

Queensland Level Crossing Safety Strategy 2012–2021

2019 Update: On Track to ZERO Harm

Queensland Level Crossing Safety Group





The Queensland Level Crossing Safety Group is composed of representatives from state and local government and the rail and road industry who have responsibilities relating to improving level crossing safety. It is led by the Department of Transport and Main Roads.

The Queensland Level Crossing Safety Group advises and makes recommendations on the policy directions, management and standards for public level crossings in Queensland. The Queensland Level Crossing Safety Group also provides the overall direction to achieve the objectives of the Queensland Level Crossing Safety Strategy.

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Foreword

Zero harm at level crossings across Queensland is the long-term vision of the *Queensland Level Crossing Safety Strategy 2012–2021*. The strategy aims to eliminate level crossing collisions, reduce the number of near miss incidents at level crossings and minimise the impact of any incidents that occur. It was developed by the Department of Transport and Main Roads collaboratively with representatives from local and state government organisations and industry and was launched in July 2012.

Since the launch of the strategy there has been significant changes in the road and rail environment. Responsibility for regulatory oversight of both rail safety and heavy vehicles in Queensland has moved from the Department of Transport and Main Roads and is now administered nationally through the Office of National Rail Safety Regulator and the National Heavy Vehicle Regulator respectively. In addition, the Australian Transport Safety Bureau is now responsible for conducting no blame rail safety investigations in Queensland. Finally, in 2016 the *National Railway Level Crossing Safety Strategy 2017–2020* was launched by the National Level Crossing Safety Committee with the aim to guide national coordination and practice on level crossing safety across jurisdictions.

While it is pleasing that in recent years there has been a significant improvement in the number of level crossing incidents more still needs to be done to reach 'zero harm'. It is timely that the Queensland Level Crossing Safety Group has reviewed and refreshed the strategy to ensure that it continues to be responsive to the level crossing safety needs of the Queensland community in the current environment.

The *2019 Update: On Track to ZERO Harm* builds upon achievements to date and sets out the priority actions for the next two years, ensuring Queensland remains on the path to zero harm.

In this update the focus remains the improvement of level crossing safety through actions relating to the three key themes of people, vehicles and infrastructure and knowledge to address the challenges of:

- reducing the number of 'near misses' each year
- improving coordination between road managers and rail infrastructure managers to increase safety
- managing the congestion and safety risks resulting from growing passenger and freight road and rail traffic
- encouraging new major resource and infrastructure projects to find solutions, alternate to building new level crossings and minimising any impact on existing level crossings.

The Queensland Government believes all level crossing incidents are ultimately avoidable. We will continue to work together with all levels of government, industry, safety regulators and the Queensland community to reduce the safety risks and prevent deaths and injuries at level crossings.



The Honourable Mark Bailey MP
Minister for Transport and Main Roads



Introduction

The Queensland Level Crossing Safety Group has reviewed and updated the *Queensland Level Crossing Safety Strategy 2012–2021* (the strategy) to guide the next two years of the strategy, building upon the improvement of level crossing safety in Queensland since the strategy’s release in 2012.

When the strategy was introduced in 2012, level crossing safety incidents accounted for about 25 percent of all rail fatalities and serious injuries in Queensland. In a state that aims for ‘zero harm’ in transport safety, this statistic was too high. In the five years following the implementation of the strategy, level crossing incidents have accounted for approximately 10 percent of all rail fatalities and serious injuries. This is a significant safety record improvement that requires sustained efforts to continue this downward trend towards ‘zero harm’.

It was timely to review the strategy for 2019 with many key changes including the transfer of rail safety regulation in Queensland to the Office of the National Rail Safety Regulator from 1 July 2017, the Australian Transport Safety Bureau becoming responsible for conducting no blame rail safety investigations in Queensland, changes in level crossing data collection, the commencement of the National Heavy Vehicle Regulator, and the launching of the *National Railway Level Crossing Safety Strategy 2017–2020*.

The Queensland Government believes all level crossing incidents are ultimately avoidable. The Queensland Government continues to work, with stakeholder support from local and state governments and industry, to champion the strategy which aims to eliminate level crossing collisions, reduce the number of near miss incidents and minimise the impact of any incidents that occur.

Under the strategy, rail and road stakeholders through the Queensland Level Crossing Safety Group have committed to work collaboratively to address 12 areas of strategic focus across three themes: people, vehicles and infrastructure, and knowledge. This update to the strategy focuses on the priority strategic actions across the same three themes of people, vehicles and infrastructure, and knowledge for the period 2019 to 2021.

This 2019 update is consistent with *National Railway Level Crossing Safety Strategy 2017-2020* and the Office of the National Rail Safety Regulator’s Level Crossing Policy. It also complements *Safer Roads, Safer Queensland: Queensland’s Road Safety Strategy 2015–2021* in the level crossing context.

A reliable state transport network is vital for connecting people, places, goods and services. It is in everyone’s interests that road and rail users work together to make this network as safe and efficient as possible.



Vision and aims

The long-term vision of this strategy remains 'zero harm' at level crossings across Queensland.

In 2019–2021, the strategy continues to aim to:

- eliminate level crossing collisions
- reduce the number of near miss incidents at level crossings
- minimise the impact of any incidents that occur.

Scope

The strategy will continue to focus on the higher risk public level crossings in Queensland, as defined below, which includes approximately 1410¹ crossings along nearly 10,000 kilometres of railway tracks.

A level crossing is defined by Australian Standard 1742.7-2016 as *any crossing of a railway at grade, providing for both vehicular traffic and other road users including pedestrians.*

The strategy targets all users of level crossings, including train crew and passengers, road vehicle drivers, riders, passengers and pedestrians. The strategy also recognises the role of road and rail stakeholders such as the Local Government Association of Queensland, Australian Sugar Milling Council and Queensland Trucking Association in improving level crossing safety.

While focused on public level crossings, the strategy also acknowledges that with over 1400 private/occupational crossings in Queensland, the use of these crossings requires continual monitoring by rail infrastructure managers and road managers to ensure management of safety risks at those locations.

¹ Since the introduction of the strategy in 2012 approximately 200 level crossings have been closed, including two grade separations completed in South East Queensland with joint state-local government funding.

Challenges

Queensland's level crossing safety record continues to trend well when compared with other states, territories and with other countries. To achieve our vision of 'zero harm' ongoing work must be undertaken. The Queensland Level Crossing Safety Group recognises and commits to addressing these challenges:

- reducing the number of 'near misses' each year, each one a potential fatal or serious injury collision in slightly different circumstances
- improving coordination between road managers and rail infrastructure managers to increase safety
- managing the congestion and safety risks resulting from growing passenger and freight road and rail traffic
- encouraging new major resource and infrastructure projects to find solutions, alternate to building new level crossings, and minimising any impact on existing level crossings

Factors contributing to collisions

There continues to be no single reason for level crossing collisions and 'near misses' occurring. Contributing factors can include:

- people, especially road users, and the extent to which they obey the law and respond appropriately to the circumstances of the current environment
- vehicles and infrastructure, including speed limits, the design of vehicles, and the design and condition of level crossings and level crossing environments
- the overall management of road-rail interfaces, including coordination between service providers, the allocation of resources, and the ways in which knowledge is applied to enhance safety.

Number of collisions and 'near misses'

Many level crossing incidents that occur are potentially dangerous, although do not result in an actual collision. Often there are 'near misses' between a train and a road vehicle or pedestrian. Sometimes there is damage to level crossing infrastructure, or equipment failure.

In the five years since the introduction of the strategy, from 2012 to 2017, there have been approximately 490 level crossing incidents per year including 'near misses', compared to 527 reported incidents per year between 2001 and 2011. In the same five-year period since the strategy commenced, there were approximately 9.4 reported level crossing collisions per year compared to 19.6 per year between 2001 and 2011.

Impacts of collisions

Any level crossing collision can cause service disruptions, property damage, injury and in the most tragic cases, death. This can result in substantial social and economic impacts, as well as a loss of confidence in the public transport system. The combination of speed and increase in passengers and freight travelling on intersecting rail and road systems raises significant concerns about the potential for high impact or catastrophic incidents and fatalities.

From 2001 to 2011, collisions at Queensland level crossings resulted in 2.3 deaths per year 4.5 hospitalisations per year. This is an average of over six serious casualties annually. In the five year period following the commencement of the strategy the number of fatalities has decreased to 0.4 per year and hospitalisations has decreased to 1.4 per year.

While this demonstrates that average annual rates of level crossing safety incidents have reduced, the amount of level crossing safety occurrences remains unacceptable. In particular, heavy vehicle traffic has specific risks that need to be considered.

National context

There continues to be a high level of commitment from governments and the rail industry to make level crossings as safe as possible. In recent years, investments have included additional warning signs, road markings, flashing lights and boom gates. This strategy builds on these achievements, and is consistent with the range of existing national, state and local work to improve rail and road safety.

In Queensland the Queensland Level Crossing Safety Group, which consists of local and state government and industry representatives, was established to oversee the strategy which takes into consideration national priorities and provides a forum for the establishment of road/rail interface agreements between rail infrastructure managers and road managers.

At the national level the National Level Crossing Safety Committee, an inter-organisational and interjurisdictional committee, supports members in continuously improving safety at level crossings. The role of the National Level Crossing Safety Committee is to provide strategic direction and a national, coordinated approach in addressing level crossing safety. In 2017, the National Level Crossing Safety Committee launched the *National Railway Level Crossing Safety Strategy 2017–2020* and its associated Action Plan. This document replaced the *National Railway Level Crossing Safety Strategy (2010–2012)* released by the former Australian Transport Commission in 2009.

From 1 July 2017, rail safety regulatory functions were transferred from the Queensland's Department of Transport and Main Roads to the Office of the National Rail Safety Regulator. The Office of the National Rail Safety Regulator administers the Rail Safety National Law which requires all Queensland road managers (which consist primarily of local government and the Department of Transport and Main Roads), and rail infrastructure managers (including Queensland Rail, Aurizon Network, Australian Rail Track Corporation and certain Tourist and Heritage rail operators) to enter into interface agreements to jointly manage level crossing safety risks. The road managers of private roads may also be required to enter into interface agreements if the responsible rail infrastructure manager has determined that risks to safety must be managed in conjunction with the road manager.

It is also worth noting that the establishment of the National Heavy Vehicle Regulator, shortly after the release of the strategy, has shifted relevant responsibilities, such as load, speed and fatigue management relating to heavy vehicle risks in Queensland, to the National Heavy Vehicle Regulator.



Queensland approach

Considering the challenges and complexity of level crossing safety management, this strategy continues to take an approach which is:

- **broad-based**, seeking the involvement of the wide range of stakeholders with shared responsibilities across all possible aspects of level crossing safety
- **balanced**, giving due weight to both behavioural and technical solutions, acknowledging the evidence that level crossing trauma is caused by human factors as much as engineering and design factors
- **collaborative**, basing action on the cooperative engagement of key stakeholders both in Queensland and nationwide
- **knowledge-driven**, basing solutions on evidence and recognising the ongoing need for comprehensive data, investigation, evaluation, research and development
- **proactive**, reducing the number and severity of collisions by addressing known risks and possible risks
- **focused**, targeting specific population groups and risks, as well as adopting more generic solutions
- **prioritised**, seeking value for money to address priority issues
- **accountable**, providing performance indicators and other mechanisms to ensure key stakeholders meet their obligations
- **based on 'safe systems'**, adapting and applying, in a railway level crossing context, internationally recognised road safety practices based on a safe system approach.

The Queensland approach is consistent with, and supplements, the 'safe system' approach of the *National Railway Level Crossing Safety Strategy 2017–2020*.



Strategic Actions

The focus of the strategy is the improvement of level crossing safety through actions in 12 key areas relating to three main themes:

- People – everyone uses the level crossing safely
- Vehicles and infrastructure – vehicles and infrastructure are designed to maximise safety
- Knowledge – research and existing knowledge are used to increase safety.

The Queensland Level Crossing Safety Group will continue to support relevant specific actions that align with the 12 key areas under these three main themes:

People

1. Coordinate level crossing services
2. Increase public awareness
3. Address risk to specific population groups
4. Enforce the law

Vehicles and infrastructure

5. Equip trains, train crews and road vehicles to reduce risk
6. Reduce heavy vehicle risk
7. Maintain and improve level crossing infrastructure
8. Control level crossing environments
9. Eliminate level crossings where appropriate

Knowledge

10. Evaluate safety initiatives and investigate incidents
11. Collect and analyse data to better understand risk
12. Promote research and development

Since the commencement of the strategy in 2012, Queensland Level Crossing Safety Group members have individually undertaken initiatives to achieve outcomes relating to the implementation of these strategic actions. The key actions and performance indicators that will be the focus for the remainder of the strategy are provided in the Appendix.

The Queensland Level Crossing Safety Group will continue to review data and information provided by the Office of the National Rail Safety Regulator, to monitor the outcomes of the strategy through anticipated further decreases in the rates of level crossing collisions and ‘near misses’, as well in the rates of level crossing fatalities and serious injuries.



Review

This strategy will be reviewed to ensure it remains consistent with contemporary trends and developments. A reassessment of the strategy will occur towards the end of the strategy period (2021).



Appendix - key actions and performance indicators*

Key area of focus	Key area outcomes	Key actions	Initiative starts		
			From	2012	2019
People	Coordinate level crossing services	Coordinate level crossing activities statewide through the Queensland Level Crossing Safety Group.		▲	
		Contribute to the coordination of level crossing safety activities Australia-wide through membership of national bodies.		▲	
		Implement the Memorandum of Understanding for Management and Funding Responsibility for Level Crossing Safety.		▲	
		Facilitate the introduction of interface agreements providing for the coordination of risk management at individual level crossings.		▲	
		Support the participation of the National Heavy Vehicle Regulator in the Queensland Level Crossing Safety Group.			▲
	Increase public awareness	Promote level crossing safety through the continuous public awareness campaigns that promote overall road safety and rail safety.		▲	
		Promote level crossing safety through public awareness campaigns.		▲	
		Promote level crossing safety through National Rail Safety Week.		▲	
		Contribute to the coordination of level crossing safety activities Australia-wide and promote risk reduction approaches in Queensland.			▲
		Encourage education campaigns linked to compliance and enforcement programs to promote a safety culture across Queensland.			▲
	Address risk to specific population groups	Address risk to young people, seniors and pedestrians through road and rail safety public awareness campaigns.		▲	
		Contribute to the national project developing primary school resources on level crossing safety.		▲	
		Investigate the feasibility of installing lockable gates to prevent pedestrians from forcing gates open when a train is in the vicinity.		▲	
		Undertake the assessment of pedestrian crossings for compliance with Australian Standards.		▲	
		Endorse initiatives to address the needs of vulnerable population groups.			▲
	Enforce the law	Review the appropriateness of penalties for breaches of Queensland law in relation to level crossings.		▲	
		Enforce the road rules relating to level crossings through traffic policing.		▲	
		Amend state legislation to provide for use of level crossing safety cameras.		▲	
		Install safety cameras at selected level crossings.		▲	

Appendix - key actions and performance indicators*

Key area of focus	Key area outcomes	Key actions	Initiative starts	
			From	2012 2019
Vehicles and Infrastructure	Equip trains, train crews and road vehicles to reduce risk	Adopt Australian Standard AS7531 to enhance train conspicuity.		▲
		Assess the potential to apply new vehicle-to-vehicle warning systems as they become available.		▲
		Continue support for the Australian Design Rules as an instrument in enhancing road vehicle crashworthiness.		▲
	Reduce heavy vehicle risk	Ensure approvals for heavy vehicle use of roads will not increase level crossing risks.		▲
		Enforce multi-combination vehicle compliance with level crossing rules, route use requirements and heavy vehicle performance based standards.		▲
		Ensure new and existing approvals for heavy vehicle use are correct.		▲
		Contribute to the national project reviewing policy on use of level crossings by restricted access vehicles.		▲
		Contribute to the national project developing an education and awareness program addressing heavy vehicle overrepresentation in level crossing incidents.		▲
		Support initiatives to improve safety for heavy vehicles at level crossings.		▲
	Maintain and improve level crossing infrastructure	Continue the assessment of risk through application of the Australian Level Crossing Assessment Model (ALCAM).		▲
		Maintain level crossing infrastructure in accordance with Australian Standards.		▲
		Maintain a dedicated ongoing program of public open level crossing improvements funded by the Queensland Government.		▲
		Continue to target additional Australian and Queensland Government programs as an opportunity to fund public open level crossing improvements.		▲
		Support the development and implementation of lower-cost technologies to enhance existing controls at level crossings.		▲
	Control level crossing environments	Support the development of new approaches to existing standards.		▲
		Continue the assessment of risk related to level crossing environments through application of ALCAM.		▲
		Seek to reduce the overall level crossing risk per kilometre of rail network, utilising available risk scores in the ALCAM.		▲
		Maintain level crossing environments in accordance with Australian Standards.		▲
		Where appropriate, reduce road speeds in the approach to level crossings.		▲
		Ensure local planning approvals do not increase risk at level crossings.		▲
		Monitor the use of private level crossings by the public and review the safety status.		▲
	Eliminate level crossings where appropriate	Support and encourage road and rail infrastructure managers to develop, implement and comply with interface agreements.		▲
		Contribute to the national project developing agreed protocols for removal of unnecessary or rarely used level crossings.		▲
		Promote a review of under-utilised or disused level crossings.		▲
		Subject to agreement from stakeholders, close level crossings where appropriate.		▲
		Undertake grade separations in high priority locations as provided for by the Rail Crossing Grade Separation Program of the Department of Transport and Main Roads.		▲
Seek alternatives to the building of new level crossings.			▲	
	Proactively promote the 'no new level crossings' policy in Queensland, where appropriate.		▲	

Appendix - key actions and performance indicators*

Key area of focus	Key area outcomes	Key actions	Initiative starts	
			From	2012 2019
Knowledge	Evaluate safety initiatives and investigate incidents	Evaluate new safety initiatives to establish which initiatives may provide significant safety improvements.		▲
		Undertake audits of interface agreements between road managers and rail infrastructure managers.		▲
		Investigate or assess level crossing incidents, including near misses and respond to findings of investigations as appropriate.		▲
	Collect and analyse data to better understand risk	Maintain a high standard of data collection including near miss reporting.		▲
		Continue to explore opportunities for greater use of cameras for collecting data.		▲
		Undertake effective statistical analysis and provide reports enabling level crossing safety measures to be better targeted.		▲
		Contribute to national initiatives towards better data quality and coordination, including a national policy and standard for level crossing data.		▲
		Continue to utilise Australian Level Crossing Assessment Model and other data resources to identify current risks and solutions, including level crossing closures.		▲
		Share our knowledge and learnings amongst the Queensland Level Crossing Safety Group.		▲
	Promote research and development	Trial and evaluate new technologies, with emphasis on low cost solutions and use of Intelligent Transport Systems to enhance level crossing safety.		▲
		Contribute to projects of the Cooperative Research Centre for Rail Innovation and development of the national research agenda.		▲
		Participate in, and provide direction to, level crossing research activities of the Australasian Centre for Rail Innovation.		▲
		Monitor current Australian and overseas research and assess its implications for Queensland.		▲
		Contribute to the national project developing safe system guidelines for level crossing environments.		▲

* The key actions and performance indicators provided in the above table are cumulative over the life of the strategy. Some actions have already been completed. A review of actions and performance indicators will occur near the end of the strategy period.



Contact

This updated strategy is available at www.tmr.qld.gov.au/safety/rail-safety.

Enquiries can be directed to:

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