

LEVEL CROSSINGS

NSW Safety Improvement Programs

Yearly Report 2008/09

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Year in Review: 2008/09

There are approximately 3,800 level crossings in New South Wales, 1,400 of which are the intersection of a public road and public railway. The remainder are level crossings on private roads. Management of safety risks at level crossings requires coordination between the rail infrastructure managers and road authorities who have primary responsibility for ensuring safety at level crossings.

The NSW Level Crossing Improvement Program (LCIP) currently receives \$7 million per annum. In 2008/09, under this state-wide program major upgrades were completed at five level crossings, and minor safety improvement works were carried out at 42 sites. Development work for upgrades in future years formed a major part of the 2008/09 Program with concept design undertaken for upgrades at 26 sites and detailed design for another six level crossings. The LCIP also funded awareness campaigns that commenced in June 2009 and focused on level crossing safety in rural areas with billboard, print and radio advertising.

In addition to the LCIP, each of the three rail agencies and the Roads and Traffic Authority (RTA) undertook its own program of level crossing safety improvements. RailCorp completed 3 major level crossing upgrades and 2 minor upgrades at a cost of \$2.8 million. Rail Infrastructure Corporation (RIC) worked in collaboration with coal mines in the North West to upgrade level crossings on the North West corridor to improve the safety and increase the capacity of the line at a total cost of \$4.53 million. The Australian Rail Track Corporation (ARTC) upgraded 17 level crossings at a cost of \$2.47 million. The RTA completed the next stage of the upgrade of the level crossing at Garfield Road, Riverstone at a cost of \$2.94 million.

The permanent closure of a level crossing is the only way to eliminate the interface between road and rail and the risk present at the crossing. Road and rail agencies close level crossings wherever possible. After consultation with the local council, the RTA and the local community, the Minister for Transport can approve the closure of a level crossing. In 2008/09, the Minister for Transport approved the closure of 26 level crossings.

The number of collisions between trains and road vehicles has gradually decreased over the last 20 years and the number of incidents in 2008/09 was close to the lowest observed since the start of the Independent Transport Safety and Reliability Regulator's (ITSRR) records. There was one fatality at a level crossing in 2008/09 at Duri where a motor cyclist was struck by a train at a level crossing on 24 September 2008. There were six other collisions with motor vehicles during the year, two at actively controlled crossings and 4 at passively controlled crossings.

During 2008/09, the NSW Police Force conducted an ongoing patrol of level crossings in NSW which has resulted in 218 legal actions, the majority being the issue of penalty notices for traffic offences.

In early 2009, the STAYSAFE Committee reviewed progress in implementing the recommendations of its 2004 report into the safety of level crossings. In March

2009, the Director-General of the then Ministry of Transport appeared at a public hearing of the Committee to update progress on railway level crossing safety and the implementation of the Government's response to the Committee's previous recommendations. The subsequent report of the Committee, released in June 2009, made a further seven recommendations. NSW Transport and Infrastructure (NSWTI) will continue to monitor the implementation of the Committee's original and additional recommendations.

The Rail Safety Act 2008 commenced on 1 January 2009. It contains provisions which require rail infrastructure managers and road authorities to enter into safety interface agreements to better manage the risks at level crossings. There is a three year period, until 1 January 2012, to transition to these arrangements.

The Federal Government this year strengthened efforts to improve level crossing safety. As part of the Nation Building and Jobs Package, the Federal Government allocated \$42.77 million over two years to install boom gates and other active rail crossing control mechanisms at up to 55 passively controlled level crossings throughout New South Wales. This program is in addition to LCIP and each agency's own level crossing improvement program.

In June 2009, the Government announced the establishment of NSW Transport and Infrastructure as the lead public transport agency of the NSW Government, with primary responsibility for transport policy, planning and coordination functions as well as oversight of infrastructure delivery and asset management.

This streamlined transport structure is intended to deliver integrated transport planning and service delivery, including for level crossing safety.

Level Crossings in New South Wales

A level crossing is the intersection of a road and railway line at the same grade. There are approximately 3,800 level crossings in New South Wales, 1,400 of which are the intersection of a public road and public railway. The remaining level crossings are on private roads. Management of safety risks at level crossings requires coordination between the rail infrastructure managers and road authorities who have primary responsibility for ensuring safety at level crossings.

The level of control provided at railway crossings is determined by a risk assessment of each site. Railway level crossing traffic controls fall into two categories:

Passive controls: stop or give way signs warn motorists about a level crossing. Signs warn pedestrians and mazes control entry to the rail corridor.

Active controls: lights, bells, boom gates warn motorists; and lights, bells, booms, or locking swing gates warn pedestrians of the presence of an approaching train.

Administration

New South Wales road and rail agencies are responsible for level crossing safety. Regulatory oversight is provided by the Independent Transport Safety and Reliability Regulator for rail operations/infrastructure and the road/rail interface and by the Roads and Traffic Authority and NSW Police Force for roads.

The Level Crossing Strategy Council (LCSC) is a New South Wales interagency forum which promotes coordination between agencies regarding railway level crossing safety. It is made up of chief executive level representation of:

- NSW Transport and Infrastructure (NSWTI) chair;
- Roads and Traffic Authority (RTA);
- Rail Infrastructure Corporation (RIC);
- RailCorp;
- Australian Rail Track Corporation (ARTC);
- Independent Transport Safety and Reliability Regulator (ITSRR);
- NSW Police Force; and
- Local Government Association and Shires Association (LGA&SA).

The LCSC is supported by a Level Crossing Working Group (LCWG) which comprises officer-level representatives from the member agencies. During the year, the RailCorp Level Crossing Unit managed the Australian Level Crossing Assessment Model (ALCAM), undertook level crossing assessments, worked with the RTA in implementing the Level Crossing Improvement Program (LCIP) and provided secretariat support and assistance to the LCSC and LCWG.

Level Crossing Improvement Program

The RTA-administered LCIP is a significant source of funds for level crossing safety improvements in New South Wales. The Government has allocated \$7 million per annum to LCIP until 2010/11 (\$2 million recurrent allocation to the RTA and \$5 million NSW government supplement).

The LCSC endorses and monitors delivery of the LCIP and promotes collaboration and consultation between all agencies involved in the works.

LCIP funding is distributed generally according to a priority list of sites determined by the Australian Level Crossing Assessment Model (ALCAM) which is used to assess and then rank the comparative risks present at a level crossing. In 2008/09 LCIP funded five major and 42 minor level crossing upgrades.

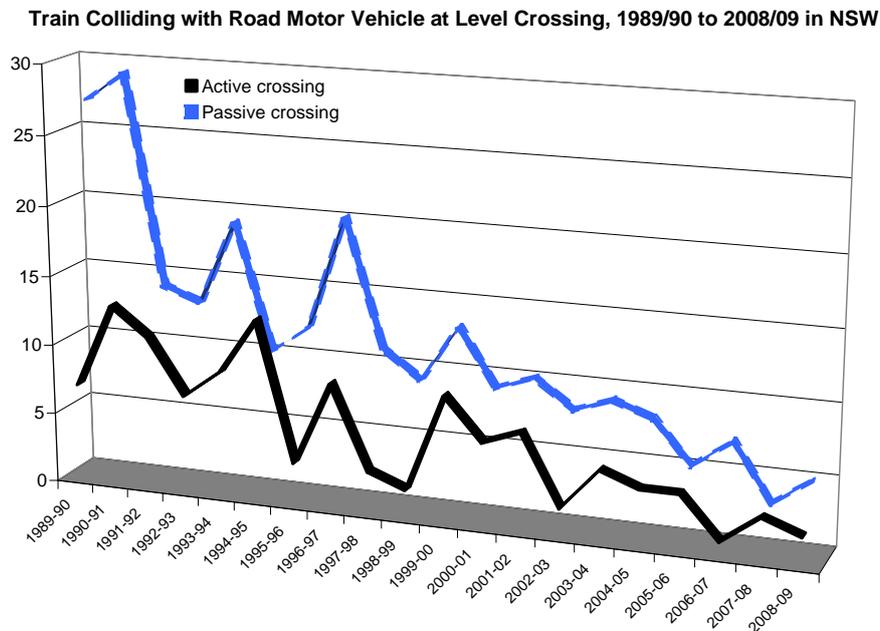
The only means of completely eliminating risk at a level crossing is to either to grade separate or to close it and so the closure of railway level crossings, both public and private is actively pursued by LCSC member agencies. Thorough inspection and detailed assessment of the crossing is conducted before closure is pursued. Consultation with the local council, adjacent landowners, the community, the RTA, emergency services and other road and rail users is conducted prior to recommending closure to the Minister for Transport, whose approval is required close a crossing. During 2008/09 the Minister for Transport approved closure of 26 level crossings.

Level Crossing Statistics

Level Crossing Incident Information

There was one fatality at a level crossing in 2008/09 at Duri where a motor cyclist was struck by a train at a level crossing on 24 September 2008. There were 6 other collisions with motor vehicles during the year, 2 at actively controlled crossings and 4 at passively controlled crossings. The number of collisions between trains and road vehicles has gradually decreased over the last 20 years. There were no collisions with pedestrians in 2008/09.

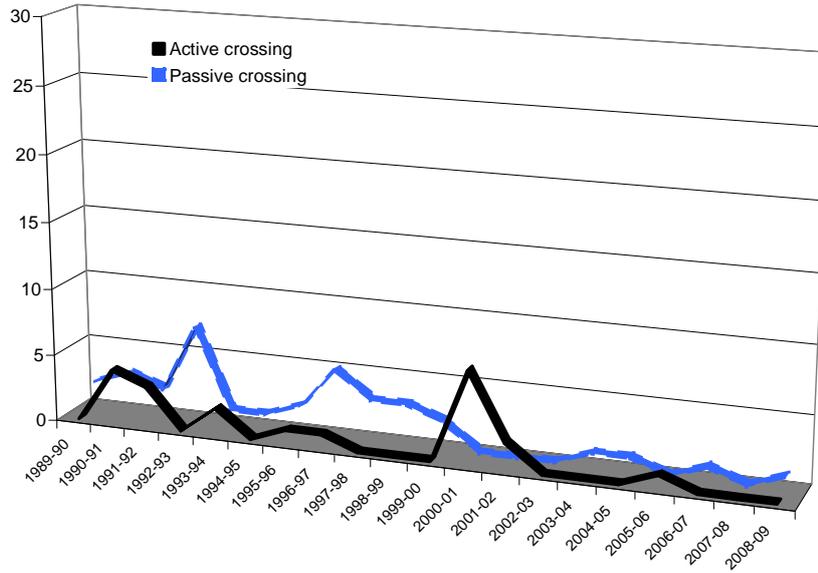
Collisions – Motorists¹



¹ Source of all level crossing incident information: The Independent Transport Safety and Reliability Regulator

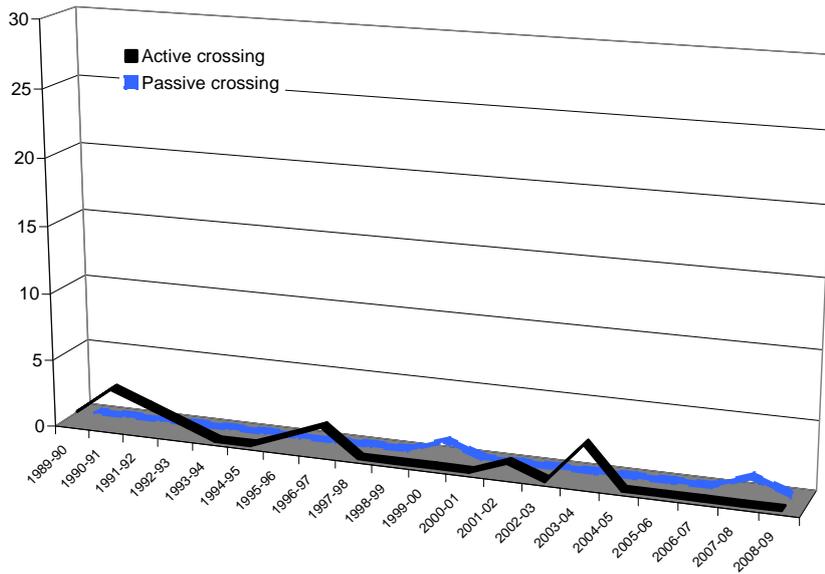
Fatalities – Motorists

Fatalities - Train Colliding with Road Motor Vehicle at Level Crossing, 1989/90 to 2008/09 in NSW



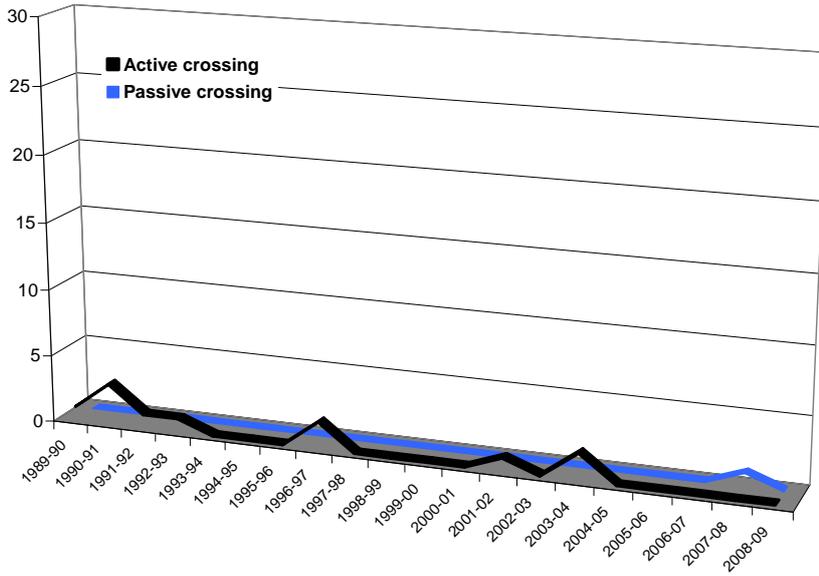
Collisions – Pedestrians

Train Colliding with Person at Level Crossing, 1989/90 to 2008/09 in NSW



Fatalities – Pedestrians

Fatalities - Train Colliding with Person at Level Crossing, 1989/90 to 2008/09 in NSW

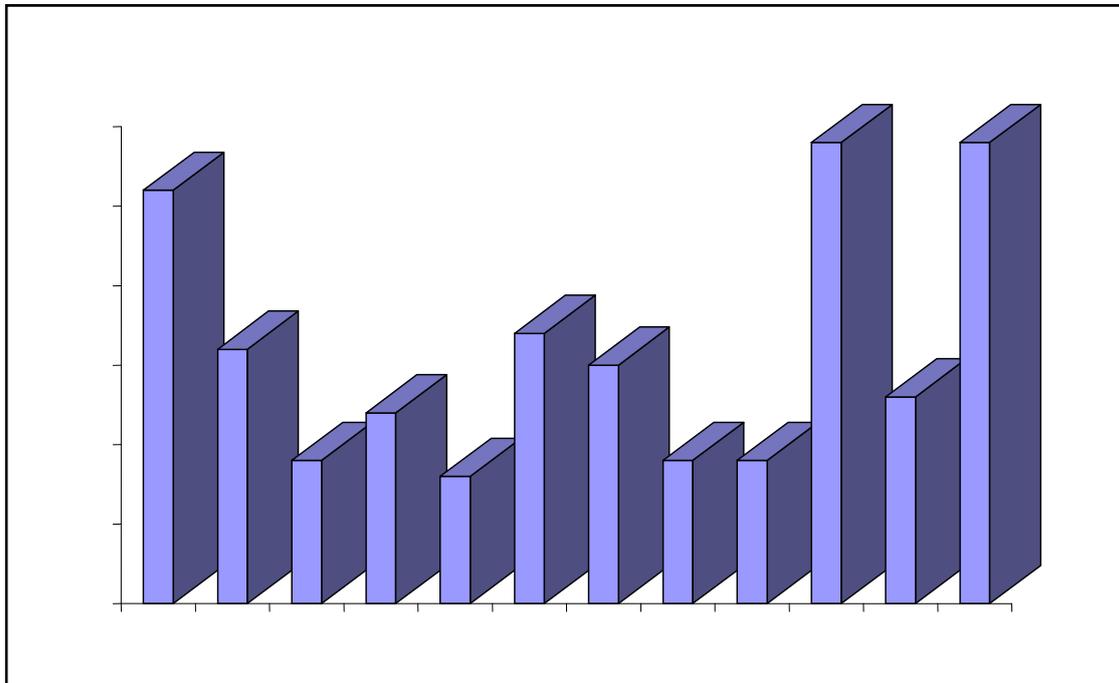


Level Crossing Enforcement Activities²

The NSW Police Force is involved in level crossing safety programs as joint initiatives with RailCorp and the RTA. These operations are supported by community awareness campaigns targeting pedestrians and drivers using level crossings.

The Local Area Commands of Batemans Bay and Albury are currently developing strategies with the RTA in an attempt to achieve an increased level of safety for persons using level crossings in those areas.

During 2008/09 the NSW Police Force conducted an ongoing patrol of level crossings in NSW which resulted in 218 legal actions, the majority being the issue of penalty notices for traffic offences.



² Source: NSW Police Force

Program Achievements: 2008/09

Level crossing initiatives undertaken in 2008/09 include the design and delivery of level crossing improvement works both through the LCIP and by road and rail agencies through their own programs and education and awareness campaigns. The *Rail Safety Act 2008* which contains provisions for level crossing management also commenced during the year. There is a three year period to transition to these arrangements. Details of each of these initiatives are set out below.

Level Crossing Improvement Program

Major Works

Park Road, Wonoona.

The aim of the upgrade was to improve safety for pedestrians, cyclists and motor vehicles in the vicinity of the level crossing as there had been a history of non-compliance with traffic signs and signals.



An existing pedestrian level crossing was renewed and a new pedestrian level crossing was installed to reduce pedestrians' and cyclists' need to use the road. Both pedestrian crossings are now compliant with disability access standards.

New high visibility flashing lights and boom gates were installed at the crossing and major road works, including the construction of a slip lane, were undertaken to reduce the likelihood of road traffic queuing over the crossing.

Cost: LCIP contributed \$1,057,000 and RailCorp \$916,000 to the upgrade of this crossing.

Construction works

Bellambi Lane, Bellambi: This upgrade involved modification of boom gates to suit the new road width and installation of medians by Council. Cost in 2008/09 - \$28,000

Liverpool Street, Scone: Development and concept design for the installation of boom gates and the upgrade of existing pedestrian crossings on both sides of the road. Major road works were undertaken including installation of medians. Cost in 2008/09 - \$87,000.

Princes Highway, Unanderra: Stage one works include the installation of a new pedestrian swing gate crossing and advanced warning lights. Cost in 2008/09 - \$105,000

Nana Glen Crossing Loop: Cost in 2008/09 - \$600,000

Minor Works

Minor works were undertaken at the following 43 level crossings:

| Location |
|---|
| Bushland Drive, Taree |
| River Street (Comboyne Street), Kendall |
| Blumer Avenue, Griffith |
| Canal Road, Leeton |
| Public Road, Bogan Gate (Closure) |
| Bathurst Street, Forbes (Closure) |
| Wilton Road, Maldon |
| Docker Street, Wagga |
| May Street, Condobolin (Closure) |
| Metford Public Crossing |
| Muldoon Street, Taree |
| New England Highway, Scone |
| Malbon Street, Bungendore |
| Fernleigh Road, Wagga Wagga |
| Fairey Road, Windsor |
| Macquarie Street, Taree |
| Lansdowne Road, Cooperook |
| Bruxner Highway, Casino |
| Camden Road, Douglas Park |
| Mascot |
| Whittingham |
| West Dapto Road, Kembla Grange |
| Olympic Highway (Doddyns Street), Junee |
| Geordie Street, Bowenfels |
| Station Lane, Lochinvar |
| Robertson Street, Carrington |
| Sh11 Rail Level Crossing Wauchope |
| High Street, Coffs Harbour |
| Stewart Ave, Wickham |
| Runnymede (Andersons Road), Kyogle |
| H6, Blayney |
| Mulgrave |
| Cootamundra to Albury (Corridor Strategy) |
| Pine Road, Fairfield |
| Urana Street, The Rock |
| Belgrave Street, Kempsey |
| Wingecarribee |
| Lloyds Road, Bathurst |
| Wollongong |

Location

Old Port Road, Wollongong

Wollondilly

Griffith

Level Crossing Inspections (Western)

Design Works

Development for upgrades in future years formed a major part of the 2008/09 Program with concept design undertaken for upgrades at 26 sites and detailed design for another six level crossings.

Concept Design

Location

Shellharbour Road, Shellharbour

Lansdowne Road, Lansdowne

Clarinda Street, Faulconbridge

Creamery Road, Albion Park

Summerland Way, Koolkhan

Hulbert Street, Sawtell

King Street, Paterson

Fern Street, Gerringong

Darling Street, Carrington

Sheep Wash Road, Calwalla

Military Road, Yennora

Parramatta Road, Clyde

Summerland Way (Kyogle Road) Namoon

Hoddle Street (H25), Robertson

Gosford Road (Rawson Road), Woy Woy

Lansdowne Road, Kundle Kundle

Bong Bong Road, Dapto

Poplar Avenue, Leeton (Leeton Truck Bypass)

Cessnock Road, Kearsley

Beaumont Street, Hamilton

Balfour Street (Olympic Highway), Culcairn

Couche Crescent, Koolewong (includes stage 1 road works)

Bullus Drive, Moree

Newell Highway

Tilly Willy Street (Mckay Street) Macksville

Hebden Road, Ravensworth

Detailed Design

Location

Avondale Road, Dapto

Bundarra Street, Blackheath

Lansdowne Road, Melinga

Bypass Road, West Wyalong

Warnervale Road, Warnervale

Railway Parade, Corrimal

Awareness Campaigns

The RTA with its rail partners, RailCorp, RIC and the ARTC conducted the annual motorist awareness campaign in June, July and August 2009. Historically there have been an increased number of accidents at level crossings during those months of the year.

The “Stop. Or get stopped in your tracks” campaign which operated in previous years was tested earlier in 2009 to ensure its message was still influential. This campaign is designed to educate motorists of the speed, power and size of trains and to encourage motorists to obey signs/signals at rail level crossings. Due to the prevalence of road/rail incidents in regional NSW, the campaign was focused in these locations with billboard, print and radio advertising.

RailCorp Initiatives

Major Works

Cowan Station, Cowan



Before



After

The aim of the upgrade was to provide improved pedestrian access across the tracks and to the Cowan Station platform. A pedestrian swing gate, additional fencing, platform access ramps (including lighting) to both platforms and approach footpaths were installed during the upgrade. **Cost:** \$1.34 million

Wharf Road, Berry

The aim of the upgrade was to provide improved safe access across the rail corridor by installing new pedestrian and cycleway facilities. The crossing now has improved street and pedestrian lighting including provision for future CCTV coverage, improved high visibility flashing lights and track circuit reliability. The upgrade also involved road widening and the installation of road medians, kerbs and guttering.



Cost: \$1.9 million

Faulconbridge and Springwood stand alone pedestrian rail crossings

Pedestrian safety was improved at these crossings by retrofitting an existing pedestrian crossing with new emergency escape gates and magnetic latches.



Cost: \$170,000

Design Works

In 2008/09 RailCorp developed designs for the following sites:

| Name and location | Proposed scope of works |
|---|---|
| Bourke Street and Morray Street, Richmond | An upgrade of existing pedestrian facilities through the installation of a new pedestrian crossing, improved road width, kerbs and guttering and improved lighting. |
| School Parade, Clifton | Installation of flashing lights and boom gates, upgrade of street lighting, back up power supply and improvements to road width, kerbs, guttering and road medians. |
| Tip Road, Dunmore | Installation of flashing lights and boom gates, upgrade of street lighting, back up power supply and improvements to road width, kerbs, guttering and road medians. |
| Teloepa Station, Teloepa. | New primary and back up power supply for pedestrian facilities. |

RIC Initiatives

During 2008/09 RIC in conjunction with coal mining companies upgraded controls at three level crossings from passive stop signs to active lights, bells and booms on the North West corridor of the Country Regional Network (CRN).

In addition, RIC undertook a review and upgrade of level crossings on this corridor as part of a major capacity improvement project for the line north of Gap allowing for an increase in train frequency and a decrease in travel time to port. In conjunction with this project all level crossings on the Gap to Narrabri line were upgraded to meet the current Australian Standard 1742.7. Details of these works are listed below.

Major level crossing upgrade works carried out in conjunction with the Gap to Narrabri Capacity Improvement Project

| Location | Cost | Sites | Project Scope |
|--|----------------|--------------|--|
| Currabubula Road, Breeza Gunnedah Shire Council Road Commissioned in August 2008. | \$420,000 | 1 | Passive to active upgrade, flashing lights and booms |
| Emerald Hill Road, Emerald Hill Gunnedah Shire Council Road Commissioned in August 2008. | \$420,000 | 1 | Passive to active upgrade, flashing lights and booms |
| Kamilaroi Highway, Curlewis Gunnedah Shire Council Road Commissioned in August 2008. | \$130,000 | 1 | Installation of booms on active crossing and installation of advance warning lights |
| Boston Street, Boggabri Narrabri Shire Council Road Commissioned in June 2009. | \$420,000 | 1 | Passive to active upgrade, flashing lights and booms |
| Passive level crossing sites: Werris Creek – Narrabri Narrabri and Gunnedah Shire Council Roads Commissioned during 2008/2009. | \$265,000 | 40 | Sighting improvements to enhance road approaches, signage to AS1742.7-2007, removal of non-frangible material. |
| Total | \$1.65m | 44 | |

RIC's 2008/09 works program included maintenance of 34 public and 17 private level crossings on the CRN including road maintenance, track reconditioning and replacement of signage as required. One passive level crossing in the North West was relocated to improve safety. Details of the \$2.9 million of work funded by RIC are listed below.

RIC requested its contractor to undertake a detailed review across the entire CRN to survey all public and private level crossings and assess their compliance with RIC and Australian engineering standards. This review and follow up work on a number of locations has been completed.

Level Crossing works funded by RIC

| Location | Cost | Sites | Project Scope |
|-----------------------------------|-------------|--------------|--|
| Moomboodool. Sandy Creek Road. | \$36,000 | 1 | Improvements to track condition and road surface. |
| Yenda. Erigolia Road #2 | \$35,000 | 1 | Improvements to track condition and road surface. |
| Yiddah | \$30,000 | 1 | Renew level crossing road surface with bitumen. |
| Wyalong Central | \$29,000 | 1 | Renew level crossing road surface with bitumen. |
| Moree Dunnnavants Road | \$77,000 | 1 | Renew level crossing road surface with bitumen. |
| Spring Hill Blunt Road | \$71,000 | 1 | Recondition level crossing, and concrete road surface. |
| Cowra Brougham Street | \$18,000 | 1 | Renew level crossing road surface with bitumen. |
| Turrawan | \$340,000 | 1 | Relocation of level crossing to a more appropriate location. |
| Breeza Currabubula Road | \$18,000 | 1 | Improvements to track condition and road surface. |
| Mt Fairy Mt Fairy Road | \$161,000 | 1 | Renewal of level crossing road surface |
| Brushwood | \$35,000 | 1 | Renew level crossing road surface with steel panels |
| Ganmain | \$36,000 | 1 | Renew level crossing road surface with steel panels |
| Matong | \$33,000 | 1 | Renew level crossing road surface with steel panels |
| Matong | \$37,000 | 1 | Renew level crossing road surface with steel panels |
| Matong | \$38,000 | 1 | Renew level crossing road surface with steel panels |
| Matong Pamandi Road | \$32,000 | 1 | Renew level crossing road surface with steel panels |
| Old Junee Rock View | \$55,000 | 1 | Renewal of level crossing road surface |
| Kingsvale | \$29,000 | 1 | Renew level crossing road surface with bitumen |
| Bowenfels Oakly Forest Road. | \$131,000 | 1 | Upgrade level crossing road surface |
| Molong Sandy Creek Road | \$54,000 | 1 | Recondition level crossing and road surface. |
| Manildra | \$36,000 | 1 | Recondition level crossing and road surface. |

LEVEL CROSSINGS

| Location | Cost | Sites | Project Scope |
|--|--------------------|-----------|--|
| Manildra | \$68,000 | 1 | Recondition level crossing and road surface. |
| Wee Waa Warrior Street | \$85,000 | 1 | Upgrade level crossing road surface with bitumen. |
| Merah North | \$196,000 | 1 | Upgrade level crossing road surface with bitumen |
| Yanco Wagga Wagga Road | \$107,000 | 2 | Improvements to road surface. |
| Bathurst Hen and Chicken Lane | \$29,000 | 1 | Improvements to track condition and provision of smother crossing. |
| Temora Twynan Street | \$39,000 | 1 | Renew level crossing road surface with and road surface. |
| Quandary Pucawan Road | \$30,000 | 1 | Renew level crossing road surface with bitumen |
| Beckom Beckom Road | \$28,000 | 1 | Renew level crossing road surface with bitumen |
| Ardlethan Cemetery Road | \$26,000 | 1 | Renew level crossing road surface with bitumen |
| Armidale Kellys Plains Road | \$87,000 | 1 | Renew level crossing surface with bitumen, |
| Murrami Leeton Road | \$73,000 | 1 | Improvements to track condition and provision of smother crossing. |
| Koorawatha Olympic Highway | \$51,000 | 1 | Improvements to track condition and road surface. |
| Joppa Junction to Queanbeyan (private level crossings) | \$193,000 | 5 | Renew level crossing road surface with steel panels |
| Narrandera (private level crossings) | \$33,000 | 1 | Renew level crossing road surface with steel panels |
| Molong to Goobang Junction (private level crossings) | \$473,000 | 10 | Renew level crossing road surface with steel panels |
| Temora (private Level crossings) | \$29,000 | 1 | Renew level crossing road surface with steel panels |
| Total | \$2,878,000 | 51 | |

ARTC Initiatives

ARTC completed a number of level crossing upgrades and improvements as detailed below.

| Region | Line | Works | Cost |
|---------------|--------------------------------------|--------------------------------|-------------|
| East West | | Equipment and signage upgrades | \$134,000 |
| Hunter Valley | Bengalla Junction To Anvill Hill | Installation of active control | \$600,000 |
| Hunter Valley | Drayton to Muswellbrook | Installation of active control | \$600,000 |
| Hunter Valley | Anvill Hill to Sandy Hollow Junction | Level crossing upgrades | \$53,786 |
| Hunter Valley | Branxton To Whittingham | Level crossing upgrades | \$22,434 |
| Hunter Valley | Murulla to Werris Creek | Level crossing upgrades | \$122,764 |
| Hunter Valley | Sandy Hollow Junction To Wilpinjong | Level crossing upgrades | \$352,938 |
| Hunter Valley | Ulan to Gulgong | Level crossing upgrades | \$17,817 |
| Hunter Valley | Wilpinjong to Ulan Colliery Junction | Level crossing upgrades | \$116,015 |
| North South | Junee - The Rock | Level crossing upgrades | \$2,000 |
| North South | Joppa Junction - Yass | Level crossing upgrades | \$60,000 |
| North South | The Rock - Albury | Level crossing upgrades | \$22,500 |
| North South | Telarah - Craven | Level crossing upgrades | \$80,000 |

| Region | Line | Works | Cost |
|---------------|--------------------------------------|--------------------------------|--------------------|
| North South | Craven - Kempsey | Level crossing upgrades | \$132,000 |
| Hunter Valley | Anvill Hill to Sandy Hollow Junction | Sighting distance improvements | \$19,790 |
| Hunter Valley | Bengalla Junction To Anvill Hill | Sighting distance improvements | \$67,962 |
| Hunter Valley | Sandy Hollow Junction To Wilpinjong | Sighting distance improvements | \$68,598 |
| | | Total: | \$2,472,604 |

RTA Initiatives

Major Works

Garfield Road, Riverstone



The upgrade of the level crossing at Garfield Road, Riverstone is being completed in stages and is expected to be commissioned in March 2010. Work planned for the site includes the interfacing of traffic lights and level crossing controls; minimisation of boom gate down-time; installation of a new pedestrian crossing; and improved street lighting and pavement markings.

Works completed in 2008/9 include the design and planning stages and the realignment of the road, including the relocation of all power and telecommunication services to the new crossing location.

Total cost of works in 2008/09: \$1.602 million (rail works) \$2.939 million (road works) \$4.541 million (total)

Funding for Level Crossings

| Year | Program / Agency | Expenditure (\$million) | Total (\$million) |
|---------|------------------|-------------------------|-------------------|
| 2003/04 | RIC | 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 | |
| | RIC | 0.277 | |
| | LCIP | 7 | |
| 2007/08 | RailCorp | 2.65 | 18.49 |
| | ARTC | 6.9 | |
| | RIC | 1.94 | |
| | LCIP | 7 | |
| 2008/09 | RailCorp | 2.807 | 18.027 |
| | ARTC | 2.473 | |
| | RIC | 4.528 | |
| | RTA | 2.939 | |
| | LCIP | 5.280 | |

Level Crossing Closures

Apart from grade separation, the permanent closure of a level crossing is the only way to eliminate the interface between road and rail and the risk present at the crossing. LCSC agencies actively pursue closure of both public and private level crossings, wherever possible. Sites for potential closure are identified either by their ALCAM score, or by local government, the RTA, the rail industry or the general public. Twenty six private and public railway level crossings were closed in 2008/2009.

| Locality | Kilometrage | Line | Status |
|-----------|-------------|-------------|--|
| Rappville | 791.294 | North Coast | Public ³ Accommodation ⁴ |
| Antiene | 284.934 | Main North | Private ⁵ Accommodation |
| Nana Glen | 641.217 | North Coast | Overbridge |

³ This means the railway crossing is located on main or local roads (the RTA or local government is the road owner).

⁴ This is a public or private railway crossing that qualifies as "accommodation works" as defined in Section 91 of the *Public Works Act (1912)*. It was provided by the constructing authority at the time of construction of a new railway line, to maintain existing access. So where a rail line cuts access to a road or property the rail authority was, and still is, obliged to provide and maintain access.

⁵ These railway crossings allow access to private properties, or between parts of private properties. Private railway crossings are for the use of the property holder and their nominees and not open to public access. Although they are often called farm crossings, they are not always found in rural areas.

| Locality | Kilometrage | Line | Status |
|-----------------|--------------------|---------------|-----------------------|
| Mangoola | 309.627 | Ulan | Public Accommodation |
| Coggans Creek | 387.140 | Ulan | Public Accommodation |
| Denman | 312.986 | Ulan | Public Accommodation |
| Denman | 320.852 | Ulan | Public Accommodation |
| Denman | 322.573 | Ulan | Public Accommodation |
| Sandy Hollow | 331.646 | Ulan | Public Accommodation |
| Sandy Hollow | 340.940 | Ulan | Public Accommodation |
| Wollar | 410.543 | Ulan | Public Accommodation |
| Wollar | 410.910 | Ulan | Public Accommodation |
| Sandy Hollow | 339.343 | Ulan | Public Accommodation |
| Ulan | 439.100 | Ulan | Public Accommodation |
| Table Top | 633.900 | Main Southern | Private Accommodation |
| Braunstone | 684.032 | North Coast | Private Accommodation |
| Grafton | 700.004 | North Coast | Private Accommodation |
| Coggans Creek | 413.982 | Ulan | Private Accommodation |
| Kerabee | 363.180 | Ulan | Underbridge |
| Gulgong | 453.566 | Ulan | |
| Minimbah | 226.173 | Main North | Public Accommodation |
| Weismantels | 277.189 | North Coast | Public Accommodation |
| Gulgong | 452.754 | Ulan | Private Accommodation |
| Ardglen | 364.578 | Main North | Private Accommodation |
| Mangoola | 305.371 | Main North | Private Accommodation |
| Craven | 295.677 | North Coast | Private Accommodation |

STAYSAFE Committee

In 2001, the STAYSAFE Committee conducted an inquiry into the safety of level crossings following several fatal crashes at railway level crossings in southern New South Wales. In 2004, the Committee handed down its findings and recommendations.

The report made 69 recommendations, grouped according to matters relating to:

- the administration of level crossings;
- the road environment at level crossings;
- train crews;
- locomotives and rolling stock;
- motor vehicles at level crossings;
- drivers and other road users at level crossings; and
- the railway environment at level crossings.

The Government fully supported or partially supported 58 of the 69 recommendations.

In 2006, the Committee reviewed the response and actions taken to address its recommendations. The Committee's subsequent report at that time did not make any additional recommendations.

In March 2009, the Director-General of the then Ministry of Transport appeared at a public hearing of the STAYSAFE Committee to update progress on railway level crossing safety and the implementation of the Government's response to the Committee's previous recommendations. The Committee then released a report in June 2009 making a further seven recommendations. NSWTI will continue to monitor the responsible agency's implementation of the Committee's outstanding original and additional recommendations.

Rail Safety Act 2008

The Rail Safety Act 2008 commenced on 1 January 2009. It contains provisions which require rail infrastructure managers and road authorities to enter into safety interface agreements to better manage the risks at level crossings. There is a three year period, until 1 January 2012 to transition to these arrangements.

To assist with implementation and to inform road and rail agencies of their obligations, ITSRR conducted workshops across NSW in May 2009 to which all Councils and the RTA were invited. ITSRR also developed an interface template in consultation with all LCSC member agencies. The template is available from the ITSRR website.

The RTA and rail infrastructure managers are working together to develop safety interface agreements.

National Involvement

New South Wales participates in a number of national level crossing initiatives which seek to promote level crossing safety. Outlined below are the initiatives that were undertaken in 2008/09.

Boom Gates for Rail Crossings Program

As part of the Nation Building and Jobs Package, the Australian Government allocated \$42.77 million over two years to install boom gates at up to 55 high risk level crossings throughout NSW.

ARTC is delivering the upgrades for 53 of the 55 crossings, including one on a private railway line at Kearsley (South Maitland Railways). RailCorp is delivering the upgrades for the two level crossings on its network (both at Jaspers Brush) and has engaged its alliance partner, NovoRail for their design and construction. All 55 crossings are scheduled to be commissioned by 30 June 2010.

National Rail Level Crossing Group

In February 2008, the Australian Transport Council (ATC) agreed to develop a National Transport Policy. Ten work streams were originally established to progress various elements of the strategy including a Safety and Security Working Group, now renamed the Safety Standing Sub-Committee (SSSC).

Towards the end of 2008 it was agreed two groups would be established under the SSSC, to progress matters previously dealt with mostly under the former SCOT Rail Group. One group covers level crossings (the Rail Level Crossing Group - RLCG), and the other rail safety policy and regulation. NSWTI and the RTA represent NSW on the RLCG. The RTA and NSWTI represent New South Wales on the RLCG.

In 2008/09, the RLCG developed a draft National Rail Level Crossing Strategy, for the consideration of the Australian Transport Council in 2009/10.

National ALCAM Committee

ALCAM is an assessment methodology used to assess risk at level crossings and to assist in the prioritisation of level crossings according to their comparative safety risk. It provides a process to assist in deciding which level crossings to upgrade as well as a method to help determine the optimum safety improvements for individual sites.

ALCAM is used across Australia and is overseen by the national ALCAM Committee comprising representatives of all Australian states and territories. The Committee manages ALCAM development and promotes consistency in its application across Australia. Currently, New South Wales chairs the National ALCAM Committee which reports to the National Rail Level Crossing Group.

Future Directions

Establishment of NSW Transport and Infrastructure

In June 2009, the Government announced the establishment of NSW Transport and Infrastructure (NSWTI) as the agency to oversee all transport and roads coordination, infrastructure, policy and planning.

This streamlined transport structure is intended to deliver integrated transport planning and service delivery, including for level crossing safety. NSWTI has already assumed responsibility for the secretariat function for the LCSC and the LCWG and arrangements are being made for the NSW Level Crossings Website to be hosted by NSWTI. Future streamlining of processes and coordination of level crossings safety initiatives will likely occur as part of the establishment of NSWTI.

Human Factors Investigation Tool

ITSRR has developed a level crossing investigation tool to improve level crossing investigation and identification of contributing factors to level crossing incidents and accidents. The purpose of the tool is to promote better understanding of accident causation and the information collected will assist in decisions on risk reduction strategies. Following a successful trial of the tool ITSRR is now seeking to promote its use in the management of risks to safety at level crossings.

The current tool is designed to collect information on a variety of factors relating to human performance and behaviour that can contribute to level crossing incidents. It is primarily designed for use following an incident to collect information that can be used to learn about factors influencing level crossing safety. This includes supporting the assumptions built into level crossing risk models such as ALCAM. It is also intended to have a proactive application in inspecting level crossings before an incident has occurred.

ITSRR will continue to work with a range of stakeholders to make improvements to the tool and promote its uptake.

Appendix A: LCIP Expenditure

Construction

| Location | Expenditure (\$,000) |
|----------------------------|-------------------------|
| Bellambi Lane, Bellambi | 28 |
| Liverpool Street, Scone | 87 |
| Princes Highway, Unanderra | 105 |
| Park Road, Woonona | 1003 |
| Nana Glen crossing loop | 600 |
| Total | 1823 |

Development of Concept Design

| Location | Expenditure (\$,000) |
|---|-------------------------|
| Shellharbour Road, Shellharbour | 15 |
| Lansdowne Road, Lansdowne | 16 |
| Clarinda Street, Faulconbridge | 19 |
| Creamery Road, Albion Park | 29 |
| Summerland Way, Koolkhan | 36 |
| Hulbert Street, Sawtell | 37 |
| King Street, Paterson | 37 |
| Fern Street, Gerringong (omega) | 40 |
| Darling Street, Carrington | 45 |
| Sheep Wash Road, Calwalla | 45 |
| Military Road, Yennora | 52 |
| Parramatta Road, Clyde | 54 |
| Summerland Way (Kyogle Road) Namoon | 54 |
| Hoddle Street (H25), Robertson | 56 |
| Gosford Road / Rawson Road, Woy Woy | 59 |
| Landsdowne Road, Kundle Kundle | 60 |
| Bong Bong Road, Dapto | 72 |
| Poplar Avenue (Leeton Truck Bypass) Leeton | 72 |
| Cessnock Road, Kearsley | 81 |
| Beaumont Street, Hamilton | 178 |
| Balfour Street & Olympic Highway, Culcairn | 220 |
| Couche Crescent, Koolewong (includes stage 1 road works) | 457 |
| Bullus Drive, Moree | 14 |
| Newell Highway | 16 |
| Tilly Willy Street / McKay Street Macksville | 23 |
| Hebden Road, Ravensworth | 62 |

| Location | Expenditure (\$,000) |
|--------------|-------------------------|
| Total | 1849 |

Detailed Design and Development

| Location | Expenditure (\$,000) |
|-----------------------------|-------------------------|
| Avondale Road, Dapto | 10 |
| Bundarra Street, Blackheath | 35 |
| Lansdowne Road, Melinga | 91 |
| Bypass Road, West Wyalong | 31 |
| Warnervale Road, Warnervale | 150 |
| Railway Parade, Corrimal | 50 |
| Total | 367 |

Minor Works

| Location | Expenditure (\$,000) |
|---|-------------------------|
| Bushland Drive, Taree | 1 |
| River Street (Comboyne Street), Kendall | 1 |
| Blumer Avenue, Griffith | 1 |
| Canal Road, Leeton | 1 |
| Public Road, Bogan Gate (Closure) | 1 |
| Bathurst Street, Forbes (Closure) | 1 |
| Wilton Road Maldon | 2 |
| Docker Street, Wagga | 2 |
| May Street Condobolin (Closure) | 2 |
| Metford Public Crossing | 3 |
| Muldoon Street, Taree | 3 |
| New England Highway, Scone | 3 |
| Malbon Street, Bungendore | 3 |
| Fernleigh Road, Wagga Wagga | 3 |
| Windsor Fairey Road | 4 |
| Macquarie Street, Taree | 4 |
| Lansdowne Road, Coopernook | 4 |
| Bruxner Highway, Casino | 4 |
| Camden Road, Douglas Park | 4 |
| Mascot | 5 |
| Whittingham | 5 |
| West Dapto Road, Kembla Grange | 5 |
| Olympic Highway (Doddyns Street), Junee | 5 |
| Geordie Street, Bowenfels | 5 |

LEVEL CROSSINGS

| Location | Expenditure (\$,000) |
|---|-------------------------|
| Station Lane, Lochinvar | 6 |
| Robertson Street, Carrington | 6 |
| Sh11 Rail Level Crossing Wauchope | 6 |
| High Street, Coffs Harbour | 6 |
| Stewart Ave, Wickham | 7 |
| Runnymede (Andersons Road) Kyogle | 7 |
| H6, Blayney | 7 |
| Mulgrave | 8 |
| Corridor Strategy Cootamundra to Albury | 8 |
| Pine Road, Fairfield | 9 |
| Urana Street, The Rock | 9 |
| Belgrave Street, Kempsey | 11 |
| Wingecarribee | 20 |
| Lloyds Road, Bathurst | 35 |
| Wollongong | 39 |
| Old Port Road, Wollongong | 40 |
| Wollondilly | 40 |
| Griffith | 43 |
| Level Crossing Inspections (Western) | 69 |
| Total | 448 |

Associated Level Crossing Initiatives

| | Expenditure (\$,000) |
|---------------------------------------|-------------------------|
| Level Crossing Development | 38 |
| Queue Monitoring | 19 |
| Onsite Level Crossing Data Collection | 32 |
| Motorist Campaign | 289 |
| Policy Development and Roll Out | 64 |
| GIS Database | 24 |
| Total | 466 |

2007/08 Projects Completed in 2008/09

| Location | Expenditure (\$,000) |
|--------------------------------|-------------------------|
| Holten Drive, Broken Hill | 1 |
| Burradoo Road, Burradoo | 16 |
| Oolong Road, Gunning (closure) | 32 |
| Primrose Street, Wingham | 41 |
| Plunkett Street, Yerong Creek | 67 |
| Caloola, Baan Baa | 70 |

LEVEL CROSSINGS

| | |
|----------------------------|------------|
| Grogan Road, Stockinbingal | 100 |
| Total | 327 |

Totals

| | Expenditure (\$,000) |
|---------------------------------------|---------------------------------|
| Construction | 1823 |
| Development of Concept Design | 1849 |
| Detailed design and Development | 367 |
| Minor Works | 448 |
| Associated Level Crossing Initiatives | 466 |
| 2007/08 projects completed in 2008/09 | 327 |
| Total | 5280 |

Glossary

| | |
|-----------------|--|
| Active Control | lights, bells, boom gates warn motorists; and lights, bells, booms, and locking swing gates warn pedestrians. |
| ALCAM | Australian Level Crossing Assessment Model |
| ARTC | Australian Rail Track Corporation |
| ATSB | Australian Transport Safety Bureau |
| CRN | Country Regional Network |
| ITSRR | Independent Transport and Reliability Regulator |
| LCIP | Level Crossing Improvement Program |
| LCSC | Level Crossing Strategy Council |
| LCWG | Level Crossing Working Group |
| LGA&SA | Local Government Association and Shires Association |
| NSWTI | NSW Transport and Infrastructure |
| OTSI | Office of Transport Safety Investigations |
| Passive Control | stop or give way signs warn motorists about a level crossing. Signs warn pedestrians and mazes control entry to the rail corridor. |
| RIC | Rail Infrastructure Corporation |
| RLCG | Rail Level Crossing Group |
| RTA | Roads and Traffic Authority |
| SCOT | Standing Committee on Transport |
| SSSC | Safety and Security Standing Committee |

