

# RAILWAY-ROADWAY GRADE CROSSINGS REGULATIONS

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## SUMMARY

Canada has been in the process of developing a policy on grade crossing safety for many years. The development of the Grade Crossings Regulations (GCR) is a Transportation Safety Board of Canada (TSB) and Transport Canada (TC) priority. Consequently, the Rail Safety directorate at TC has put forward a rigorous work plan to deliver on that priority and ensure the policy is published as a Canadian regulation on grade crossing safety in 2014. Canada's authority to develop such a regulation is pursuant to the *Railway Safety Act* (RSA).

Over the years, it has become obvious that there is a need to regulate the safety of grade crossings in Canada in order to further reduce grade crossing collisions. Grade crossings are owned by both, road authorities and railway companies and it is this multi-jurisdictional nature of grade crossings that is at the root of many safety deficiencies at grade crossings. As such, the importance to clarify roles and responsibilities between those two entities has become a key element in achieving that goal. Owners of grade crossings also need to share safety information about their infrastructure in order to ensure that certain minimum safety standards are met at grade crossings.

The presentation will update delegates on the development of the Grade Crossings policy and its attached Standards scheduled to become Regulation in 2015.

## INTRODUCTION

The safety of the transportation system is a key priority of the federal government. The RSA gives the Minister of Transport responsibility for the oversight of railway safety. In particular, the Minister is expected to "promote and provide for the safety of the public and personnel, and the protection of property and the environment, in the operation of railways."<sup>1</sup> The RSA establishes responsibilities, functions and obligations with respect to railway safety and penalties for contraventions of the Act, and authorizes the Governor in Council to make regulations including regulations respecting crossing works<sup>2</sup>.

A railway grade crossing is a joint facility of a road authority or a beneficiary of a private grade crossing and a railway company. There are approximately 15,600 public and 15,800 private grade crossings in Canada along 42,650 kilometres of rail lines managed by federally regulated railway companies. Road authorities at public crossings include approximately 1,450 municipalities, 9 provinces, 2 territories and almost a hundred Aboriginal bands. Beneficiaries of private grade crossings include owners of residential, agricultural, industrial, commercial and recreational properties and establishments.

The management of safety at railway grade crossings is problematic as a result of the complex and multi-jurisdictional nature of the crossing environment. The knowledge and cooperation of public road authorities, private crossing beneficiaries and railway companies is required in order to manage safety effectively, yet the efforts of these parties are currently neither universal nor comprehensive.

On their Watchlist,<sup>3</sup> the TSB has identified the risk of passenger trains colliding with vehicles in busy rail corridors as one of the nine transportation safety issues posing the greatest risk to Canadians. To reduce this risk, TC is working with stakeholders in order to develop the best regulations for the safety of Canadians at grade crossings.

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<sup>1</sup> *Railway Safety Act*, Section 3(a).

<sup>2</sup> *Railway Safety Act*, Section 18.

<sup>3</sup> <http://www.tsb.gc.ca/eng/surveillance-watchlist/depliant-brochure/brochure.asp>

## **HISTORICAL BACKGROUND:**

Work and extensive consultations regarding the development of the GCR have been ongoing since the introduction of the RSA in 1989. Consultations on the Policy have been conducted during three distinct stages, 1991-1995, 1999-2006 and 2011-2013, with multiple stakeholders, including the public, railway companies, road authorities, including band councils, associations representing grade crossing owners, unions and other government departments.

From 1991 to 1995, consultations took place with provincial ministries of transportation, the Railway Association of Canada (RAC) and member railway companies, and the Federation of Canadian Municipalities (FCM) and many member municipalities. As a result, a policy and technical standards were drafted by the end of 1995. Further development of these drafts was put on hold pending the outcome of the *Railway Safety Act Review* of 1995.

Between 1999 and 2003, stakeholder discussion forums were held across Canada. Working groups comprised of representatives of provinces, municipalities, railway companies, railway unions and the Canadian Federation of Agriculture developed another version of the draft policy and the *Road/Railway Grade Crossings Technical Standards and Inspection, Testing and Maintenance Requirements* (RTD 10). A draft of the RTD 10 has been generally followed with respect to construction and alterations of grade crossings by interested parties since January 2003 even if stakeholders had remaining issues with some of its content.

From 2002 to 2006, a pilot project was developed in partnership with officials of railway companies and provincial and municipal road authorities to test the safety evaluation processes and their efficiency. The pilot project led to the development of the *Grade Crossing Safety Assessment Guidelines*. Further evaluation established that the guidelines could not resolve all outstanding issues, such as roles and responsibilities. While the guide is still considered best practice, it was not considered a cost-efficient means to address the safety shortcomings at all crossings.

Concerns remained in particular, with respect to the standards, roles and responsibilities, and the costs of the implementation of the regulatory proposal. In 2011, TC revised the draft policy and the technical standards in an attempt to address these concerns and in early 2012, started a final round of national consultations with the public, grade crossing owners, associations, unions and other government departments.

## **THE ISSUE THE REGULATIONS WOULD SOLVE:**

While there is a long history of railway grade crossing safety legislation and regulation, a number of gaps remain. Most importantly, the roles and responsibilities of road authorities, beneficiaries and railway companies for monitoring conditions and maintaining safety at grade crossings have never been defined. As a result, crossings with safety deficiencies, including those that develop deficiencies due to traffic growth, changes to road or railway operations, or changes in the crossing environment are not systematically identified and addressed. Rather, grade crossing safety deficiencies are identified on an ad hoc basis following collisions, complaints from the public, complaints from railway employees or road officials, or through an evaluation by a TC Railway Safety Inspector (RSI). The current system is “corrective” rather than “preventive”.

There is a lack of enforceable standards for ensuring the safety of railway grade crossings. The *RSA* requires both railway companies and road authorities to apply “sound engineering principles” to grade crossings but it provides no further guidance. The *Safety Management System Regulations*, the *Railway-Highway At-Grade Regulations*, and the *Highway Crossings Protective Device Regulation*, pursuant to the *RSA* contain more detail but only railway companies are required to comply with these regulations, and not road authorities nor private crossing beneficiaries. The *RTD 10*, contain detailed safety standards reflecting current grade crossing safety technologies. While these standards reflect the way railway companies currently manage safety at crossings to a large degree, they are not enforceable and grade crossings that fail to meet these safety standards may have elevated risks that go undetected for long periods of time.

In order to apply many of the standards contained in the RTD-10, and more generally, in order to assess risk, monitor conditions and maintain safety at grade crossings, road and railway information must be shared between road authorities or beneficiaries of private crossings and railway companies. At present, information sharing occurs only on a voluntary and ad hoc basis.

Also, the RSA provides authorities that can only be prescribed by regulation with respect to the whistling cessation as well as providing access to adjoining land to clear sightlines.

These gaps put the safety of Canadians at risk. Unaddressed safety deficiencies result in needless loss of life, injury and property damage at railway grade crossings every year. Between 2008 and 2012, at both public and private crossings, collisions involving railway equipment resulted in an average of 28 serious injuries and 25 fatalities annually. On average, between 2008 and 2012, there was one fatality for every eight collisions at grade crossings,<sup>4</sup> and one serious injury<sup>5</sup> for every seven collisions. In addition, trains are derailed in one out of every 40 crossing collisions, often resulting in significant property damage and transportation system delays.

The primary objective of the regulatory proposal is to ensure that railway companies, road authorities and the beneficiaries of private grade crossings oversee and manage the safety of their crossings in accordance with sound engineering principles, and in a manner similar to other road and railway infrastructure.

The proposed regulations are intended to:

- clarify the roles and responsibilities of railway companies, road authorities and the beneficiaries of private grade crossings;
- ensure the sharing of key safety information between railway companies and road authorities or beneficiaries; and
- establish enforceable safety standards for grade crossings,

so that a reasonably safe environment exists for persons travelling on the road and rail line. The implementation of the proposed regulations is expected to:

- stem the creation of new safety deficiencies at grade crossings;
- ensure that all existing grade crossings consistently meet “baseline” safety standards;
- be phased-in over a 7 year period after the coming into force; and
- be focused on making grade crossings owners accountable.

The proposed regulations also respond to a number of other TSB recommendations, including:

- horizontal alignment standards for approaches to private and farm crossings;
- upgraded pedestrian protection systems on multiple-track mainline crossings in populated areas warranting attention; and
- improved visibility of emergency contact signage at crossings.

The coming into force of the GCR would fix that legal gap.

## **THE PROPOSED POLICY BY THEMES:**

### **Clear roles and responsibilities:**

In their report, *On Track*, the RSA Review Committee of 1994 noted, “... the effort to improve crossing safety has not been effective in recent years. This is not the fault of any one party, but is the natural result of a multi-jurisdictional problem than encompasses a myriad of safety variables”. A report from second review of the RSA, issued in 1998, recommended that the responsibilities of all concerned parties with respect to crossings be clarified. Since 1996, when the regulated environment of railway operations in Canada was amended with the introduction of the *Canadian Transportation Act*, the number of railway companies grew rapidly as Canada’s two major railway companies divested significant parts of their operations. Today, there are approximately 71 federally regulated (includes 31 federally regulated and 40 local railway companies), 8

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<sup>4</sup> Compared to other types of traffic collisions, grade crossing collisions result in 10 times more fatalities.

<sup>5</sup> Serious injury is defined as an injury that is likely to require admission to hospital. The TSB provided data on serious injuries is available from 1993 onward.

provincially regulated railway companies – These are the Ontario short lines that are under federal jurisdiction sharing grade crossings with approximately 1,300 different public road authorities and thousands of individuals and organizations with private road crossings. This multiplicity of players has increased the complexity of managing crossing safety and the need for clearly defined roles and responsibilities.

A grade crossing, being the joint facility of one or more road owners and one or more railway companies and an interface between two distinct modes of transportation with different operational and safety characteristics, the roles and responsibilities of railway companies and road authorities need to be well understood by each stakeholder as they are both responsible for the safety of their grade crossings.

The Regulations would identify and clarify the roles and responsibilities of grade crossing owners to ensure the safe passage of vehicles and trains at grade crossings:

Example: At public grade crossings, the railway company would be responsible for the design, construction and maintenance of railway crossing signs, grade crossing warning systems and the emergency notification signs whereas the road authority would be responsible for the design; construction and maintenance of the road approaches up to the crossing surface, traffic control device, devices that inter connect with grade crossing warning systems. The beneficiary of a private grade crossing would be responsible for the design, construction and maintenance of the road approaches and traffic control devices outside the railway right-of-way limits.

### **Sharing of information:**

Given the duality of the nature of a grade crossing; both road authorities and railway companies hold information on their infrastructure that are key to its safety. In order for one party to be able to make the best safety decisions for its share of responsibility, it must be aware of certain information from the other party.

The Regulations would require both railway companies and road authorities responsible for public grade crossings to share with one another specific information that would be contained into an appendix of the Regulations. This information would need to be shared within a certain time period (proposed 7 years) and both parties would be required to keep the latest information. Also, the Minister would be able to request and obtain the latest information from the railways.

Example: Amongst other things, the railway company would have to share the number of tracks and crossing angle as well as the maximum rail operating speed and the road authority would have to share the safe stopping distance and the grade crossing design vehicle.

### **One Canadian safety standard for grade crossings:**

The Canadian Grade Crossing Standards (GCS) is a document that would be incorporated by reference to the Regulations that provides best engineering practices for the safety oversight of grade crossings. It includes clear safety standards that meet the safety goals of the RSA and provide an enforcement tool for inspection purposes that would improve consistency by bringing all grade crossings in Canada under one safety standard. The GCS is the result of the RTD-10 that has been modified following consultations to meet the Regulations requirements. The Regulations would ensure that all grade crossings meet minimum safety requirement to be considered safe. "Baseline" requirements would need to be met before a certain date (7 years after the coming into force of the Regulations) whereas additional safety requirements would apply only when grade crossings are "new" or subject to an "alternation or operational change" or when the crossing surface is "renewed".

Example: Baseline requirements include crossing surface, road approach condition, sightlines, traffic control devices, light unit alignment, warning times and operational control circuits whereas new crossings would be require to meet all of the requirements in the Standards.

### **Safety documentation/records:**

The Regulations would provide for required documentation including plans and forms required for the installation, maintenance, inspection and testing of the grade crossing warning systems and traffic control devices when a crossing is built or altered as well as requiring responsible authorities to keep records for maintenance, inspection and testing. This would allow railway safety inspectors to access documents from railway companies during inspections.

### **Train operations:**

There is no regulatory limit on the amount of time a train can block a crossing while moving. Currently, railways are required to comply with the *Canadian Rail Operating Rules* (CROR) which prescribes a 5-minute time limit for operations over a grade crossing, such as standing and switching. The CROR does *not* apply to a moving train, which may occupy the crossing as long as required. The impact of such a legal gap results in complaints from road users when trains block crossings for long periods of time. Departmental records show that motorists can be stopped at a crossing for up to 60 minutes or more.

The issue of trains occupying grade crossings for lengthy periods of time is not an easy one to regulate and this is why it is not surprising that exhaustive discussions between major stakeholders and TC were held during consultations. Those discussions helped bring more clarity and understanding to all parties.

Amongst other factors, railways have dramatically increased their train lengths since 2008 while municipalities have been expanding in proximity of railways, thus creating an unsafe environment at grade crossings that needs to be addressed. Lengthy occupations of grade crossings creates negative behavioural changes in grade crossing users where studies have demonstrated that risks are then taken to unsafely speed through the crossing to try and “beat” trains or to traverse between parked train cars. The *Railway Safety Act Review*, 2008 also acknowledged that blocked crossings have become a safety concern. The safety concerns are also very real when first responders are delayed at a crossing that can be blocked for long periods of time.

The Regulations would provide an obligation on railway companies not to block crossings with railway equipment for more than a specified period of time. It would be prohibited for a train, engine or other railway equipment to block passage of a road user requiring passage over a railway grade crossing for more than a specific period of time. This provision would not apply for emergency situations or circumstances beyond the control of the railway company.

**Train whistling:** Train whistling is an important warning device to help keep grade crossing users safe. Under the current *Canadian Railway operating Rules* (CROR), s.14, train whistling must be used at all public grade crossings. Some municipalities consider train whistling a nuisance for nearby residents and the RSA s. 23.1 allows for the cessation of its use if certain conditions are met including prescribed requirement in a Regulation. The Regulations would therefore prescribe those requirements and allow for municipalities, after passing a municipal resolution, and having consulted with the railway company and given public notice of its anti-whistling proposal, to ban the use of the whistle.

Example of prescribed requirements: Public crossings may be required to have flashing lights and bells, Z-barriers and guide fencing.

**Traffic flow creating threat to safe railway operations:** Traffic flow should not result in the obstruction of a grade crossing causing a threat to safe railway operations. Should there be evidence of queuing or vehicles stuck over the grade crossing surface, the Regulations would provide for a responsible authority to take the necessary measures to resolve the safety concern.

Example: This could be resolved by adjusting with appropriate signage for roadways within 30m of the nearest rail, etc.

### **Prohibitions:**

The Regulations would prohibit against building a new grade crossing in areas where the operating speed exceeds the speed (proposed 110 mph) at which it is safe to have a grade crossing or if the road is a freeway as classified in the *Canadian Geometric design Guide*.

It would also provide for prohibitions to ensure safe sightlines, as calculated in the GCS, are met at grade crossings.

Examples: Buildings or other structures, not being railway works, objects or trees or brush on land adjoining the land on which the line of railway is situated and where that land is immediately adjacent to a grade

crossing, that are obscuring clear vision either of a road or a line of railway or obstructing sightlines and constitute a treat to safe railway operations.

### **Use of crossings:**

Obligations on a railway company and a road authority when one or the other determines there is no more use of a road or a railway line at a grade crossing. Obligations would also be provided when a railway company resumes its use of the railway line or the road authority resumes its use of the road at a grade crossing.

Example: If a grade crossing has not been in use for a period of three years or more, the responsible authorities must, before railway equipment or road users are allowed to operate over the grade crossing, ensure that it meets the GCS that would be applicable to it if it had remained in use.

### **Temporary protection measures:**

The Regulations would provide for obligations on responsible authorities when construction or other temporary disruptions affect public grade crossings.

Example: The responsible authority carrying out the work must follow the technical guidelines and standards in respect of the control of traffic in a work zone that are established by the road authority and as set out in Part D of the *Manual of Uniform traffic Control Devices* (MUTCD).

## **THE BEST POLICY FOR CANADIANS:**

### **Consultations:**

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Extensive consultations have taken place since 1991 with railway companies, provincial governments, and municipal road authorities. One last round of consultations from 2012-2013 was conducted in 3 phases: 1. Online consultations including the public, 2. Face to face meetings with stakeholders and 3. Extended consultations with major stakeholders.

On June 21, 2012, Transport Canada completed a series of targeted national consultation meetings with grade crossing owners. The consultation meetings constituted the second phase that began with a 60-day online consultation conducted from January 30, 2012 through April 24, 2012, which was open to the public.

As a result of comments received, Transport Canada extended its regulatory consultation process to continue the discussions with main stakeholders on specific issues. Modifications were made to the draft policy to minimize the financial impact on both road authorities and railway companies, while maintaining Transport Canada's objective for safer grade crossings.

Although stakeholders may have diverging opinions on different elements of the draft policy, all agree on its intent in principle to improve safety at grade crossings.

### **Best policy value for its cost:**

The cost of the proposed Regulations would be borne by railway companies (78.5%), road authorities (provinces (13.3%), municipalities (7.7%) and Aboriginal bands (0.1%)) and the beneficiaries of private crossings (0.3%). The present value of the expected cost of the regulations would be estimated over a 25 year time horizon of the analysis at a 7% discount rate. The baseline requirements account for the vast majority of the costs. The single largest cost is for changes to the design approach warning times followed by the clearing of sightlines.

A sampling exercise was carried out by TC RSIs in the summer of 2011 to determine current rates of compliance to the baseline requirements. Unit costs for each of the requirements of the baseline requirements are estimated from an analysis of claims submitted to TC's *Grade Crossing Improvement Program* (GCIP) as well as information from stakeholder consultations. Most of those costs are assumed to be one-time costs to be spread over the proposed implementation period of seven years for all crossings.

Other ongoing costs such as clearing sightlines is expected to result in an ongoing annual cost over a twenty five-year time horizon and phased in over the implementation period.

Where current practice is not fully compliant with the proposed requirement, the incremental costs are estimated by TC RSIs based on their experience and input from stakeholders.

The proposed regulations would be expected to improve crossing safety and reduce the number of collisions with railway equipment as well as the number of collisions not involving railway equipment that occur in the vicinity of grade crossings as a result of the presence of the crossing, e.g. rear-end collisions with another vehicle slowing or stopped for an approaching train, and collisions with vehicles or off-road objects as a result of the loss of motor vehicle control during attempts to avoid a rear-end collision or a collision with a train. The benefits of the regulations would be estimated as the value of the expected fatalities, injuries and property damage associated with these prevented collisions.

For each type of crossing, the number of collisions with railway equipment expected to be prevented as a result of the implementation of the baseline standards at non-compliant crossings, over and above the decline expected over the next twenty five years in the absence of the regulations, is estimated using Collision Modification Factors (CMFs) obtained from the literature review and TC's GradeX Grade Crossing Risk Analysis Tool. The number of collisions not involving railway equipment is assumed to be reduced by the same percentage as the number of collisions involving railway equipment.

The number of prevented fatalities is estimated from the estimated number of prevented collisions using estimated fatality rates per collision for public and private crossings and for collisions not involving railway equipment. The number of prevented fatalities is monetized using the value of statistical lives (VSL) recommended by the Treasury Board of Canada (\$7.04M 2011 dollars).

The number of prevented injuries is estimated from the estimated number of prevented collisions using estimated injury rates per collision for public and private crossings and for collisions not involving railway equipment. The number of prevented injuries is monetized using an approach developed by the US Federal Transportation Administration (\$405,000 dollars per serious injury).

Historical data on the rate of occurrence and the cost of damage to railway property and equipment (\$5,200 dollars per incident<sup>6</sup>), damage to road vehicles (\$11,600 per vehicle involved in a collision with railway equipment, \$6,400 per vehicle involved in a collision not involving railway equipment<sup>7</sup>), and derailments (\$773,000 per derailment<sup>8</sup>) are used to monetize the benefit of reduced property damage.

The regulations are also expected to generate a number of qualitative benefits including improved corridor fluidity, improved quality of life and reduced complaints<sup>9</sup>, and improved effectiveness of Transport Canada's Grade Crossing Improvement Program. In addition, by clarifying roles and responsibilities for crossing safety between railway companies and road authorities or the beneficiaries of private crossings and reducing current ambiguity, the proposed regulations would be expected to increase the attention paid to safety deficiencies at crossings and improve accountability for crossing safety.

The net benefit of the proposed policy (present value of the benefits minus the present value of the costs) provides for a positive cost ratio for the regulations.

An analysis conducted to test the sensitivity of the net benefit to the expected collision reduction, the estimated implementation cost, and the discount rate showed the net benefit is strongly influenced by the expected collision reduction resulting from implementation of the baseline standards. The discount rate has a less significant impact. A higher discount rate reduces the present value of both benefits and costs but reduces benefits to a greater extent than costs because benefits occur later in the time horizon than do costs. Of the twenty-seven scenarios tested in the sensitivity analysis, none resulted in a negative net benefit. Based on the results of the sensitivity analysis, it is likely that the regulations would result in a significant positive net benefit even with deviations from the expected levels of key parameters.

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<sup>6</sup> From data provided by CN and CP.

<sup>7</sup> From data obtained from the Insurance Bureau of Canada.

<sup>8</sup> From data provided by CN and CP.

<sup>9</sup> Proposed provisions prohibiting obstruction of a crossing (s.5.1.4)

## CHARACTERISTICS OF THE POLICY:

**Risk based approach:** An exchange of information between railway companies and road authorities or the beneficiaries of private grade crossings on crossing conditions is essential to understanding and managing grade crossing risks. By clarifying roles and responsibilities and requiring stakeholders to share information, the Policy is expected to improve knowledge of crossing conditions and cooperation between parties in ensuring that appropriate safety standards are met. With that knowledge in hand, railway authorities will be best placed to address in a much more proactive fashion, their crossing deficiencies.

**National consistency:** The safety of the grade crossing environment depends to a large degree upon the conditions at grade crossings being consistent with the expectations of people using the crossing. Inconsistency contributes to driver confusion about appropriate behaviours and constitutes a safety hazard.

One of the key elements of the Policy is its attached GCR formally known as the RTD-10. The latter document has been used by stakeholders for more than 10 years and has been accepted as best engineering practice in this field, in particular for the construction and alteration of grade crossings.

The Regulations would bring under one common Standard, all of Canada. As such, consistency in the maintenance, alteration and construction of grade crossings would become consistent across the country. The Regulations would also be used by all stakeholders, regulators and would also be viewed as a good example to follow for other levels of government or non-federally regulated railways in Canada. For example, the regulations may also apply to crossings on provincially regulated railway lines in Ontario, New Brunswick, Nova Scotia and Manitoba (at the discretion of provincial authorities) as these provinces currently adopt federal railway safety standards.

As most railway companies operate in several provinces, consistent national standards are expected to improve railway efficiency by streamlining employee training, manuals, operating procedures, recording keeping, etc. This should in turn improve driver understanding of signs and signals leading to safer driver behaviours and a decrease in collision rates at grade crossings.

**Sightlines as a key element:** The RSA, s. 26.2 states that “The users of a road shall give way to railway equipment at a road crossing if adequate warning of its approach is given”. Road users include all grade crossing users including pedestrians, cyclists, Long Combination Vehicles (LCVs), mobility challenged scooters, powered wheelchairs. Road users must give way to railway equipment at grade crossings, but only if they have been given adequate warning of its approach. On the other hand, the consequences of when the railway equipment has not given adequate warning of its approach and the road user having right of way may be fatal for them. Rail Safety is of the opinion that “adequate warning” includes adequate sightlines at a grade crossing as well as headlights, ditch lights, whistling and the operation of warning systems in compliance with rules and regulations. In this optic, it is believed that road users should be able to see a train approaching unless the crossing is equipped with lights, bells and gates.

Sightlines are also a very good example of the challenges TC had to overcome during the developmental phase of the Policy when it came to roles and responsibilities. For instance, where does the responsibility of sightlines of a railway end and where does that same responsibility start for a road authority.

## WHERE WE AND NEXT STEPS:

Since it first started consultations, Rail Safety has always followed the Treasury Board of Canada direction on developing national safety regulations. When it started its last round of consultations in 2011, Rail Safety conformed to the *Cabinet Directive on Streamlining Regulation*, dated April 1, 2007 and then had to comply with the new *Cabinet Directive on Regulatory Management* since April 1, 2012. Prior to 2007, Rail Safety followed the *Government of Canada Regulatory Policy* of 1999.

In following the *Cabinet Directive on Regulatory Management* (CDRM), Rail Safety has to ensure that “its regulatory activities result in the greatest overall benefit to current and future generations of Canadians”.

It did so by following the governing principles of the Directive which include, amongst others, the protection and advancement of the public interest in rail safety at grade crossings while ascertaining that the benefits of the regulation would justify the costs, by making its decisions based on evidence and on the best available knowledge and science, by controlling the administrative burden on business, and by creating accessible, understandable and coherent regulations for Canadians.

Following the above CDRM, Rail Safety is moving forward with its policy by finalizing the regulatory documents such as the Cost-Benefit Analysis, the Performance Measurement and Evaluation Plan, the Regulatory Impact Analysis Statement, all in parallel with the drafting of the Regulations process. It is expected that the Policy will be published as a regulatory proposal in the Canada Gazette, part I, by Summer 2014. Through that formal publishing process, stakeholders will have an additional 120 days for consultations. The objective would be that the regulations come into force in June 2015. Rail Safety would then enter into the implementation phase of the Regulations.

## **CONCLUSION**

There are significant shortcomings in the safety oversight and management of conditions at road and railway grade crossings, which do not exist elsewhere in the management of the railway and road infrastructures.

Existing legislation sets out broad parameters for the application of sound engineering principles, risk management, and a requirement for an adequate warning of road users of the approach of a train. However, their application to the oversight and management of the safety of existing grade crossings is not well understood across a wide spectrum of public road authorities, private road owners and railway companies, making both compliance and enforcement difficult issues.

As a result, changes in road or railway operations are not always evaluated and mitigated where warranted; crossings that do not meet baseline standards or pose a higher risk because of inadequate traffic control and warning systems may go undetected for extended periods of time before they are addressed.

The Regulations would clearly outline the responsibilities of road authorities and railway companies and establish safety standards in the public interest. The common space of a grade crossing is an unforgiving environment in that operators of trains cannot alter the direction of a train nor effectively alter its speed to avoid a collision; the margin for human error at grade crossings being very low.

Crossings are a joint facility; road owners and railway companies have a mutual obligation to monitor and manage their risk. It is in the public interest that they share information and work together so that grade crossings of roads and rail lines are reasonably safe.

It is very important that road users entering the grade crossing environment be provided consistently with adequate warning of the approach or presence of a train, just as it is very important for road users and train operators to behave in a responsible manner by following the road and railway rules.

The Regulations are intended to ensure that the warning provided to road users is adequate and consistent for all public and private grade crossings along federally regulated rail lines. The Regulations would formally establish the engineering standards for the construction, inspection and maintenance of grade crossings to afford crossing users an adequate warning. The result would be well-managed and reasonable safe crossing environments, in line with other road and rail infrastructures.