2030 (present value in 2020 Canadian dollars at a 7% discount rate).

The amendments will also result in a loss of safety benefits that would have been realized under the 2014 Regulations. [10] The total costs of the amendments are estimated to be $244.03 million for the same period (present value in 2020 Canadian dollars at a 7% discount rate).

Accordingly, the amendments will result in a net cost of $133.27 million between 2021 and 2030 (present value in 2020 Canadian dollars at a 7% discount rate).

Analytical framework

Benefits and costs associated with the amendments are assessed based on comparing the baseline scenario against the regulatory scenario, in accordance with the Treasury Board Secretariat's *Policy on Cost-Benefit Analysis*. The baseline scenario depicts what is likely to happen in the future if the Government of Canada did not implement the amendments to the Regulations. The regulatory scenario provides information on the expected outcomes of the amendments.

This analysis estimates the impact of the amendments over a 10-year analytical period from 2021 to 2030, with the year 2021 being when the regulatory amendments are registered.

Unless otherwise stated, all dollar values are expressed in 2020 Canadian dollars, discounted to the year 2021 at a 7% discount rate for the 10-year analytical period.

Baseline and regulatory scenarios

For the purposes of this analysis, it was assumed that, in the baseline scenario, all types of grade crossings would have been required to comply with the safety upgrade requirements by the November 2021 deadline prescribed in the 2014 Regulations. [11] This assumption is predicated on the proposition that, in the absence of an alternative, TC would have to enforce the 2014 Regulations.

In the regulatory scenario, low-risk grade crossings will no longer be required to comply with the safety upgrades requirements. In addition, the compliance deadlines for high-priority and other grade crossings will be delayed by one year and three years, respectively. In anticipation of the amendments, it is expected that railway companies and road authorities would not have taken compliance actions on grade crossings if they had not met the safety upgrade requirements by January 2021. Based on stakeholder consultations, the non-compliance rate of grade crossings depends on specific provisions prescribed in the Regulations. The non-compliance rate and the compliance requirements are listed in tables 1 and 2, respectively.

Table 1 — Grade crossings non-compliance rate in January 2021

Responsible entity	Provisions in the Regulations	Non-compliance rate

Railway companies	**One-time upgrade**	
	Railway crossing sign (73)	4.00%
	Operational control circuits — cut-out (70)	1.00%
	Operational control circuits — approach warning time — design speed (69)	5.00%
	Additional light units — cantilevers (68(1))	9.00%
	Additional front light units — multi-lane roads (68(1))	9.00%
	Additional back light units — multi-lane roads (68(1))	9.00%
	Additional back light units — one-way roads (68(1))	9.00%
	Additional front light units — one-way roads (68(1))	9.00%
	Additional light units — curve on road approach (68(1))	9.00%
	Additional light units — intersection road approach (68(1))	9.00%
	Additional light units — sidewalks and paths (68(1))	9.00%
	Annual maintenance	
	Clearing sightlines — public (21(2))	9.00%
	Clearing sightlines — public (21(1))	13.00%
	Clearing sightlines — private (21(2))	22.00%
	Clearing sightlines — private (21(1))	1.00%
Road	**One-time upgrade**	

authorities	Railway crossing ahead sign (66(1)(a))	51.00%
	Railway crossing ahead sign (66(1)(b))	51.00%
	Stop sign and Stop ahead sign (64 [Stop sign] and 65 [Stop ahead])	17.00%
	Stop ahead sign (65)	100.00%
	Active advance Prepare to Stop at Railway Crossing sign (67)	5.00%
	Annual maintenance	
	Clearing sightlines — public 21(2)	100.00%
	Clearing sightlines — public 21(1)	100.00%

Source: Transport Canada, Rail Safety Integrated Gateway (RSIG) inspection results 2020.

Table 2 below compares compliance requirements under the baseline and regulatory scenarios in detail, by type of grade crossings.

Table 2 — Compliance requirements under the baseline and regulatory scenarios, by risk level of grade crossings

Type of grade crossings	Compliance requirement — baseline scenario	Compliance requirement — regulatory scenario	Difference

Low-risk grade crossings	Comply with safety upgrades by November 2021	Exempted from safety upgrades	It is no longer required to upgrade and maintain these grade crossings. Some responsible entities will realize cost savings from a one-time upgrade and all entities would realize cost savings from ongoing maintenance expenses.
High-priority grade crossings	Comply with safety upgrades by November 2021	Comply with safety upgrades by November 2022	Some responsible entities will delay their capital investment on upgrade by one year and all entities will delay maintenance expenses by one year.

Other grade crossings	Comply with safety upgrades by November 2021	Comply with safety upgrades by November 2024	Some responsible entities will delay their capital investment on upgrade by up to three years and all entities will delay maintenance expenses by three years.

Stakeholder profile

A railway grade crossing is a joint facility of a road or a private authority and a railway company. The amendments apply to up to approximately 23 300 federally regulated grade crossings, and affect 20 railway companies, along with road authorities and private authorities that are responsible for complying with the safety standards set out in the Regulations.

Railway companies

Among the affected 20 railway companies, Canadian National (CN) and Canadian Pacific (CP) are the two leading freight railway companies; together they own approximately 94.47% of the federally regulated grade crossings in Canada. Central Maine and Quebec Railway Canada Inc., also a freight railway company, is the third company with the most grade crossings, owning approximately 1.80% of the federally regulated grade crossings. In terms of railway passenger transportation, VIA Rail is the leading company and owns around 0.98% of the federally regulated grade crossings. The remaining 2.75% of the federally regulated grade crossings are owned by the

other 16 railway companies.

All of these railway companies are considered large businesses except for one, which is considered a small business and which owns around 0.04% of the grade crossings in Canada.

Road authorities

A road authority is the body responsible for the care, control or management of roads within a given jurisdiction. Under the amendments, road authorities, where appropriate, will share the responsibilities of upgrading and maintaining grade crossings with railway companies. There are two types of road authorities: public road authorities and private road authorities.

Public road authorities

Public road authorities share responsibilities with the railway companies on public grade crossings, which are defined as grade crossings located on public roads. There are three types of public road authorities: municipalities, provinces, and band councils. An estimated 1 450 municipalities, 9 provinces, 2 territories and almost 100 band councils are subject to the amendments.

The amendments will affect approximately 13 000 federally regulated public grade crossings. Approximately 65% of these public grade crossings are located in three Canadian provinces: Saskatchewan (28%), followed by Ontario (21%) and Alberta (16%). [12] The majority of public grade crossings associated with Indigenous communities are found in British Columbia.

Private road authorities

Private road authorities share the safety responsibility with railway companies on private grade crossings, which are defined as grade crossings located on private public roads. Private road authorities are usually the owners of private roads. The share of costs between private road authorities

and railway companies are outlined in agreements between the two parties or filed with the Agency. Although, in practice, private road authorities may incur costs borne by railway companies with making sure the requirements of the Regulations are met, TC is not able to assess the proportion of costs to private road authorities, as it does not have access to private contracts between parties. The Agency is responsible for making cost apportionment decisions if the parties are unable to reach an agreement.

In Canada, there are more than 10 000 private crossings. Approximately 70% of these private grade crossings are located in three Canadian provinces: Quebec (25%), followed by British Columbia (24%) and Ontario (21%). [12]

Canadian public

The Canadian public will also be affected by the amendments, as accidents at grade crossings can result in fatalities, serious injuries and property damages.

From 2010 to 2019, a total of 232 fatalities and 271 serious injuries at all railway grade crossings were recorded by the TSB. Vehicle drivers are at particular risk, because the failure to yield to a train at a grade crossing or being stuck in the path of a locomotive can result in a severe collision that leads to fatality or serious injury. Vehicle occupants also face similar risks.

Benefits

The benefits (cost savings) associated with the amendments are twofold: avoided capital investment on low-risk grade crossings as they are exempted from compliance, and delayed capital investment on high-priority and other grade crossings as they will need to comply with the safety upgrade requirements one year and three years later than the compliance deadlines originally prescribed in the 2014 Regulations, respectively.

Expected benefits were calculated using the unit costs multiplied by the

number of grade crossings. It is estimated that the total cost savings will be $110.76 million, with $41.04 million in savings to railway companies and $69.72 million to road authorities. More specifically,

- $13.41 million will be associated with low-risk grade crossings, with $5.38 million to railway companies and $8.03 million to road authorities;
- $4.11 million will be associated with high-priority grade crossings, with $1.66 million to railway companies and $2.45 million to road authorities; and
- $93.24 million be associated with other types of grade crossings, with $34.0 million to railway companies and $59.24 million to road authorities.

Table 3 outlines the total number of affected grade crossings under the responsibility of railway companies and road authorities, by compliance cost and risk type.

Table 3 — Compliance costs and number of affected railway grade crossings by risk type

Responsible entity	Provisions in the Regulations	Compliance cost ($/grade crossing)	Number of affected low-risk grade crossings	Number of affected high-priority grade crossings	Number of affected other grade crossings
Railway companies	**One-time upgrade**				
	Railway crossing sign (73)	$1,714	208	0	435

Operational control circuits — cut-out (70)	$22,852	22	233	730
Operational control circuits — design approach warning time (69)	$22,852	122	1 292	4,058
Additional light units — cantilevers (68(1))	$57,131	84	892	2,800
Additional front light units — multi-lane roads (68(1))	$2,857	50	530	1,664
Additional back light units — multi-lane roads (68(1))	$1,143	50	530	1,664
Additional back light units — one-way roads (68(1))	$1,143	5	52	162
Additional front light units — one-way roads (68(1))	$2,857	5	52	162
Additional light units — curve on road approach (68(1))	$2,857	44	465	1,461
Additional light units — intersection road approach (68(1))	$2,857	66	698	2,191

	Additional light units — sidewalks and paths (68(1))	$22,852	2	26	81
	Annual maintenance				
	Clearing sightlines (21(2))	$1,143	92	235	2,721
	Clearing sightlines (21(1))	$1,143	374	833	6,491
	Clearing sightlines (21(2))	$377	21	0	57
	Clearing sightlines (21(1))	$377	238	0	497
Road authorities	**One-time upgrade**				
	Railway crossing ahead sign (66)	$571	62	659	2,070
	Railway crossing ahead sign (66)	$571	191	425	3,310
	Stop sign and Stop ahead sign (64 [Stop sign] and 65 [Stop ahead])	$571	35	61	729
	Stop ahead sign (65)	$571	158	458	2,122
	Active advance Prepare to Stop at Railway Crossing sign (67)	$57,131	6	65	203
	Annual maintenance				

	Clearing sightlines 21(2)	$2,285	92	235	2,721
	Clearing sightlines 21(1)	$2,285	374	833	6,491

Source: Transport Canada, Rail Safety Integrated Gateway (RSIG) inspection results, 2020.

The amendments also provide flexibility to private road authorities, who are responsible for safety upgrades at existing high priority and other grade crossings: if these grade crossings have not been equipped with a warning system, then the private road authorities have the option to install either an alternative warning system or warning system as prescribed in the 2014 Regulations. As a result, the amendments may benefit private road authorities should they opt to install an alternative warning system, which could be less costly compared to a full warning system. Due to lack of information, this benefit is not quantified in this analysis.

While the estimates of these bills can vary, TC has been advised by railway companies that the cost of a warning system could cost $300,000 to $600,000 or higher. Meanwhile, an alternative warning system is estimated to cost approximately $200,000.

Exemption of low-risk grade crossings

The amendments exempt low-risk grade crossings from complying with the safety upgrade requirements originally prescribed in the 2014 Regulations. Therefore, responsible entities of these grade crossings will experience a one-time upgrade cost saving if they have not complied with the current requirements of the 2014 Regulations by January 2021, and an annual maintenance cost saving. The unit cost and the number of affected grade crossings are detailed in Table 3 above.

As a result, the total cost savings associated with exempting low-risk grade crossings is estimated to be $13.41 million, with $5.38 million in savings to railway companies and $8.03 million to road authorities.

Delay of compliance deadlines for high-priority and other grade crossings

High-priority grade crossings

Given that high-priority grade crossings will be subject to a one-year delay of compliance, responsible entities will benefit from delaying the capital investment on one-time upgrades and on annual maintenance. The unit cost and the number of affected grade crossings are detailed in Table 3 above.

As a result, the total cost savings (delayed capital investment) associated with high-priority grade crossings are estimated to be $4.11 million, with $1.66 million in savings to railway companies and $2.45 million to road authorities.

Other grade crossings

As other grade crossings will be subject to a three-year delay of compliance, responsible entities will benefit from delaying the capital investment on the one-time upgrade and on annual maintenance. The unit cost and the number of affected grade crossings are detailed in Table 3 above.

As a result, the total cost savings (delayed capital investment) associated with other grade crossings is estimated to be $93.24 million, with $34.0 million in savings to railway companies and $59.24 million to road authorities.

It is also worth noting that for high-priority and other grade crossings, the expected cost savings are due to the time preference of spending the capital investment at a later time, as the investment not spent in 2021 can be saved or invested in other ventures and earn some return.

Costs

The costs of the amendments will be carried by two groups: railway companies and Canadians. The exemption to low-risk grade crossings from complying with safety upgrades and the delay of compliance deadlines for high-priority and other grade crossings would result in a higher number of collisions than would be expected in the baseline scenario (i.e. the scenario where all grade crossings comply with the safety upgrades requirements by November 2021). This means that in the regulatory scenario, more fatalities, serious injuries and property damage will be expected. The total costs associated with the amendments are estimated to be $244.03 million.

Collisions

In the transportation safety literature, a common approach to estimating the expected reduction in collisions at a site is to use a collision modification factor (CMF). CMFs are used to represent the expected change in collision frequency resulting from the introduction of changes, usually countermeasures, at a site and thus represent the expected effectiveness of the collision countermeasures. Based on the estimated CMF that will result from the required safety upgrades at federally regulated grade crossings, the annual number of collisions that will be avoided by implementing these requirements are presented in Table 4.

Table 4 — Annual avoided collisions involving railway equipment, by type of grade crossings

Type of collision	Type of grade crossings	Public grade crossings	Private grade crossings	Total
Collisions involving railway equipment	**Low-risk grade crossings**	1.33	0.39	1.72
	High-priority grade crossings	12.90	0	12.90

	Other grade crossings	44.13	1.30	45.43
	Total	**58.36**	**1.69**	**60.05**
Collisions not involving railway equipment	**Low-risk grade crossings**	4.34	1.25	5.59
	High-priority grade crossings	41.92	0	41.92
	Other grade crossings	143.42	4.24	147.66
	Total	**189.68**	**5.49**	**195.17**

Sources: Transportation Safety Board collision data and National Collision Database.

This analysis considered two types of collisions at grade crossings: those involving railway equipment, and those not involving railway equipment. As previously described, the reduction in collisions involving railway equipment was estimated using a CMF from required safety upgrades. In order to estimate the reduction of collisions not involving railway equipment resulting from the implementation of the safety upgrades at non-compliant crossings, TSB collision data and data from the National Collision Database were compared for the period between 1998 and 2002. Based on this analysis, a ratio of the number of collisions not involving railway equipment to the number of collisions involving railway equipment was derived at 3.25 collisions.

This analysis assumes that the amendments will not affect the expected annual avoided collisions (shown in Table 4). However, since low-risk grade crossings are exempted, fewer avoided collisions (i.e. more collisions) are expected under the regulatory scenario compared with those under the baseline scenario over the 10-year analytical period. In addition, due to the

delayed compliance deadlines for high-priority and other grade crossings, even fewer avoided collisions (i.e. even more collisions) are also expected between 2021 and 2023. In total, the amendments could result in additional 707 collisions between 2021 and 2030, 166 of which would involve railway equipment and 541 would not involve railway equipment. A higher number of collisions would be associated with more fatalities, serious injuries, and property damages.

Fatalities and serious injuries

The annual numbers of additional fatalities and serious injuries were estimated by multiplying the number of additional collisions per year, and fatality and serious injury ratios of collision at public and private crossings, respectively. The fatality and serious injury ratios were obtained from TSB collision data, using a 10-year average of fatalities and serious injuries per collision at public and private grade crossings from 2010 to 2019. Table 5 presents these average ratios, if they are involved with railway equipment or not.

Table 5 — Average fatality and serious injury ratios of collision (2010–2019)

Type of collision	Public grade crossings		Private grade crossings	
	Fatality ratio	Serious injury ratio	Fatality ratio	Serious injury ratio
Collisions involving railway equipment	0.154	0.169	0.045	0.122
Collisions not involving railway equipment	0.003	0.016	0.003	0.016

Sources: Transportation Safety Board collision data and National Collision Database (NCDB).

It is estimated that the amendments could result in 26 additional fatalities and 36 additional serious injuries over the 10-year analytical period.

The fatalities are monetized using the value of a statistical life (VSL) of $7.99 million per fatality, in accordance with the Treasury Board Secretariat (TBS) *Policy on Cost-Benefit Analysis*. The value of serious injuries is assumed to be 13.42% of the VSL, [13] which is about $1.07 million per serious injury.

As a result, the cost associated with additional fatalities and injuries at grade crossings is estimated to be $231.15 million.

Property damages

Collisions at grade crossings can cause property damages to railway equipment and road vehicles, and thus would affect both rail companies and Canadians. Costs associated with property damages vary, depending on whether collisions involve railway equipment or not. Details are presented in Table 6 below.

Table 6 — Percentage of collisions involving damage to property and average costs, per damage type for collisions involving railway equipment

Collisions involving railway equipment		
Type of property damage	**Percentage of collisions involving property damage [a]**	**Average cost per collision [b]**
Railway equipment	100%	$5,942

a Transportation Safety Board rail collision data and National Collision Database from 1998 to 2002.

b Data provided by Canadian National Railway, Canadian Pacific Railway, and the Insurance Bureau of Canada.

Road vehicle	94%	$13,309
Derailment	4%	$883,244
Collisions not involving railway equipment		
Type of property damage	**Number of vehicles damaged per collision**	**Average cost per vehicle**
Road vehicle	1.41	$7,313

a Transportation Safety Board rail collision data and National Collision Database from 1998 to 2002.

b Data provided by Canadian National Railway, Canadian Pacific Railway, and the Insurance Bureau of Canada.

The annual cost of property damage was estimated by multiplying the additional number of collisions that would involve each type of property damage per year and the average costs presented in Table 6. The total cost associated with property damage is estimated to be $12.88 million, $7.74 million of which result from collisions involving railway equipment and $5.14 million from collisions not involving railway equipment.

Cost-benefit statement

Number of years: 10 (from 2021 to 2030)

Base year for costing: 2020

Present value base year: 2021

Discount rate: 7%

Table 7 — Monetized costs

Impacted stakeholder	Description of costs	Base year (2021)	Other relevant years	Final year (2030)	Total (present value)	Annualized value
Canadians	Fatalities and serious injuries	$91.29	$1.88	$1.25	$231.15	$32.91
Canadians	Property damages	$2.77	$0.07	$0.04	$7.06	$1.0
Railway companies	Property damages	$2.28	$0.05	$0.04	$5.82	$0.83
All stakeholders	**Total costs**	**$96.34**	**$2.0**	**$1.33**	**$244.03**	**$34.74**

Table 8 — Monetized benefits

Impacted stakeholder	Description of benefit	Base year (2021)	Other relevant years	Final year (2030)	Total (present value)	Annualized value
Railway companies	Avoided capital investment due to exemption of low-risk grade crossings	$1.27	$0.51	$0.34	$5.38	$0.77

Road authorities	Avoided capital investment due to exemption of low-risk grade crossings	$1.09	$0.87	$0.58	$8.03	$1.14
Railway companies	Delayed capital investment due to extension of compliance deadlines for high-priority and other grade crossings	$39.62	−$17.14	$0	$35.66	$5.08
Road authorities	Delayed capital investment due to extension of compliance deadlines for high-priority and other grade crossings	$24.42	−$0.57	$0	$61.7	$8.78
All stakeholders	**Total benefits**	**$66.40**	**−$16.33**	**$0.92**	**$110.76**	**$15.77**

Table 9 — Summary of monetized costs and benefits

Impacts	Base year (2021)	Other relevant years	Final year (2030)	Total (present value)	Annualized value
Total costs	**$96.34**	**$2.0**	**$1.33**	**$244.03**	**$34.74**
Total benefits	**$66.40**	**–$16.33**	**$0.92**	**$110.76**	**$15.77**
NET IMPACT	**–$29.94**	**–$18.33**	**–$0.41**	**–$133.27**	**–$18.97**

Qualitative impacts

Cost savings to private road authorities responsible for safety upgrades at existing high priority and other grade crossings.

- The amendments could benefit private road authorities for which the grade crossing meets the criteria should they opt to install an alternative warning system, which could be less costly compared to a full-warning system prescribed in the 2014 Regulations.

While the estimates of these bills can vary, TC has been advised by railway companies that the cost of a warning system could cost $300,000–$600,000 or higher. Meanwhile, an alternative warning system is estimated at costing approximately $200,000.

Sensitivity analysis

A sensitivity analysis was conducted to test uncertainties around key variables. Two different approaches are used to analyze uncertainty in the cost-benefit estimates: a single-variable sensitivity analysis and scenario sensitivity analysis.

Single-variable sensitivity analysis

The single-variable sensitivity analysis examines how the estimated net benefits would change if an assumption around one variable is changed at a time. The following variables were considered for the single-variable sensitivity analysis: the unit price for grade crossing safety upgrades, the fatalities and injuries ratio of a grade crossing collision, the discount rate, and the total years in the analytical period.

In terms of benefits, the sensitivity analysis considers the scenario where unit prices for complying with safety upgrades would be either 15% lower (lower benefit case), or 15% higher (higher benefit case). In terms of costs, the sensitivity analysis considers a situation where the fatalities and injuries ratios would be either 5% lower (lowest cost case) and 5% higher (highest cost case). Table 10 below presents the sensitivity analysis results.

Table 10 — Single-variable sensitivity analysis

Variable	Net benefit (in millions)
Costs	
Low fatalities and injuries ratios	−$121.71
Central case	**−$133.27**
High fatalities and injuries ratios	−$144.82
Benefits	
Low-unit price estimate	−$149.88
High-unit price estimate	−$116.65
Discount rate	
0%	−$147.46
3%	−$140.95

Analytical period	
15 years	–$134.88
20 years	–$135.99

Scenario sensitivity analysis

A scenario sensitivity analysis was conducted where lowest, most probable, and highest benefits and costs were considered. For this exercise, costs and benefits are evaluated at their extreme values simultaneously such that the net benefits can be analyzed at their upper and lower bounds. The variables that were considered for this analysis are the same as those used for the cost and benefit single-variable sensitivity analysis, but they are combined simultaneously, arriving at six different scenarios, as presented in Table 11.

Table 11 — Net benefits under scenario analysis (in millions of dollars)

		Benefits		
		Lowest	**Most probable**	**Highest**
Costs	**Lowest**	–$138.32	–$121.71	–$105.10
	Most probable	–$149.88	**–$133.27**	–$116.65
	Highest	–$161.44	–$144.82	–$128.21

Small business lens

The small business lens applies, as there are cost savings for small businesses associated with the regulatory amendments.

Based on summary data provided by the Railway Association of Canada, it was determined that one of the railway companies that owns federally regulated grade crossings will be impacted by the amendments. This small business owns approximately 0.04% of the federally regulated grade crossings. The cost savings to the impacted small business is estimated to be

$17,079 total, or $2,432 annualized. It is possible that a portion of private road authorities (small landowners) could be considered small businesses. As previously described, if some of them are responsible for sharing the cost of upgrading and maintaining grade crossings with railway companies, then they may also benefit from the amendments, as the capital investment will be either avoided or delayed. However, due to lack of data, the cost savings attributed to these small businesses could not be estimated.

Small business lens summary

Number of small businesses impacted: 1

Number of years: 10 (2021 to 2030)

Base year for costing: 2020

Present value base year: 2021

Discount rate: 7%

Table 12 — Compliance cost savings to small businesses

Activity	Annualized value	Present value
Cost savings (financial relief)	$2,432	$17,079
Total compliance cost savings	**$2,432**	**$17,079**

One-for-one rule

The one-for-one rule does not apply to the amendments, as there is no incremental change in administrative burden on businesses, nor do the regulatory amendments introduce or repeal a regulatory title.

Railway companies and road authorities were required to share information with each other for existing public grade crossings within two years of the coming into force of the Regulations in order to allow for each party to

assess the safety of their infrastructure and plan accordingly (by November 28, 2016). This requirement was set out to ensure each stakeholder had the most up-to-date information to ensure safety at grade crossings (e.g. information on the interconnection between traffic signals and warning systems). Stakeholders have confirmed that they have already complied with these administrative requirements.

Regulatory cooperation and alignment

The amendments apply equally to grade crossings on the rail lines of all federally regulated railway companies in Canada.

The regulatory amendments were not introduced to comply with an international agreement or obligation, nor do they have any impacts related to a work plan or commitment under a formal regulatory cooperation forum. The amendments have also not been introduced to align with another jurisdiction, standard-setting body, or international organization, nor are they part of an existing formal regulatory cooperation initiative.

Strategic environmental assessment

In accordance with the *Cabinet Directive on the Environmental Assessment of Policy, Plan and Program Proposals* and the TC Policy Statement on Strategic Environmental Assessment (2013), the strategic environmental assessment (SEA) process was followed for these regulatory amendments and a sustainable transportation assessment was completed. No impacts were identified, as the primary objective of this regulatory initiative was to amend the 2014 Regulations in order to extend the compliance deadline for certain public and private crossings and add exclusions from some provisions of the 2014 Regulations for low-risk crossings using a risk-based approach.

Gender-based analysis plus

No gender-based analysis plus (GBA+) impacts have been identified for this

regulatory initiative. TC sought stakeholder comments on this proposal using its “Let’s Talk Transportation” web consultation portal. No concerns were expressed by stakeholders that the amendments could have differential impacts on the basis of identity factors such as gender, race, ethnicity, or sexuality.

The data on accidents is insufficient to accurately identify specific vulnerable groups or to compare accidents between different communities. Urban areas would have more accidents due to the higher number of urban crossings and higher vehicle and train traffic volumes. In a published report on rail transportation occurrences, the TSB stated: “In 2019, the proportion of crossing accidents that occurred at public automated crossings was 50%, compared with 27% at public passive crossings. Although there are nearly twice as many public passive crossings than public automated crossings, the higher number of accidents occurring at automated crossings is due, in part, to higher vehicle and train traffic volumes at these crossings.”

Rationale

Although the amendments will result in a net cost, TC has determined that, overall, the amendments are in the public interest as they (i) address the fact that thousands of grade crossings are not able to meet the original compliance deadline of November 28, 2021; and (ii) help ensure that required upgrades to high priority crossings are prioritized and completed as expeditiously as possible. The amendments will also provide temporary financial relief to rail companies, municipalities, road authorities and farmers in the wake of the impacts of the COVID-19 pandemic.

Implementation, compliance and enforcement, and service standards

The amendments to the Regulations come into force upon registration.

As part of due diligence in support of the extension to compliance deadlines, and mindful of the complexity of the responsibilities for safety at grade crossings as well as the large number of stakeholders involved (such as railway companies, municipalities, individual landowners, and other entities), TC engaged with railway companies immediately following the prepublication of the proposed amendments to seek formal plans to comply with the updated deadlines, including monthly progress updates.

To further support compliance with the Regulations, TC has developed guidance materials and made them available to stakeholders in advance of the publication of the regulatory amendment in the *Canada Gazette*, Part II, for use by stakeholders during the period leading up to the new deadlines for compliance.

No further flexibilities on compliance deadlines will be provided to stakeholders. Once the extended compliance periods have ended, TC will take a graduated and proportionate enforcement approach in accordance with the Rail Safety Oversight Policy to educate, deter, and, when necessary, penalize those who contravene the RSA or its associated regulations. In the event of non-compliance with the Regulations, where the new compliance deadline is not met for a given crossing, TC would consider the stakeholder's behaviour and willingness to comply before taking appropriate enforcement action, which could range from a letter of warning to an administrative monetary penalty of up to $250,000.

To ensure that the Regulations are applied in a fair, impartial, predictable and nationally consistent manner, guidance materials will be developed to align with the Rail Safety Directorate's existing compliance and enforcement regime. Training will be provided to Rail Safety officials within existing programs. Adding this guidance to the existing training program will ensure that departmental officials take a standard approach in similar circumstances to achieve consistent results.

Contact

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Footnotes

a S.C. 2015, c. 31, s. 19

b S.C. 2012, c. 7, ss. 13(1) and (2)

c S.C. 1999, c. 9, s. 12

d S.C. 2015, c. 31, s. 23

e R.S., c. 32 (4th Supp.)

1 SOR/2014-275

2 According to information TC received from surveys sent to industry in December 2020.

3 Grade Crossings Inventory — Open Government Portal (canada.ca)

4 Average annual daily railway movements means the number of movements of engines, or engines coupled with railway equipment, across a grade crossing in a year, divided by the number of days in that year.

5 Railway design speed means the railway equipment speed that corresponds to the current design of the grade crossing.

6 Storage distance means, on a road that crosses a grade crossing, the shortest distance between the rail nearest the road approach of the grade crossing and the edge of the nearest intersecting road, measured along the centre line of the road, as represented by D in Figure 11-1 of the *Grade Crossings Standards*.

7 Cross-product means the product obtained by multiplying the average annual daily railway movements by the average annual daily traffic.

8 Canadian Transportation Agency, Railway Crossings.

9 Guide to Railway Charges for Crossing Maintenance and Construction 2019.

10 (ARCHIVED) *Grade Crossings Regulations*

11 The affected population of grade crossings per responsible entity varies by provision.

12 Data drawn from Transport Canada’s grade crossing inventory.

13 T. Miller. N., Bergeron, and B. Lawrence, “Motor Vehicle Injury Valuation for Canada’s National Collision Database Economic Analysis”, 2016.