

LEVEL CROSSING STRATEGY COUNCIL

Yearly Report 2010/11

LEVEL CROSSING SAFETY IMPROVEMENT PROGRAM



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Front Cover

Variable message sign used at Burley Griffin Way, Yoogali during a level crossing queuing awareness and enforcement campaign.

Glossary

Active Control	Lights, bells, boom gates regulate motorists
	Lights, bells, booms, and locking swing gates regulate pedestrians.
ALCAM	Australian Level Crossing Assessment Model
ARTC	Australian Rail Track Corporation
ATSB	Australian Transport Safety Bureau
CRIA	Country Rail Infrastructure Authority (and its predecessor Rail Infrastructure Corporation)
CRN	Country Regional Network (the part of the NSW Rail Network that is owned/managed by CRIA)
DDA	Disability Discrimination Act 1992 (C'wth)
ITSR	Independent Transport Safety Regulator
LCIP	Level Crossing Improvement Program
LCSC	Level Crossing Strategy Council
LCWG	Level Crossing Working Group
LGSA	Local Government and Shires Associations of NSW
OTSI	Office of Transport Safety Investigations
Passive Control	Stop or give way signs regulate motorists at a level crossing.
	Signs warn pedestrians.
	Mazes control entry to the rail corridor.
RailCorp	Rail Corporation NSW
Red Man	A flashing warning sign of a 'Red Man', which is triggered by oncoming trains.
RLCG	Rail Level Crossing Group
RTA	Roads and Traffic Authority of NSW
SCOT	Standing Committee on Transport
SSSC	Safety and Security Standing Committee

Year in Review: 2010/11

In 2010/11 road and rail agencies in NSW spent a total of \$15.94 million on level crossing safety initiatives, \$7.3 million of which was provided through the Level Crossing Improvement Program (LCIP). This Program provides funding to accelerate improvements to level crossings at priority sites across NSW as agreed by all road and rail agency stakeholders and for other level crossing safety initiatives. It is additional to the funds road and rail agencies spend on upgrading level crossings on their networks.

The 2010/11 expenditure followed a record year in 2009/10 when over \$60 million was spent on level crossing upgrades, \$42.77 million of which was provided by the Federal Government as part of the *Nation Building – Economic Stimulus Package* to install boom gates and other active level crossing control mechanisms at 55 passively controlled level crossings throughout New South Wales.

During 2010/11, LCIP works progressed at 38 level crossings including on major upgrades at six level crossings Hulbert St, Sawtell; Blumer Ave, Griffith; Canal Street, Leeton; Landsdowne Rd, Kundle Kundle; Sheep Wash Rd, Calwalla; and Avondale Rd, Dapto.

In addition to the six major upgrades, concept designs were prepared for another 8 projects, and 14 projects proceeded to the detailed design stage. Minor construction works were completed at 10 sites.

The second four year period of enhanced LCIP funding ended on 30 June 2011. Further funding of \$7.3 million annually was approved for another four years to 2014/15. This funding provides some certainty to allow for the planning and construction of future level crossing upgrades to ensure their progression until completion.

Following a review of level crossing administration conducted in early 2010, the Department of Transport's level crossing resources were enhanced by the transfer of staff from RailCorp. These additional resources have provided the required program management of LCIP, an expansion of media awareness and enforcement activities, more robust management of data collection on level crossings and the centralisation of Australian Level Crossing Assessment Model (ALCAM) data management within the Department of Transport.

Agency Level Crossing Activities

In addition to the LCIP, RailCorp, the Country Rail Infrastructure Authority (CRIA) and the Australian Rail Track Corporation (ARTC) undertook their own programs of level crossing safety improvements.

RailCorp completed a level crossing upgrade at Princes Highway, Unanderra and commenced construction at two sites Darkes Road, Dapto and Railway Parade, Corrimal. Concept designs were also completed for seven level crossing sites which will progress to detailed design and construction in future years. In total RailCorp spent \$3.6 million on safety improvement works for RailCorp level crossings.

During 2010/11 ARTC provided \$500,000 for safety improvements to level crossings on the North Coast and \$1.2 million for level crossings in the Hunter Valley. The improvements at these crossings included lowering/widening of cuttings, removing trees, and improving road approaches.

CRIA undertook level crossing upgrades at 50 sites at a cost of \$2.98 million with works including improvements to road crossing surfaces, and to signalling, and removing embankments and trees for better sighting distances. In addition, CRIA spent \$385,000 on Stage 2 sighting distance compliance works for Nyngan to Cobar; Werris Creek to Armidale; and Bogan Gate to Tottenham.

Level Crossings in New South Wales

New South Wales rail agencies and roads authorities are responsible for level crossing safety. Safety regulatory oversight is provided by the Independent Transport Safety Regulator (ITSR) for railway operations/infrastructure and the road/rail interface. Enforcement of road user behaviours is undertaken by the NSW Police Force.

Level Crossing Strategy Council (LCSC)

The Level Crossing Strategy Council (LCSC) is a NSW interagency forum which promotes coordination between agencies regarding level crossing safety. It is made up of senior executive level representation from the:

- Department of Transport (Chair)¹;
- Roads and Traffic Authority (RTA)²;
- Country Rail Infrastructure Authority (CRIA);
- RailCorp;
- Australian Rail Track Corporation (ARTC);
- Independent Transport Safety Regulator (ITSR);
- NSW Police Force; and
- Local Government and Shires Associations of NSW (LGSA).

The LCSC is supported by the Level Crossing Working Group (LCWG) which comprises officer level representatives from the member agencies. The Department of Transport provides secretariat support and assistance to the LCSC and LCWG and during the year assumed management of the *Australian Level Crossing Assessment Model (ALCAM)*. ALCAM is used for assessing risk at level crossings. Level crossings can then be ranked according to their ALCAM risk scores which inform decisions about prioritising level crossing upgrades.

Level Crossing Improvement Program

The LCIP funds a range of level crossing safety initiatives in NSW. It provides funding in addition to that spent by road and rail agencies to accelerate the construction of safety improvements at level crossings. LCIP also funds media awareness and enforcement campaigns each year in regional NSW and data collection to ensure accurate information is available on the status of public level crossings in NSW. Refer to Appendix (B).

The LCSC set priorities and approves the annual LCIP program and oversees its management assisted by the Working Group. The LCWG monitors program delivery and promotes collaboration and consultation between all agencies involved in the works. LCIP funding is managed by the RTA according to the agreed annual LCIP program.

¹ Department of Transport became Transport for NSW on 1 November 2011

² RTA and NSW Maritime Authority functions were merged to become the Roads and Maritime Services on 1 November 2011

During 2010/11 a new methodology to determine the level crossings to be included for LCIP funding was developed by the LCWG and approved by the LCSC. In the first instance the methodology considers historical crash risk for each of the level crossing control types (active controls – lights and bells, and lights, bells and boom gates; and passive controls - stop signs and give way signs).

ALCAM is then used to assess and rank the comparative risks of crossings within the control type groups to assist identify the priority crossings for inclusion in the LCIP.

Level crossing historical incident data is then used to determine the distribution of funds to the following three categories of upgrade:

- flashing lights to flashing lights and boom gates (33.5% of upgrade funding in 2011/12);
- passive control (give way or stop sign) to flashing lights and boom gate (53.0% of upgrade funding in 2011/12); and
- minor works at passively controlled sites (13.5% of upgrade funding in 2011/12).

Level Crossing Closures

The only means of completely eliminating risk at a level crossing is to close the crossing, and so the closure of level crossings, both public and private is pursued, where appropriate, by LCSC member rail and road agencies.

Thorough inspection and detailed assessment of crossings including alternative means of access is considered before closure. Consultation with the local council, adjacent landowners, the community, the RTA, emergency services and other road and rail users is also conducted prior to recommending closure.

Since 2002 a total of 120 level crossings have been closed, most on private property. In 2010/11 no level crossings were approved for closure.

Level Crossing Data

Level Crossing Incident Information

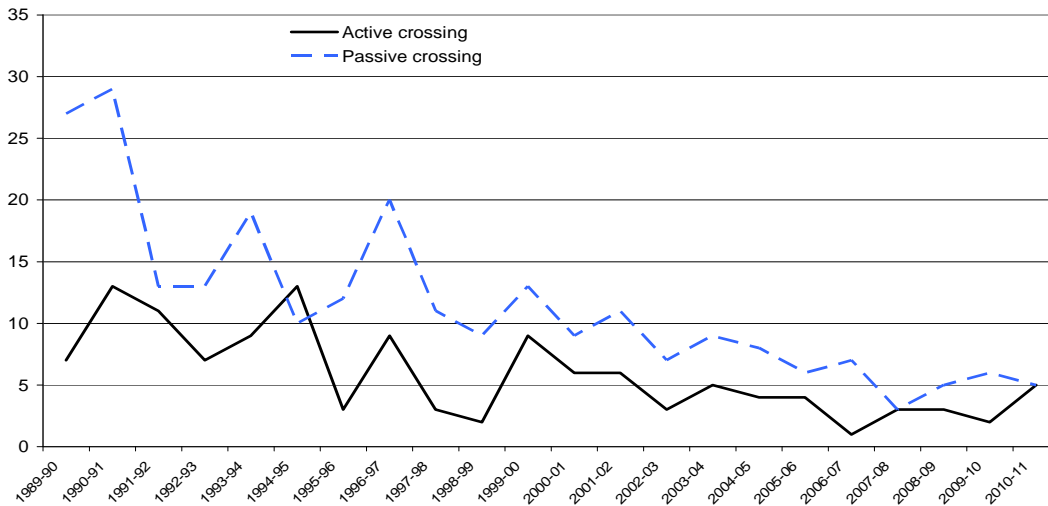
Of the 1,364 public road level crossings in NSW, 375 have active traffic controls; 185 have flashing lights and bells; and 190 have flashing lights, bells and booms. Traffic controls on other crossings are either “give-way” or “stop” signs.

The number of level crossings in NSW is steadily reducing due to crossing closures and because rail services no longer operate on some lines.

In 2010/11 one fatality was recorded as a result of a train and a motor vehicle colliding at a passively controlled level crossing. No fatalities were recorded between a train and a pedestrian. There were 10 crashes with road vehicles during the year, five at crossings with active protection and five at crossings with passive controls. The number of crashes between a train and a road vehicle has decreased over the past 22 years.

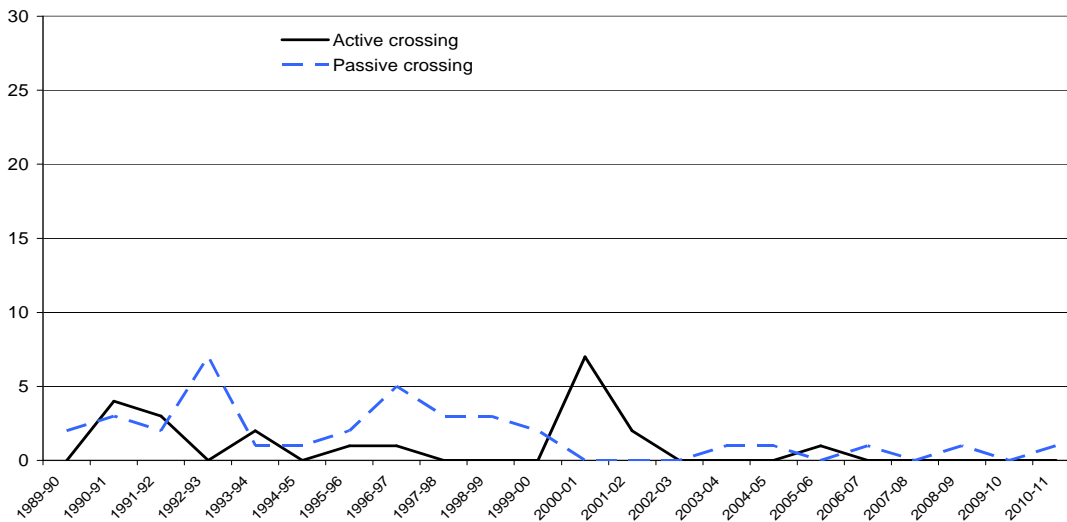
Crashes – Train-Road Vehicle³

Train Colliding with Road Vehicle at Level Crossing, 1989/90 to 2010/11 in NSW



Fatalities – Train-Road Vehicle

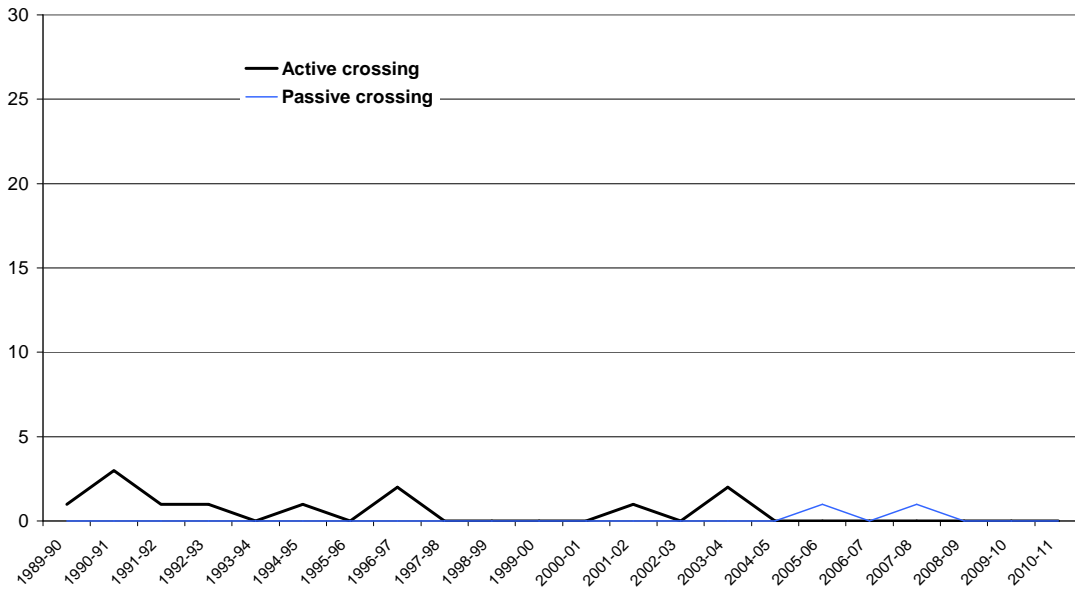
Fatalities - Train Colliding with Road Vehicle at Level Crossing, 1989/90 to 2010/11 in NSW



³ Source of all level crossing incident information: The Independent Transport Safety Regulator

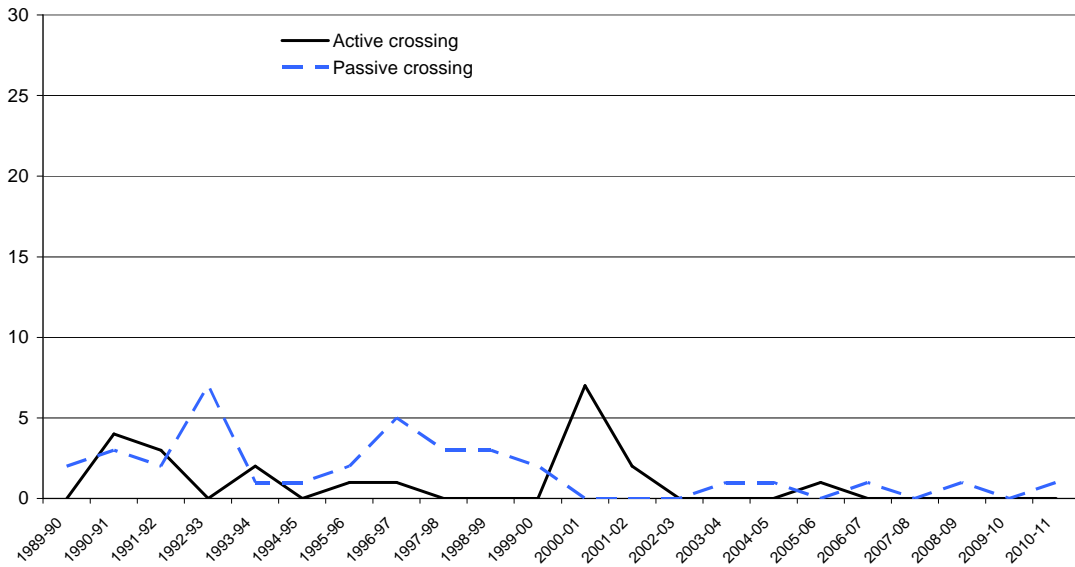
Crashes – Train-Pedestrian

Fatalities - Train Colliding with Person at Level Crossing, 1989/90 to 2010/11 in NSW



Fatalities – Train-Pedestrians

Fatalities - Train Colliding with Road Vehicle at Level Crossing, 1989/90 to 2010/11 in NSW



Level Crossing Improvement Program 2010/11 (LCIP)

Level Crossing Infrastructure Works Completed

Level crossing initiatives undertaken in 2010/11 included the design and delivery of level crossing improvement works through the LCIP and by road and rail agencies. The LCIP also supported road and rail agency education and awareness campaigns. In 2010/11, 6 major upgrades were either completed or substantially completed, 14 were completed to the detailed design stage, and 8 completed to the concept design stage.

Major Works Completed

Landsdowne Road, Kundle Kundle: Upgrades to this level crossing involved the installation of improved signage incorporating high intensity flashing warning lights on the approach to the level crossing (providing additional visual warning to road users of the need to stop at the crossing), boom gates and audible warning devices.

The new boom gates and flashing lights are controlled by new crossing control equipment which is housed in a new crossing hut.

Work on this site commenced during 2009/10 and was commissioned in March 2011. The project included major road works to improve the motorist's ability to see approaching trains. The total cost of this project, including associated road works, was \$1.220 million



Figure 1: Kundle Kundle level crossing.

Hulbert Street, Sawtell: This upgrade involved the installation of boom gates and associated road works on both sides of the crossing including the realignment of approach roads, a pedestrian crossing maze and the installation of pedestrian “Red Man” active protection. This project was substantially completed by June 2011, with final commissioning scheduled for March 2012. The total LCIP contribution to this project was \$579,000 with the remainder being funded by the ARTC.



Figure 2: Sawtell level crossing under construction.

Blumer Ave, Griffith: This project involved the installation of boom gates and pedestrian facilities, and was a combined project with the RTA which installed traffic signals at adjacent intersections, to interface to the level crossing controls. The interfacing between the level crossing controls and traffic signals ensures correct sequencing and clearing of road traffic to prevent vehicle queuing through the level crossing when a train is approaching.

The project also involved improvement to the pedestrian crossing, including the installation of pedestrian “Red Man” active protection. The construction of this level crossing was completed in June 2011, to a total cost of \$966,000.



Figure 3: Before and after photos of the level crossing and road improvements at Blumer Ave, Griffith.

Canal Street, Leeton

This project involved the installation of boom gates and was a combined project with the RTA which installed traffic signals at adjacent intersections to ensure correct sequencing and clearing of road traffic to prevent vehicle queuing over the level crossing. The pedestrian crossing was also upgraded with the installation of “Red Man” active protection. The construction of this level crossing was completed in June 2011, to a total cost of \$1,176,000.



Figure 4: Construction of level crossing and traffic signal interface at Canal Street, Leeton.

Avondale Road, Dapto

The LCIP provided \$273,000 towards this project which was jointly coordinated and funded between RailCorp, RTA and Wollongong City Council⁴ and is scheduled for completion in August 2011. By improving visibility of the level crossing and installing new boom gates for road traffic and automatic swing gates for pedestrians, users of the crossing will be provided with a safer passage across the level crossing.



Figure 5: Avondale Road level crossing.

⁴ Refer to “RailCorp Initiatives” on page 13 for more details on this project.

Sheep Wash Road, Calwalla

This project involved the installation of cantilevered flashing lights and road works including guardrails, signage, road markings and improvements to street lighting. The construction was completed and commissioned in June 2011 at a total cost of \$813,000.



Figure 6: Sheep Wash Road, Calwalla level crossing.

Major Works Undertaken

Landsdowne Road,	Kundle Kundle
Hulbert Street,	Sawtell
Blumer Road,	Griffith
Canal Street,	Leeton
Sheep Wash Road,	Calwalla
Avondale Road,	Dapto

Design Works Undertaken

Development for upgrades in future years formed a major part of the 2010/11 Program with concept design undertaken for 8 sites and detailed design for another 14 level crossings.

Detailed Designs Completed

Tip Road	Dunmore
Whitton Street	Narrandera
Bahampton Road	Wimbleton
Boree Street	Manildra
Koorringal Avenue	Griffith
Kitchener Street	Temora
Koorandan Road	Leeton
Calleen North Road	Calleen
Hoddle Street	Robertson
Military Road	Yennora
Amaroo Road	Amaroo
Tarlee Road	Edgeroi
Wheeler Lane	Dubbo
Tilly Willy Road	Macksville

Concept Designs Completed

McKays Road	Coffs Harbour
Macadone Street	Griffith
Ebert Street	Griffith
McNabbs Road	Coolamon
Darkes Road	Dapto
School Parade	Clifton
Newell Highway	Narrabri South
Rutherford Road	Amaroo

Interface Agreements

The *Rail Safety Act 2008* requires rail infrastructure managers and roads authorities to identify and assess risks to safety at level crossings, and for the purposes of managing those risks, to enter into interface agreements. Roads authorities and rail infrastructure managers are actively working towards meeting these obligations and currently negotiating safety interface agreements.

Upgrade of Level Crossing Website

This project commenced in April 2011. When complete, it will comprise a centralised definitive spatial dataset of NSW level crossings providing comprehensive and reliable level crossing information for the use of all transport agencies.

There are two core components of this project:

- Compilation of a definitive spatial dataset of NSW level crossings.
- Provision of an advanced map tool based on the Department of Transport's existing TransPortal common spatial interface that will allow for more detailed information to be available that can be cross referenced with other sources of information.

The support of roads authorities and rail infrastructure managers is required to ensure all information on changes to level crossings is provided in a timely manner.

A key issue for the future is to ensure measures are put in place to regularly update information on the website. Formal procedures will be developed for level crossing information to be obtained from road and rail agencies and loaded on the database.

National ALCAM Committee

In 2003, the Australian Transport Council {now known as the Standing Council on Transport & Infrastructure (SCOTI)} agreed to adopt the Australian Level Crossing Assessment Model (ALCAM) across Australia. ALCAM is an assessment methodology for rating risks at level crossings. Level crossings can be ranked according to their ALCAM risk scores which inform decisions about prioritising level crossing upgrades.

The National ALCAM Committee oversees the application and development of the ALCAM. It meets quarterly and has representation from the state jurisdictions, Northern Territory and New Zealand.

The major activities carried out under the ALCAM Works Program in 2010/11 included the comparison of ALCAM with ALCRM⁵, the redevelopment of the ALCAM database, and work relating to improved safety risk weightings, exposure and consequence parameters. The database redevelopment is estimated to cost \$1.6M over five years and will be shared between Australian and New Zealand jurisdictions, with the NSW portion being \$249,000. Funding for this project will be provided by the LCIP.

NSW ALCAM Data Collection

Details on traffic controls and any related risks are collected on all public level crossings on a cyclical basis over a five year period. These details are loaded into the ALCAM database to update the risk profile of each level crossing. Currently, ALCAM data surveys are carried out by ARTC and data entry is performed by the Department of Transport.

ALCAM data collected in the 2010/11 financial year was entered into the ALCAM database and the 2011 list of all public level crossings, ranked according to their ALCAM score, was generated. This list informed the development of the 2011/12 LCIP.

⁵ All Level Crossing Risk Model (ALCRM) used in Great Britain.

LCSC Agency Level Crossing Initiatives

RailCorp Level Crossing Works

Major Works

Princes Highway, Unanderra

Works were completed at Princes Highway, Unanderra. The upgrade involved the installation of an advanced warning light on the southern approach, new boom gates and a pedestrian/cyclist swing gate crossing at a cost of \$1.88 million. By combining the advanced warning and automatic swing gates for pedestrians and cyclists, users of the crossing were provided safer passage across the rail line.

Project Safety Improvements included:

- Commonwealth *Disability Discrimination Act 1992 (DDA)* compliant pedestrian facility and cyclist swing gate crossing
- New boom gates to replace life expired existing and high intensity LED lights
- New compliant road and pedestrian signage to AS 1742.7
- Advanced warning light
- Improved street lighting
- New footpaths and fencing
- New signal location
- New upgraded power supply

Projected Benefits include:

- Improved level crossing controls for vehicles and pedestrian users including advanced warning on the southern approach
- Improved traffic flow over the level crossing
- Improved pedestrian management, provision of DDA compliant pedestrian crossings and reduced train driver trauma
- Improved illumination of pedestrian and road crossing

Wollongong City Council completed fencing and approach footpaths along the Princes Highway, Unanderra. The upgrade was commissioned on 5 September 2010 and opened for public use on 6 September 2010.



Figure 7: Unanderra Princes Hwy Pathway and Lighting (Illawarra Line).



Figure 8: Unanderra Princes Hwy Swing gates (Illawarra Line).

Avondale Road, Dapto Level Crossing

This upgrade involved the installation of boom gates, high intensity warning lights and a new pedestrian crossing at a cost of \$2.7 million. Also forming part of the upgrade project were footpaths, roadworks, lighting, kerb and guttering. Dapto level crossing was commissioned on 21 August 2011

This was an important project which helped provide for the ongoing safety of road and rail users, and pedestrians.

Project Safety Improvements included:

- DDA compliant pedestrian swing gate crossing
- New boom gates and high intensity LED warning lights
- New compliant road and pedestrian signage to AS 1742.7
- Wider roadway over the level crossing
- Improved street lighting
- New footpaths, road medians, kerb and gutter
- New signal location
- New upgraded power supply

Projected Benefits include:

- Improved level crossing controls for vehicles and pedestrian users
- Improved traffic flow over the level crossing
- Improved pedestrian management, provision of DDA compliant pedestrian crossings and reduced train driver trauma
- Improved illumination of pedestrian and road crossing

The new pedestrian crossing includes automatic swing gates, flashing lights and concrete ramp for DDA compliant pedestrian and cyclist swing gate crossing.



Figure 9: Avondale Road DDA compliant pedestrian and cyclist swing gate crossing.

Design Works

In 2010/11 RailCorp developed designs for the following sites:

Name and location	Proposed scope of works
Tip Road, Dunmore	Installation of: <ul style="list-style-type: none">• flashing lights and boom gates;• upgrade of road lighting;• back up power supply; and• improvements to road width, kerbs and road medians.
School Parade, Clifton	Installation of: <ul style="list-style-type: none">• flashing lights and boom gates• upgrade of road lighting• back up power supply; and• improvements to road width, kerbs and road medians.
Telopea Station, Telopea.	Installation of new primary and back up power supply for pedestrian facilities.
Rawson Rd, Woy Woy	Installation of: <ul style="list-style-type: none">• flashing lights and boom gates;• upgrade of road lighting;• back up power supply; and• improvements to road width, kerbs and road medians.
Couche Crescent, Kooilewong	Installation of: <ul style="list-style-type: none">• flashing lights and boom gates;• upgrade of road lighting;• back up power supply; and• improvements to road width, kerbs, guttering and road medians.
Harley Hill Rd, Berry	Installation of: <ul style="list-style-type: none">• flashing lights and boom gates;• upgrade of street lighting;• back up power supply; and• improvements to road width, kerbs and road medians.
Mullers Rd, Berry	Installation of: <ul style="list-style-type: none">• flashing lights and boom gates;• upgrade of road lighting;• back up power supply; and• improvements to road width, kerbs and road medians.
Darkes Road, Dapto	Installation of: <ul style="list-style-type: none">• flashing lights and boom gates;• upgrade of road lighting;• back up power supply; and• improvements to road width, kerbs and road medians.

RTA Level Crossing Works

The RTA monitors the operation of devices such as directional and traffic control signals, pavement lines and markings under its responsibility on the State road network in accordance with its highway inspection regime. Works associated with pavement rehabilitation and maintenance of signs and markings on the road approaches to level crossings occurs on an ongoing basis.

During the year, strategic options were developed for the grade separation of the intersection of Tynan Road and the Hume Highway north of Albury including the immediately adjacent Main Southern Line level crossing on Tynan Road. This was in response to community concerns about the existing at-grade crossing.

CRIA Level Crossing Works

Improvements on the CRIA Country Regional Network

The CRIA has continued to improve level crossing safety on the CRN with a combination of upgrading and major maintenance works to ensure compliance with standards and improved signalling technology.

A survey of all level crossings on the CRN was conducted in 2008/2009 which informed priority based programming of major maintenance and renewal work to over 300 level crossings. In 2010/11 work continued on this program with upgrading at 50 sites at a cost of \$2.98 million, including improving road crossing surface and signalling and removing embankments and trees for better sighting. The following table provides further details on these upgrades:

Location	Costs	Sites
Gap - Turrawan	\$85,000	1
Gap - Turrawan	\$85,000	1
Gap - Turrawan	\$40,000	1
Burren - Walgett	\$85,000	1
Burren - Merrywinebone	\$85,000	1
Bellata - Moree	\$85,000	1
Camurra Junction - North Star	\$65,000	1
Bogan Gate - Tottenham	\$80,000	2
Stuart Town - Dubbo	\$75,000	1
Narromine - Nevertire	\$40,000	1
Narromine - Nevertire	\$40,000	1
Troy Jct - Gilgandra	\$40,000	1
Nevertire – Nyngan	\$40,000	1
Nyngan - Cobar	\$40,000	1
Nyngan - Cobar	\$40,000	1
Joppa Junction - Queanbeyan	\$158,000	1
The Rock - Boree Creek	\$80,000	2

Location	Costs	Sites
Junee - Narrandera	\$195,000	1
Junee - Narrandera	\$85,000	1
Yanco - Griffith	\$112,000	1
Griffith - Hillston	\$80,000	2
West Wyalong - Ungarie	\$40,000	1
Ungarie - Lake Cargelligo	\$40,000	1
Ungarie - Naradhan	\$40,000	1
Temora - Ardlethan	\$200,000	1
Wallerawang – Kandos	\$50,000	1
Troy Jct - Gilgandra	\$40,000	1
Tarana - Blayney	\$70,000	1
Bogan Gate - Tottenham	\$80,000	2
Narrandera - Yanco	\$80,000	2
Yanco - Griffith	\$80,000	2
Griffith - Hillston	\$80,000	2
Nevertire - Nyngan	\$40,000	1
Narromine - Nevertire	\$40,000	1
The Rock - Boree Creek	\$80,000	2
Troy Jct - Gilgandra	\$40,000	1
Troy Jct - Gilgandra	\$40,000	1
Troy Jct - Gilgandra	\$85,000	1
West Wyalong - Ungarie	\$80,000	2
Ungarie - Naradhan	\$40,000	1
Molong - Goobang Jct	\$100,000	1
TOTAL	\$2,980,000	50

Sighting Distance Compliance Works

In 2008/09, CRIA engaged ARTC to undertake an assessment of all level crossings on the CRN against applicable rail standards and Australian Standards for level crossings, and develop and implement a plan to rectify non-compliant level crossings.

ARTC completed the assessment of all level crossings on the CRN and completed stage 1 of the rectification works in 2009/10. This included achievement of sighting distance compliance through vegetation removal, earthworks to widen or lower cuttings, realignment of approaches, relocation of level crossings, changing the passive control from 'Give Way' signs to "Stop" signs, implementation of permanent level crossing speed restrictions and conditional level crossing speed restrictions.

Stage 2 works continued through 2010/11 and generally involved works outside the rail corridor which required extensive liaison with landowners, Councils and the RTA to facilitate completion. Many crossings required realignment of the approaches, clearing of vegetation on the road reserve and in private property, or conversion to active protection to achieve compliance. Stage 2 works are ongoing and a number have been included in the LCIP programs for future years.

Below is a list of locations where Stage 2 sighting distance compliance works were completed in 2010/11:

Location	Costs	Sites	Project scope
Nyngan to Cobar	\$270,000	1	Realign approaches and relocate LX. New concrete LX at Miandetta 643.838
Werris Creek to Armidale	\$50,000	2	Realign LXs at 518.018 & 518.128 to achieve sighting compliance
Bogan Gate to Tottenham	\$65,000	3	Clear extensive vegetation on council and private land to achieve sighting compliance for give way controls.
TOTAL	\$385,000	6	

Funding for Level Crossings in NSW

The following table is a summary of funding provided for level crossing safety improvements in NSW since 2003/04:

Year	Program / Agency	Expenditure (\$million)	Total (\$million)
2003/04	CRIA	2	5
	LCIP	3	
2004/05	LCIP	5	5
2005/06	RailCorp	1.3	7.3
	LCIP	6	
2006/07	RailCorp	2.4	11.327
	ARTC	1.65	
	CRIA	0.277	
	LCIP	7	
2007/08	RailCorp	2.65	18.49
	ARTC	6.9	
	CRIA	1.94	
	LCIP	7	
2008/09	RailCorp	2.807	18.027
	ARTC	2.473	
	CRIA	4.528	
	RTA	2.939	
	LCIP	5.280	
2009/10	RailCorp	3.27	59.77
	ARTC	42.77 ⁶	
	CRIA	3.865	
	RTA	3.300	
	LCIP	6.565	
2010/11	RailCorp	3.600	15.94
	ARTC	1.650	
	CRIA	3.365	
	LCIP ⁷	7.328	

Level Crossing Awareness Campaigns

Level Crossing Motorists Awareness Campaign

In 2010/11 the RTA, on behalf of the Level Crossing Strategy Council, delivered a two-phased Level Crossing Motorist Awareness Campaign in regional NSW. The first phase of the campaign was held in January and the second in June 2011. Each phase ran for approximately three weeks. The aim of the campaign was to educate drivers on the dangers of ignoring road rules at crossings and to encourage drivers to consider the consequences if they attempt to cross a level crossing when a train is approaching. A combination of television, newspapers, regional magazines, outdoor billboards, and radio advertising conveyed the railway safety message. An evaluation has shown an increase in self reported awareness and safe behaviour at railway level crossings.

⁶ One off funding for the Boom Gates for Rail Crossings Program was provided as part of the Commonwealth Government's Nation Building Program.

⁷ Includes \$2 million funding provided from the RTA.

Awareness and Enforcement Campaigns

In March 2011 the Department of Transport and NSW Police organised a local Awareness and Enforcement Campaign at three NSW level crossings, two in Griffith and one at Gerringong. This campaign was supported by the RTA and rail agencies, and was successful in improving motorist compliance at these level crossings. Four more Awareness and Enforcement Campaigns have been scheduled to run in 2011/12.



Figure 10: NSW Police enforcement at Griffith during a level crossing queuing awareness and enforcement campaign.

NSW Police Level Crossing Enforcement Statistics⁸

During 2010/11, the NSW Police Force conducted ongoing patrols of level crossings in NSW resulting in 219 infringements, the majority being the issue of penalty notices for traffic offences. The high number of infringements in March 2011 in the following chart was due to the operation in that month of the level crossing enforcement campaigns in Griffith and Gerringong which resulted in 89 infringement notices being issued.

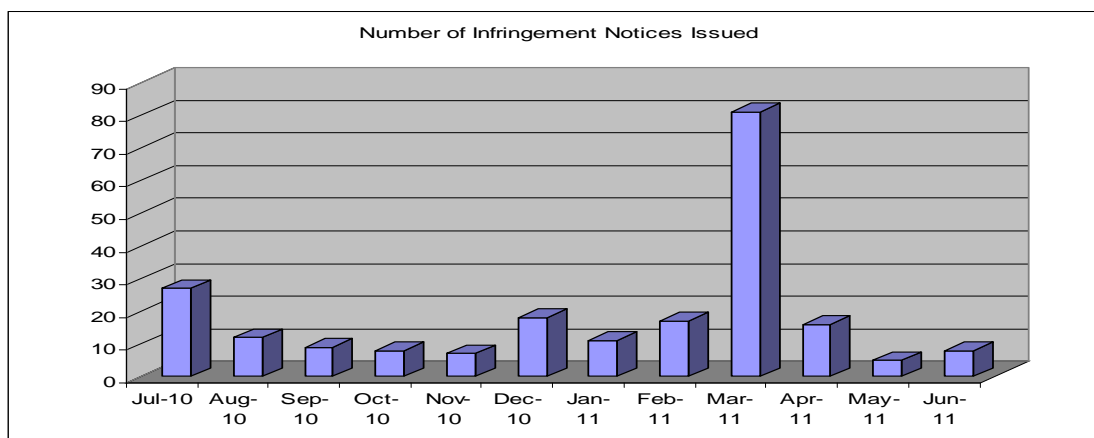


Figure 11: The increased number of infringements in March 2011 reflects the impact of the level crossing enforcement campaign conducted in the Griffith and Gerringong regions at that time.

⁸ Source: NSW Police Force

RailCorp Level Crossing and Awareness Campaigns

During National Rail Safety Week (NRSW) held in August 2010 RailCorp activities included:

- Advertising:
 - Regional areas with a higher number of railway level crossings (Blue Mountains, Wollongong, Newcastle and the Central Coast), were supported with nine large format trespassing advertisements located close to train stations or near railway level crossings.
 - Station-based cross track billboards and posters.
 - Online and press advertising.
- Advertising and editorial in the *mX* newspaper.
- CityRail website homepage banner advertising and news story.
- NRSW article in CityRail's quarterly customer newsletter *CityRail Update*.
- NRSW press release was issued for distribution in metropolitan and regional media.
- Trespass and level crossing safety were key messages.
- A media launch at Central Station on 23 August 2011 hosted by the Minister for Transport and RailCorp Executive. At the event, pre-school children were invited to take part in activities to educate them about rail safety, using the CityRail *Rail Safe with Thomas* book.

In March 2011, RailCorp ran a safety awareness campaign over four weeks at selected railway stations.

Community Relations

RailCorp's Community Relations Unit (CRU) has continued strong relationships with the project managers delivering major infrastructure renewals for level crossings. In 2010/11, the CRU assisted Project Managers with resident notifications at Corrimal, Woonona and Dapto level crossings.

As well as notifying community members of upgrades and works, the CRU takes a proactive approach to level crossing safety. As an example, promotion of the recently completed upgrade project at Avondale Rd, Dapto level crossing also addressed concerns about the incidents of trespass in the area with the CRU circulating safety messages to local residents. Local businesses were also approached and agreed to assist in spreading the safety message by displaying brochures on level crossing safety at their premises, with 15 businesses participating.

Safety presentations and educational sessions were undertaken at local high schools, primary schools and youth groups.

In December 2010 a Community Information Event was held at Woonona level crossing to educate users on the correct way to use the new level crossing. The NSW Police Force, NSW Fire Brigade, RailCorp Transit Officers and students from Woonona High School attended the event.

Future Directions

Low Cost Control Devices

There are around 1000 passive public level crossings in NSW. The cost of actively protecting all these sites using conventional controls such as boom gates and flashing lights is prohibitive. There is a need therefore for devices that offer active warning of an approaching train in a much more cost effective manner than traditional solutions.

This has been recognised by the Rail Cooperative Research Centre (Rail CRC) which has investigated available technology for low cost devices in regional areas, and in areas with high speed passenger trains, through its research project (R3.111 *New Affordable Level Crossing Protection Systems*).

Building on this CRC research, the NSW LCSC is funding a trial of low cost level crossing devices through its 2011/12 LCIP using “predictor” technology and a standard flashing light interface. Cost savings come from the avoidance of having to provide track circuits and associated cabling runs as well as pursuing a standard, modular, pre fabricated design. Such an approach could potentially provide crossings for less than \$100,000.

Radio Break-in Technology

The emergence of intelligent transport systems (ITS) for use in land transport networks and the vehicles that use them has potential to deliver significant safety, environmental and efficiency benefits to Australian transport users.

ITS encompasses the application of information and communications technologies to transport. ITS includes stand-alone infrastructure applications such as traffic management systems, as well as applications involving vehicle-infrastructure and vehicle-vehicle communications. These technologies cover private and public transport by road, rail, water and air, as well as cycling and walking, together with applications for cross modal transport and transport hubs.

These technologies offer great promise to improving level crossing safety by providing earlier warnings in the cab of road vehicles.

Following the positive result of the VicRoads/DIRD radio break-in technology testing, the concept will be added to the options considered by the Level Crossing Strategy Council in the low cost warning trial. An example of radio break-in technology is where an automatic warning of an approaching train would be transmitted via a vehicle’s radio.

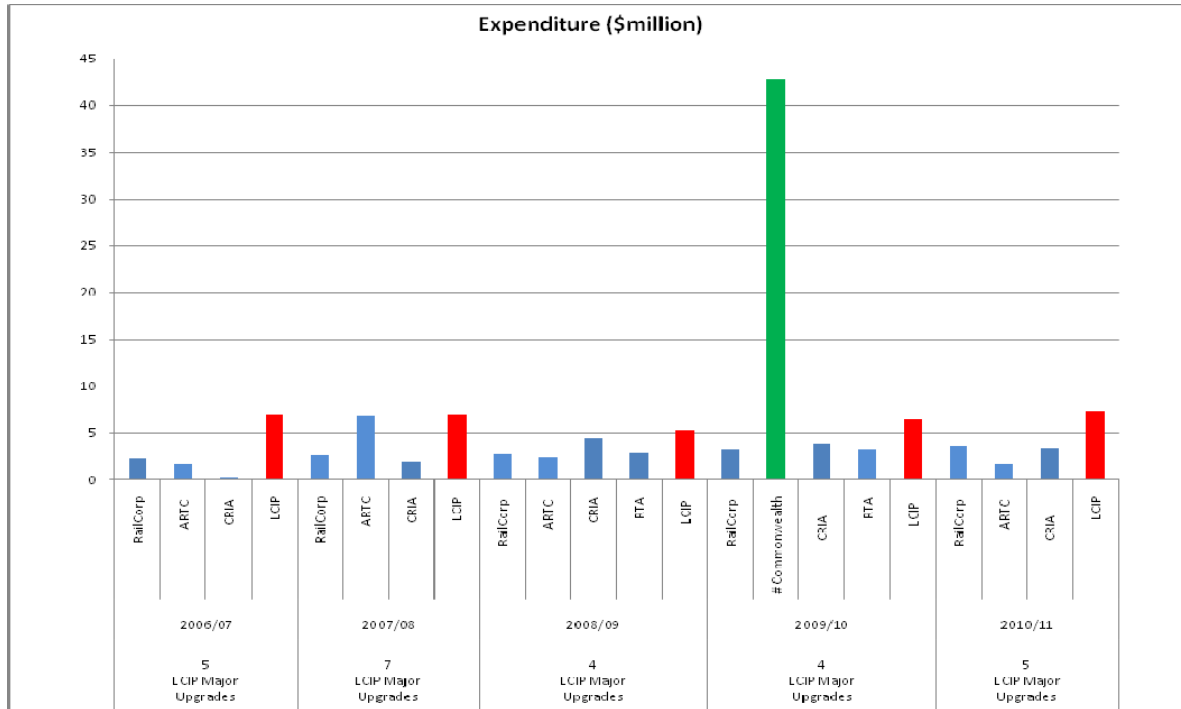
Appendix A: LCIP 2010/11 Expenditure

Street	Suburb	Cost
Construction Projects		
Landsdowne Road,	Kundle Kundle	\$1,220,000
Hulbert Street,	Sawtell	\$579,000
Blumer Avenue,	Griffith	\$966,000
Canal Street,	Leeton	\$1,176,000
Sheep Wash Road,	Calwalla	\$813,000
Avondale Road,	Dapto	\$273,000
	Total	\$5,027,000
Detailed Design		
Tip Road	Dunmore	\$58,000
Whitton Street	Narrandera	\$23,000
Bahampton road	Wimbledon	\$44,000
Boree Street	Manildra	\$23,000
Koorungal Avenue	Griffith	\$25,000
Kitchener Street	Temora	\$50,000
Koorandan Road	Leeton	\$18,000
Calleen North Road	Calleen	\$7,000
Hoddle Street	Robertson	\$37,000
Military Road	Yennora	\$41,000
Amaroo Road	Amaroo	\$42,000
Tarlee Road	Edgeroi	\$48,000
Wheelers Lane	Dubbo	\$23,000
Tilly Willy Road	Macksville	\$129,000
	Total	\$568,000
Concept Design		
McKays Road	Coffs Harbour	\$81,000
Macadone Street	Griffith	\$31,000
Ebert Street	Griffith	\$29,000
McNabbs Road	Coolamon	\$15,000
Darkes Road	Dapto	\$43,000
School Parade	Clifton	\$44,000
Newell Highway	Narrabri South	\$39,000
Rutherford Road	Amaroo	\$3,000
	Total	\$285,000
Projects Withdrawn/On Hold		
Heron Street	Koorangang Island	0
Yamboon Rd	Crooble	0
Moree Rd	Croppa Creek	0
North Star Rd	Croppa Creek	0
Moree North Rd	North Star	0
Old Cootamundra Road	Temora	\$18,000
Cudgei Street	Yanco	0
Tyrans Road	Table Top	0
Burda Road	Merriwagga	0
Public Road	Ungarie	\$1,000
	Total	\$19,000

2009/10 Projects Completed in 2010/11

Minor Works		
River Street	Narrandera	\$12,000
Oakes Road	Thirlmere	\$76,000
Staircase road	Mandogery	\$33,000
Escort Way	Meramburn	\$59,000
Trundle Road	Bogan Gate	\$30,000
Trundle Road	Trundle	\$30,000
Trundle Road	Bogan Gate	\$30,000
Condobolin Road	Tullamore	0
Castlereagh Highway	Walgett	0
Camaron Way	Garah	0
	Total	\$270,000
Other Level Crossing Initiatives		
Education and Enforcement Campaign		\$535,000
ALCAM Data Collection & Development		\$421,000
Policy Development - RTA		\$97,000
Carryover Projects		\$106,000
	Total	\$1,159,000
	Grand Total	\$7,328,000

Appendix B: Level Crossing Improvement Program and NSW Road and Rail Agency Level Crossing Programs



Note: # - ■ Federal stimulus funded projects under the National Building Program: *Boom Gates for Rail Crossings (55 sites)*