



**South Australian Level Crossing  
Safety Strategy and Action Plan**

**2010 - 2012**



**Government of South Australia**  
Department for Transport,  
Energy and Infrastructure



*State Level Crossing Strategy  
Advisory Committee*

# Contents

## Message from the Executive Director

- 1 Strategy highlights
- 2 Introduction
- 3 Objective
- 3 Scope of strategy
- 4 Situation analysis
  - 5 *Level crossing definitions*
  - 5 *Level crossing fatalities*
- 6 Strategic approach
- 6 Implementation
- 8 Level Crossing Safety Action Plan 2010-2012
  - 8 *Education*
  - 9 *Enforcement*
  - 10 *Engineering*
  - 11 *System management*





## Message from the Executive Director

### Level Crossing Safety Strategy

Safety at railway level crossings is an important issue for road users, train passengers, train drivers and their crew. Every year in Australia, an average of 37 road users, vehicle occupants and pedestrians, die as a result of collisions with trains at railway level crossings.

The number of people killed or injured in level crossing crashes in South Australia, is relatively low. However events such as the Kerang-Victoria level crossing crash show the potential for catastrophic results demonstrating the need for ongoing commitment to effective countermeasures.

The South Australian government, in partnership with rail track owners and operators and local councils, is developing ways to reduce the number of crashes and fatalities at railway level crossings, through investment in infrastructure improvements at railway level crossings and education and enforcement programs aimed at modifying vehicle driver and pedestrian behaviour.

Over the next three years an unprecedented level of funding will be allocated to level crossings. Up to \$11 million will be invested by the State Government in engineering, education and enforcement around level crossings. This includes the \$500,000 Level Crossing Black Spot program. In addition, \$13.6 million has been secured through the Federal Government's Boom Gates for Rail Crossings program.

South Australia was the first State in Australia to roll out a 'More Than One Train' warning system. In all, the warning signals will be installed at 17 sites across the network. South Australia was also actively involved in developing and implementing a national rail safety media campaign, extending this further to emphasise heavy vehicle safety at railway level crossings.

I commend the State Level Crossing Safety Advisory Committee in developing the South Australian State Level Crossing Safety Strategy and three-year action plan for managing the safety risks at railway level crossings and look forward to working with them to implement the action plan over the coming years.



**Phil Allan**

Executive Director  
Safety and Regulation Division  
Department for Transport, Energy and Infrastructure

## Strategy highlights

**Objective:**

To reduce the number, cost and trauma of crashes (and near-misses) at rail level crossings by the most cost-effective means.

**Actions include:**

- Rolling out red-light camera technology at selected rail level crossings.
- Continuing to roll out 'boom gates and flashing lights' at level crossings.
- Working with local councils to rationalise and close selected high risk level crossings.
- Funding a Level Crossing Black Spot program in partnership with local councils.
- Continuing the installation of automated pedestrian gates and the 'More Than One Train' warning system at suburban pedestrian rail crossings.
- Supporting education campaigns including targeted enforcement campaigns by South Australia Police (SAPOL) to discourage bad behaviour at level crossings.
- Establishing interface agreements between track owners and the road authority to manage level crossing risks.
- Investigating new signalling and telecommunications technologies.



## Introduction

The State Level Crossing Strategy Advisory Committee (SLCSAC) was established in 2003 to improve the coordination efforts between Government agencies and key stakeholders in improving level crossing safety, and to act as an advisory body to the Minister for Road Safety.

The Committee focus on fundamental strategies and policies to promote and assist the relevant road and rail infrastructure managers with the continuous improvement of safety to reduce crash trauma at level crossings in South Australia.

The SLCSAC meets four times a year and is chaired by the Department for Transport, Energy and Infrastructure (DTEI). Membership comprises of representatives from the following organisations:

- Australian Rail Track Corporation
- Australian Rail, Tram and Bus Industry Union
- Heritage Rail SA Inc
- Department for Transport, Energy and Infrastructure
- Genesee & Wyoming Australia
- Great Southern Railway Limited
- Local Government Association
- Pacific National
- Royal Automobile Association
- South Australia Police
- TransAdelaide.

The 2010-2012 Railway Level Crossing Safety Strategy is based on the 3E's – education, enforcement and engineering. The strategy will guide decision making and recommendations to the Minister for Road Safety.

State funds of up to \$11 m have been allocated over the next three years for engineering treatments at level crossings, an education and advertising campaign, the Black Spot program (a matching fund with local government) and proposed safety camera installations. In 2009/10 the State funds for engineering treatments will be supplemented by the Commonwealth funded Boom Gates for Rail Crossings program.



## Objective

Risks at level crossings exist for all road users including motorists, motorcyclists and pedestrians of all ages.

The objective for this strategy is to *reduce the number, cost and trauma of crashes (and near-misses) at rail level crossings by the most cost-effective means.*

## Scope of strategy

This document summarises the State Level Crossing Strategy Advisory Committee's strategy for improving the management of safety risks at railway level crossings. Level crossing safety management is the responsibility of the relevant road authorities and rail infrastructure managers, under the requirements of the Rail Safety Act 2007.

The strategy focuses on catastrophic accident and fatality risks as a result of crashes between road users and rail vehicles.



## Situation analysis

Level crossings are the point at which road and rail/tram meet and represent the single biggest source of railway and road catastrophic crash risk. Traffic control for road users varies from 'passive' signage to 'active' protection, which is a combination of lights, bells or lights and boom gates. There are 952 public access railway level crossings in South Australia, of which only 17 percent have active protection.

Research into level crossing crashes by the Australian Transport Safety Bureau (April 2008) found that unintended driver error was more common in fatal railway crossing crashes than in other fatal road crashes (46% compared with 22% of other fatal road crashes). Human factors such as driver inattention, driver distraction, risk taking and disobeying warning signage have been identified as common contributors to vehicle-train level crossing crashes. Additionally it was found that most crashes occur where the driver has a local knowledge and understanding of the railway level crossing. Every level crossing incident has the potential for significant human and financial loss.

The risk of a level crossing accident is almost exclusively the result of the road user, whether in a vehicle or on foot. Whilst infrastructure improvements will continue to reduce risk at railway crossings, increased awareness about the consequences of inattentive or risky behaviour by drivers, riders and pedestrians at railway level crossings need to be encouraged. Education about railway crossing safety is essential to address community attitudes, road user complacency and high-risk behaviour at railway crossings.



## Level crossing definitions

A level crossing is a location where a public or private roadway, footpath, or both, crosses one or more railway/tramway tracks.

Level crossings are provided with various levels of traffic control.

### Crossing with Active Warning Devices

Control of movement of vehicles or pedestrians across a railway level crossing by devices such as flashing light signals, bells or other audible warning devices, gates or barriers, or a combination of these, where the device is activated prior to and during the passage of a train or tram through the crossing.

### Crossing with Passive Warning Devices

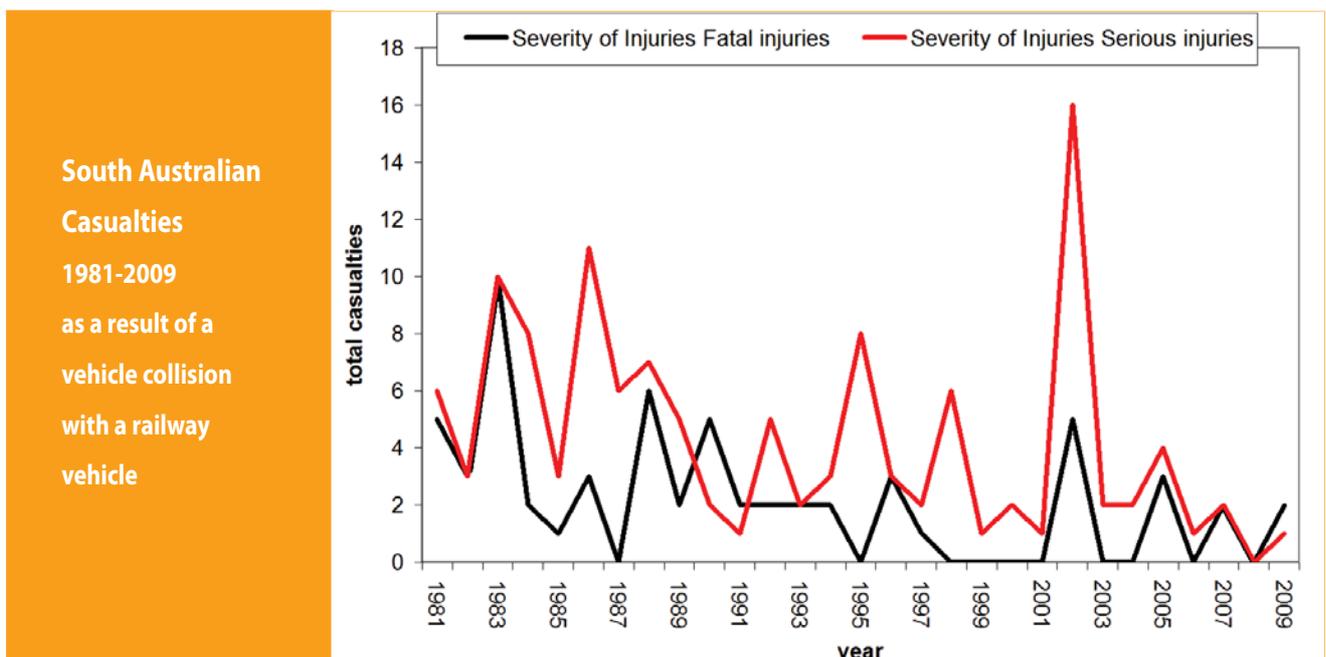
Control of the movement of vehicles or pedestrians across a railway level crossing by signs or devices, none of which are activated during the approach or passage of a train or tram, and which rely on the user detecting the approach or presence of a train by direct observation.

### Unprotected level crossing

No active or passive warning of any kind provided. This is usually a field or farm crossing.

## Level crossing fatalities

From January 2001 to December 2009 there have been 22 rail fatalities and 74 serious injuries in South Australia. During this same period there have been 84 road vehicle collisions at level crossings.



Source: South Australian Road Crash Database, Department for Transport, Energy and Infrastructure.

## Strategic approach

The State Level Crossing Strategy Advisory Committee has a long-term aim to develop recommendations for the Minister for Road Safety to reduce crash trauma at level crossings in South Australia.

The State Strategy aligns with the activities outlined in the National Level Crossing Safety Strategy and Action Plan 2010-2020.

## Implementation

Over the 2010-2012 period the focus will be on:

- Promoting level crossing safety as a road safety issue, linking into road safety messages and campaigns.
- Using current level crossing laws and technologies to support best practice.
- Working closely with the rail industry to help improve level crossing safety.
- Encouraging local councils and other stakeholders to take action to improve safety at level crossings.
- Governing the cooperative relations between all stakeholders.

The strategic areas of action are supported by the detailed Action Plan. Relevant stakeholders and the responsible agency are highlighted within the plan. The plan will be monitored and reported on at each SLCSAC meeting.

The ongoing liaison and investment of all stakeholders who have an interest in achieving the goals of this strategy will help to ensure its success.

The State Level Crossing Strategy Advisory Committee will achieve these aims by:

- Targeting resources on areas which present the greatest risk, or greatest potential for improved control.
- Supporting level crossing closures or replacement of high risk crossings.
- Promoting safety standards for level crossing design and upgrade, based on research and best practice.
- Continuing to support research and promotion for risk awareness and user behaviour, including national projects.
- Education and enforcement that generates awareness of the risks presented by level crossings.
- Implementing nationally consistent initiatives that support sharing best practice and identifying opportunities to reduce the catastrophic risk of level crossing crashes.



Issue	Strategy
<b>Education</b>	Fund and manage media campaigns, including supporting the national education campaign.
	Incorporate level crossing safety into existing pre-school, primary and secondary school road safety education packages.
	Actively participate in National Rail Safety Week.
	Liaise with road freight industry groups regarding rail safety proposals and improving user behaviour.
	Incorporate level crossing safety into road safety strategies and training programs, eg. Novice driver licensing.
<b>Enforcement</b>	Work with SAPOL to identify and target police enforcement at rail industry identified black spots.
	Further develop the application of red-light camera technology at rail level crossings and successfully prosecute offenders to reduce crossing misuse.
	Assess the effectiveness of cameras being trialled on locomotives for data collection.
<b>Engineering</b>	Develop a detailed policy statement for level crossing rationalisation.
	Implement the level crossing upgrade program.
	Review and risk assess private level crossings.
	Secure consideration of level crossing issues in local council planning decisions through the Black Spot funding program.
	Investigate new signalling and telecommunications technologies assessing suitability and on-going maintenance of level crossings.
<b>System management</b>	Continue to support the use of the Australian Level Crossing Assessment Model (ALCAM).
	National benchmarking and knowledge sharing on level crossing safety for State programs and actions.
	Carrying out risk assessments and safety audits examining safety management arrangements and crossing conditions.
	Working with and supporting track owners and road authorities in their actions to reduce level crossing risk.
	Development and implementation of information management and reporting systems to improve efficiency in relation to level crossing activities.

# Level Crossing Safety Action Plan 2010 - 2012

## Education

Strategy	Action	Responsibility
Media and education campaign	Implement an awareness advertising campaign each year supported by targeted media relations and police enforcement.	DTEI
	Implement a heavy vehicle education campaign. Install level crossing education signage at selected SA rest stop areas.	DTEI
National Rail Safety Week	Actively participate in the promotion of National Rail Safety Awareness Week, including hosting a state-based official launch.	DTEI
School road safety education	Promote safe and appropriate behaviour on trains and near railway lines through Way2Go or equivalent.	SAPOL DTEI
	Consider the inclusion of level crossing safety into road safety programs delivered to schools.	SA Metropolitan Fire Service SAPOL
Public education campaign on rail safety proposals and improving user behaviour	Promote level crossing safety through existing community road safety groups and local councils.	All
	Improve the awareness, consultation and education about the use of level crossings on private roads.	Local Govt SA Farmers Federation Track Owner Property Owner
	Incorporate level crossing safety into road safety strategies and training programs, eg. Novice driver licensing.	DTEI
	Monitor and evaluate national and international research into level crossings.	DTEI TransAdelaide
	Identify a rail level crossing ambassador/champion.	DTEI

# Level Crossing Safety Action Plan 2010 - 2012

## Enforcement

Strategy	Action	Responsibility
<b>Police enforcement</b>	Consider on-going level crossing enforcement as part of SAPOL's road safety strategy.	SAPOL
	Promote the SAPOL Traffic Watch scheme for the public to report illegal behaviour at level crossings.	SAPOL
	Consider a "cops in cabins" program as part of SAPOL's overall enforcement strategy.	SAPOL Train operator
	Consider publicising the location of level crossing campaigns in conjunction with speed camera locations.	SAPOL
	Investigate the installation of CCTV at high incident rate urban level crossings.	TransAdelaide DTEI
	Review the penalties for offences at level crossings to reflect the consequences of a level crossing crash.	DTEI
	Investigate the use of variable message warning signs to notify motorists that police will be targeting particular level crossing behaviour.	SAPOL
<b>Red-light camera technology</b>	Progress the installation of speed/red-light cameras at high incident rate urban level crossings.	DTEI SAPOL
<b>Incident reporting</b>	Trial the use of cameras mounted on the front of trains to monitor incidents along a rail line.	Train operators

# Level Crossing Safety Action Plan 2010 - 2012

## Engineering

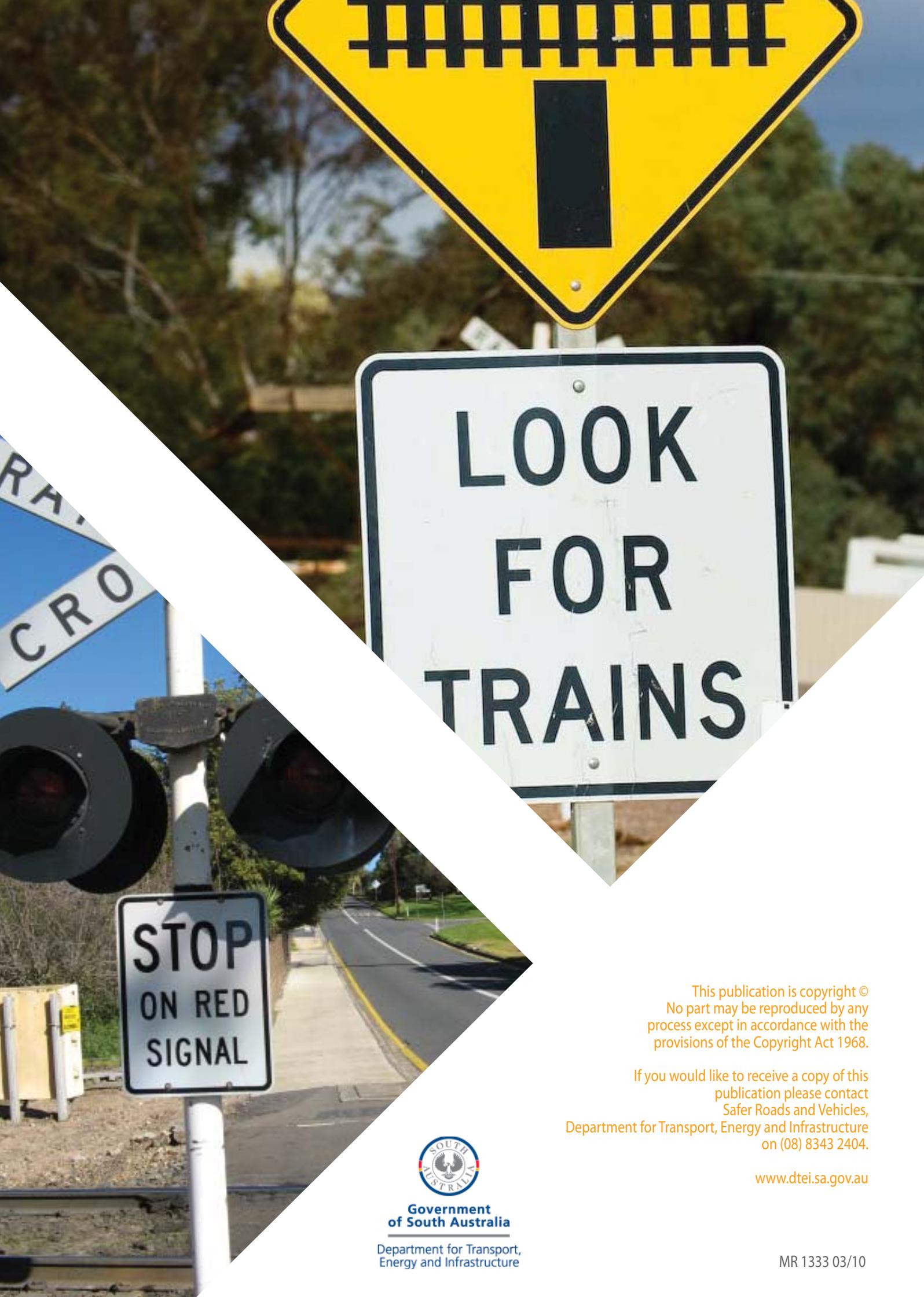
Strategy	Action	Responsibility
Level crossing upgrade program	Implement a program to ensure that the sight distance at level crossings conforms to AS1742 Part 7: Railway crossings.	DTEI Local Govt Track Owner Private Property Owner
	Continue upgrading level crossings to active protection based on a safety analysis.	Aust Govt DTEI Local Govt Rail Operator
	Continue the implementation of treatments to overcome short stacking at high risk level crossings.	Aust Govt State Govt Local Govt
	Trial the use of electronic advance warning signs at appropriate level crossings.	Aust Govt State Govt Local Govt
	Trial the provision of rumble strips on the approach to level crossings with a high incident rate.	Aust Govt DTEI Local Govt
	Continue the ongoing upgrade of advance warning signs at level crossings.	Aust Govt DTEI Local Govt Rail Operators
Pedestrian crossing upgrade program	Continue the installation of automated pedestrian gates and the 'More Than One Train' warning system at suburban pedestrian rail crossings.	TransAdelaide DTEI
	Investigate the installation of pedestrian grade separations.	Aust Govt State Govt Local Govt Track Owners
Level crossing closure / rationalisation	Work towards rationalising the number of level crossings and pedestrian crossings in an area while maintaining access.	DTEI Local Govt
	Develop a 'new level crossings' policy.	DTEI
New technologies	Investigate the use of low cost train activated systems to enhance the safety at stop sign controlled level crossings.	Aust Govt State Govt Local Govt
Speed limits	Trial lower speed limits on the approach to selected level crossings on a particular corridor.	Aust Govt State Govt Local Govt

# Level Crossing Safety Action Plan 2010 - 2012

## System management

Strategy	Action	Responsibility
Support track owners and road authorities	Establish interface agreements between track owners and the road authority to manage level crossing risks.	Aust Govt DTEI Local Govt Rail Operators
	Establish a common statewide framework for interface agreements.	State Govt Local Govt Rail Operators
National benchmarking	Enhance the existing level crossing incident reporting and recording system taking into account national activities in this area.	DTEI Rail Operators Track Owners National Transport Commission
	Monitor the outcomes from Parliamentary inquiries on level crossing safety.	All
National ALCAM policy	Assess level crossing safety using the Australian Level Crossing Assessment Model (ALCAM), or similar tools.	Aust Govt DTEI Local Govt
Risk assessment	Undertake a safety audit and risk assessment of all Gazetted and Permit routes for heavy vehicles that cross rail lines and develop and implement a program of level crossing improvements on Gazetted heavy vehicle routes.	DTEI Local Govt Rail Operators Track Owners
Reporting systems	Develop procedures between SAPOL and rail operators for the exchange of information such as incident reporting and follow up actions.	SAPOL Rail Operators
	Ensure clear and appropriate communication with stakeholders regarding level crossing safety.	Aust Govt State Govt Local Govt Rail Operators





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