



South Australia's

Level Crossing Safety Strategy

2025–2034

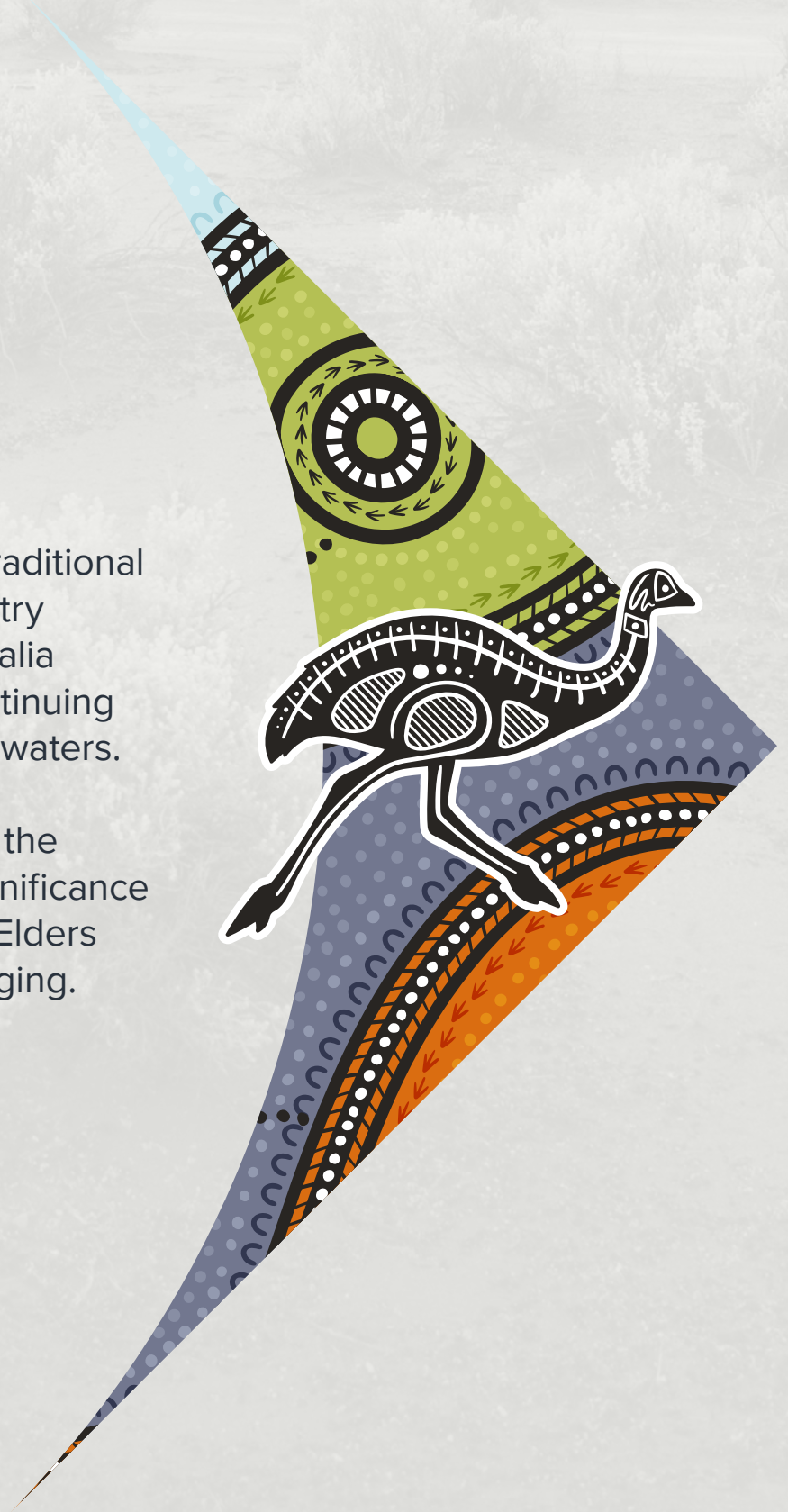


Government of South Australia
Department for Infrastructure
and Transport

Build. Move. Connect.

We acknowledge the Traditional Custodians of the Country throughout South Australia and recognise their continuing connection to land and waters.

We pay our respects to the diversity of cultures, significance of contributions and to Elders past, present and emerging.



Contents

Summary	4
Minister's foreword	5
South Australia's Level Crossing Safety Strategy	6
Vision and objectives	8
Strategic focus areas	8
The Safe System approach	10
Context, safety risks and trends	11
The rail network	11
Types of safety controls at level crossings	12
Level crossings in SA	16
Observed trends	18
Factors contributing to risks	22
Strategic focus areas	24
Education and enforcement	24
Assets, technology and innovation	25
Data and analysis	26
Coordination and collaboration	27
Implementation	28
Accountability	28
Evaluation	29
References	30

This Strategy forms
part of our overarching



**Transport
Strategy**



Road Safety Strategy



Level Crossing Safety Strategy

Active Transport and Personal Mobility Strategy

Freight and Supply Chain Strategy

Public Transport Strategy (under development)

Future Transport Technology Strategy (to be developed)



Summary

Purpose

The aim of *South Australia's Level Crossing Safety Strategy 2025–2034* (the Strategy) is to contribute towards the national vision of zero harm at South Australia's level crossings by 2050.

Context

Across South Australia, there are 555 public road level crossings and 471 pedestrian level crossings.

Level crossings are a necessary part of the rail system but carry an inherent risk of collision and because of the size and weight of trains, even low-speed impact has the potential for serious harm.

Between 2019–2023 there were 582 near-miss incidents reported in South Australia and 34 collisions, resulting in 11 lives lost and six serious injuries.

Level crossings are a complex environment with different levels of risk and safety controls that operate under varied organisational and legislative requirements. This necessitates a shared safety responsibility among state and local governments, rail infrastructure owners and the members of the public who use them.

The Strategy has been developed in consultation with key stakeholders, including members of the South Australian Level Crossing Advisory Committee (SALCAC) and is guided by a Safe System approach.

Implementation and monitoring

Initiatives contained in the Strategy will be delivered through a rolling three-year action plan, to be updated annually.

The SALCAC will monitor the Strategy's progress and adjust accordingly based on pre-determined performance indicators.

Focus areas

The Strategy focuses on four key areas based on evidence, analysis of incident data, consultation with key stakeholders and alignment with the *National Level Crossing Safety Strategy 2023-2032*.

The four areas are:

1

Education and enforcement

Supporting and enforcing positive change in level crossing user behaviour to reduce risks at level crossings through actions including safety campaigns, school education, increasing driver and pedestrian awareness, and addressing incidents on the rail network.

2

Assets, technology and innovation

Taking actions to improve and identify safety controls, emerging technology and innovations that present opportunities to cost-effectively improve level crossing safety.

3

Data and analysis

Focusing on data collection to enable more targeted evidence-based interventions and measure the effectiveness of those treatments.

4

Coordination and collaboration

Delivery of strategies to increase and support opportunities for collaboration to improve knowledge sharing, risk identification and management, alignment, integration, and coordination between stakeholders.

Minister's foreword



An effective train and tram network delivering efficient movement of passengers and freight is critical to our State, and we have a system that serves us extremely well.

But improvement of our network must be an ongoing goal, and this includes the vital area of safety at level crossings.

Where motorists, cyclists, motorcyclists, heavy vehicles and pedestrians cross rail lines, the potential for collision is a reality, despite advances in technology to keep people safe.

In South Australia, between 2019 and 2023, there were 34 collisions at level crossings, resulting in 11 lives lost and six serious injuries. Of great concern were another 582 reported near-miss incidents.

The aim of *South Australia's Level Crossing Safety Strategy 2025–2034* is to deliver actions to reduce level crossing collisions, providing a system that carries fail-safe mechanisms to account for human error with a goal of zero harm at level crossings by 2050.

The impact of injury and fatalities at level crossings goes beyond those directly involved, to their family and friends, the health system and train and tram drivers. There is also a social and economic cost through disruption to train and tram services and delivery of freight.

There is an expectation by some that active crossings will eliminate all risk, but crash and near-miss data shows this isn't the case.

Collaboration with stakeholders across freight and passenger networks, as well as road and rail safety authorities and crossing users, will be key to us achieving our goals.

Importantly, the Strategy carries with it a strong commitment to measurable actions which will be independently reviewed annually.

I commend this plan and look forward to seeing positive results through its implementation.

Hon Tom Koutsantonis MP

Minister for Infrastructure and Transport

South Australia's Level Crossing Safety Strategy

The Strategy outlines the State Government's strategic priorities to improve safety at level crossings and complements, and supports effective level crossing safety initiatives and programs already in place across South Australia.

The Strategy replaces the *Railway Crossing Safety Strategy* released by the State Government in 2017.

The Strategy has been developed in consultation with key stakeholders, including members of the South Australian Level Crossing Advisory Committee. It is guided by a Safe System approach that will ensure that level crossing outcomes are looked at holistically and allow for greater consistency and coordination between road and rail authorities.

In developing this Strategy, consideration has been given to other strategic documents including *South Australia's Road Safety Strategy to 2031* and the *National Level Crossing Safety Strategy 2023–2032*.

Development of the Strategy has been guided by evidence, analysis of incident data, and consultation with key stakeholders. Through this development key themes emerged which have informed the strategic priorities and focus areas of the Strategy:



The Safe System approach

Using a holistic, collaborative risk-based approach that includes participation from key stakeholders and local communities.



Education and enforcement

Driving positive change in level crossing user behaviour to reduce risks at level crossings.



Data and analysis

Reliability, consistency and availability of level crossing data and reporting.



Alignment with the *National Level Crossing Safety Strategy 2023–2032*

To ensure national priorities are incorporated at a state level.



Assets, technology and innovation

Improved safety controls, emerging technology and innovations present opportunities to cost-effectively improve level crossing safety.



Coordination and collaboration

Shared responsibility and a focus on coordinated and prioritised investment opportunities. Level crossing research, strategy and policy is often undertaken independently and not fully shared with opportunities to improve alignment, integration and coordination.

Implementation of the Strategy will be overseen by the Department for Infrastructure and Transport (the Department) in consultation with SALCAC, who will monitor and review the Strategy.

The State Government will continue to work in partnership with the National Level Crossing Safety Committee and provide continued support on the National Australian Level Crossing Assessment Model (ALCAM) Committee.

A rolling three-year action plan, to be updated annually, will sit alongside the Strategy. Initiatives identified through the Strategy will be evidence-based through analysis of risks and known or emerging issues. It will set out the actions and priorities, as well as responsibilities and timeframes for implementation. The action plan will focus on implementing a small number of higher impact initiatives with clear and identifiable benefits, informed by research and evidence.

Level crossings are complex. With different levels of risk, safety controls and organisational, and legislative requirements, safety at level crossings is a shared responsibility between many organisations, including state and local governments, rail infrastructure owners and the members of public that use them.

Successful delivery of this Strategy requires a continued collaborative effort between all parties responsible for level crossing safety outcomes.

Vision and objectives

Zero harm at South Australia's level crossings by 2050.

To achieve the national vision of zero harm at level crossings the goal is to reduce:

- incidents and near-misses at level crossings each year; and
- the impact of incidents at level crossings.

Strategic focus areas

1

Education and enforcement

Supporting and enforcing positive change in level crossing user behaviour to reduce risks at level crossings through actions including safety campaigns, school education, increasing driver and pedestrian awareness, and addressing incidents on the rail network.

2

Assets, technology and innovation

Taking actions to improve and identify safety controls, emerging technology and innovations that present opportunities to cost-effectively improve level crossing safety.

3

Data and analysis

Focusing on data collection to enable more targeted evidence-based interventions and measure the effectiveness of those treatments.

4

Coordination and collaboration

Delivery of strategies to increase and support opportunities for collaboration to improve knowledge sharing, risk identification and management, alignment, integration, and coordination between stakeholders.



The Safe System approach

The Safe System approach adopts a holistic view of the road and rail transport system and the interactions at level crossings between people, vehicles, rolling stock and infrastructure.

It recognises that human error and vulnerability exists, and that people will always make mistakes, but this should not result in loss of life or serious injury.

There are four overarching pillars under the Safe System approach that influence level crossing safety outcomes. These are safe infrastructure, safe vehicles, safe speeds and safe users.

The Safe System model is regarded as international best practice and is the framework for improving road safety including level crossings across Australia.

“Safe System” is the Australian terminology for a philosophy shared by different practices in many different nations. It is built on several key principles:

- 1 People make predictable mistakes that can lead to crashes.
- 2 The human body has a limited physical ability to tolerate crash forces before harm occurs.
- 3 A shared responsibility exists amongst those who plan, design, build, manage and use level crossings to prevent crashes resulting in serious injury or loss of life.
- 4 All parts of the system must be strengthened to multiply their effects and if one part fails, the rest should protect people from being killed or seriously injured.



Context, safety risks and trends

Trains and trams provide a critical network for the transport of passengers and freight across our State. However, the combination of speed, passengers and freight travelling on intersecting rail and road systems has the potential for high impact or catastrophic incidents.

While they do not occur often, any incident at a level crossing may result in injury or loss of life. Furthermore, it may cause service disruptions to trains and heavy vehicles, delays to motorists and pedestrians, and property damage.

All incidents, whether they are near-misses or collisions resulting in serious injuries or loss of life, have an immeasurable effect on the community.

This includes train drivers and their organisations, emergency services, incident responders, family and friends of those directly impacted, and the general public.

The impacts on communities and the economy can be significant and far-reaching.

The rail network

Level crossings are the points at which a road or footpath meet a rail or tram line.

South Australia has an urban Adelaide Metropolitan Passenger Rail Network, a tram network and several regional and interstate lines that transport freight and passengers. Between Salisbury and Belair there is a shared metropolitan passenger and interstate rail corridor.

There are 555 public road level crossings and 471 pedestrian level crossings across the State. This includes 79 road level crossings and around 300 pedestrian level crossings on the passenger network.

The tram network around Adelaide's central business district and at Glenelg operates within a shared road space with motorists and pedestrians and the road crossings are under traffic light control. When the tram operates between the city and Glenelg, safety controls consistent with the other passenger networks are used and is why the tram network is included as part of this Strategy.

The types of level crossing safety risks differ between metropolitan Adelaide¹, regional locations and for pedestrian sites. Factors such as speed, type of vehicles, type of rail vehicle, traffic and pedestrian volumes and the type of safety control at the level crossing all play a part in what risks exist at a level crossing.

Research suggests that a motorist's situational awareness between urban and rural level crossing environments is markedly different and does play a part in how they approach a level crossing².

Types of safety controls at level crossings



Active level crossings

Active level crossings are fitted with warning devices to alert motorists and pedestrians about an approaching train.

Active level crossings would have either flashing lights and audible alarms or flashing lights, audible alarms and boom gates that automatically close when a train is coming.

All road level crossings on the Adelaide Metropolitan Passenger Rail Network are equipped with active safety controls and some pedestrian crossings are fitted with automatic gates.

In regional areas, not all level crossings have active safety controls and the ones that do typically are fitted with flashing lights and audible alarms only.

The majority of the road level crossings on the tram network are equipped with flashing lights and boom gates, but there are also locations under traffic light control or passive signs.



Figure 1. Example of an active level crossing – boom gates with flashing lights



Figure 2. Example of an active level crossing – primary flashing lights (no boom gates)



Figure 3. Example of an active pedestrian crossing



Passive level crossings

Passive level crossings are fitted with a Stop or Give Way sign to warn motorists of the presence of a level crossing. The pedestrian maze way is designed so that pedestrians look both ways for trains before crossing.

Regional level crossings are most often equipped with passive warnings such as Stop or Give Way signs which rely on the road user to slow down or stop to check for trains before proceeding through the crossing.

Passive level crossings are similar to road intersections with Stop and Give Way signs, with the main difference being the train has right of way over the road.



Figure 4. Example of a passive level crossing – Give Way signs



Figure 5. Example of a passive level crossing – Stop signs



Figure 6. Example of a passive adjacent active road level crossing (pedestrian maze)

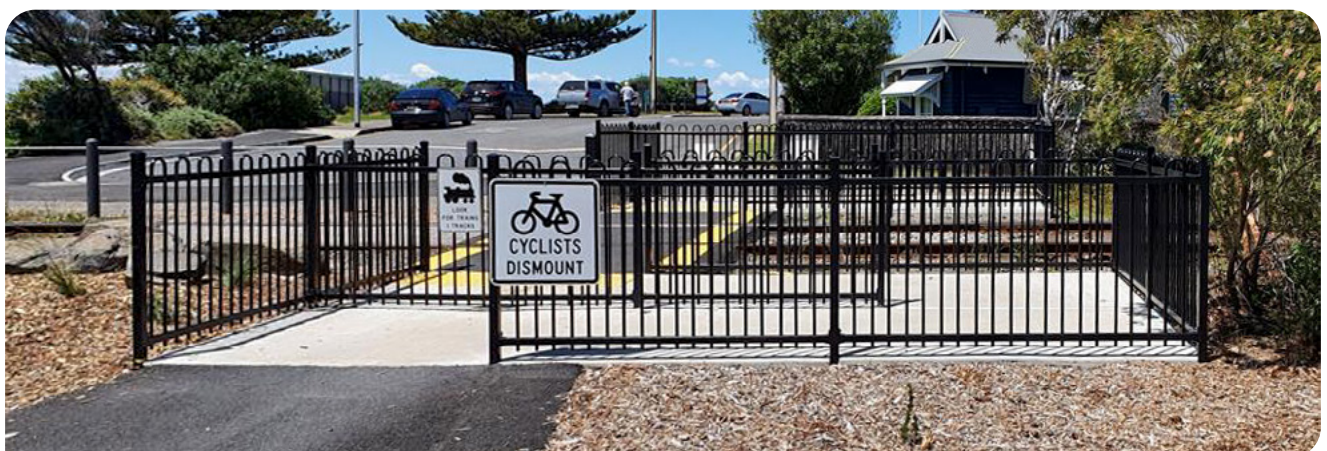


Figure 7. Example of a passive pedestrian maze

Traffic signals

Traffic signals are installed at some active level crossing locations as a secondary safety control where traffic may queue back to the rail line or as part of a pedestrian actuated crossing for pedestrians to safely cross the road.

Traffic signals with Queue Relocation Logic may also be installed at the level crossing as a secondary measure. Vehicle detectors installed in the road can identify when a queue has formed back to a level crossing. This causes the traffic signals at the level crossing to change from green, to yellow and then red to assist to prevent vehicles from stopping over the crossing or blocking it. This occurs regardless of whether a train or tram is approaching. Once the traffic clears, the level crossing traffic signals will return to green if a train or tram is not approaching, allowing motorists to continue their journey.



Figure 8. Example of a pedestrian actuated (push button) crossing at a level crossing



Figure 9. Example of a traffic signals secondary control with Queue Relocation Logic



Active Advance Warning Signs

Active Advance Warning Signs are used on the road approach at select level crossings, in addition to standard advance warning signs. This provides motorists with advance notice that the active controls at the level crossing are about to start flashing and so should prepare to stop.



Figure 10. Example of an Active Advance Warning Sign

Caution More Than One Train

Caution More Than One Train warning devices are used at select pedestrian level crossings on the passenger rail network that have multiple rail lines across it. The warning device activates when there are multiple trains approaching the crossing as they could be travelling in opposite directions on different tracks.



Figure 11. Example of a Caution More Than One Train sign



Level crossings in SA

Across South Australia, 242 road level crossings are equipped with active safety controls including flashing lights, boom gates and flashing lights or traffic signals and 313 road level crossings have passive Stop or Give Way sign controls (Figure 12).

Of the 471 pedestrian level crossings across South Australia, 28 are equipped with active safety controls like automatic gates and 189 are passive mazes adjacent to an active road level crossing with booms or flashing lights. The remaining 254 pedestrian level crossings are passive mazes (Figure 13).

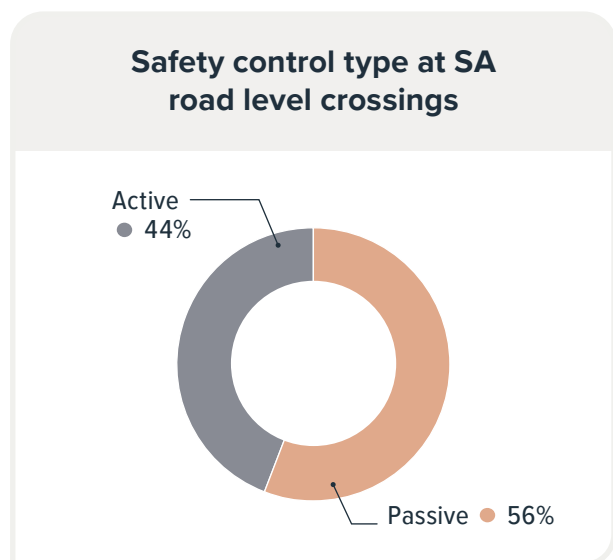


Figure 12. Safety control type at SA road level crossings (as of September 2024)

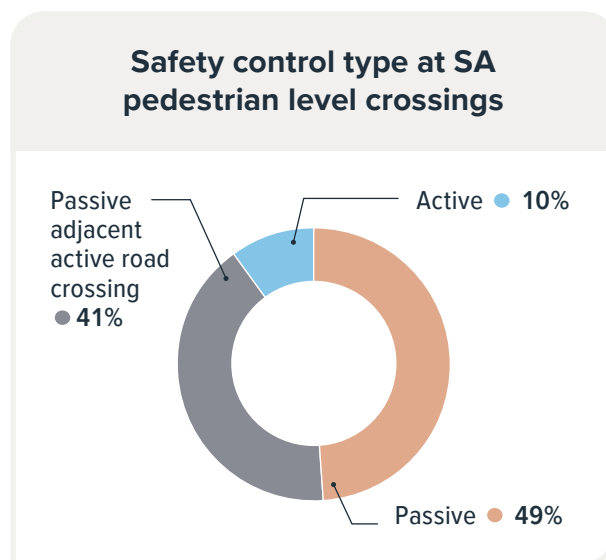


Figure 13. Safety control type at SA pedestrian level crossings (as of September 2024)



Due to frequent trains, trams and higher road and pedestrian volumes in the metropolitan area, more road and pedestrian level crossings have active safety controls than in the regional areas (Figures 14, 15).

Even with active safety controls in place, incidents at level crossings still occur. This highlights the importance of promoting safe behaviours amongst level crossing users and the emphasis that level crossing safety is everyone's responsibility.

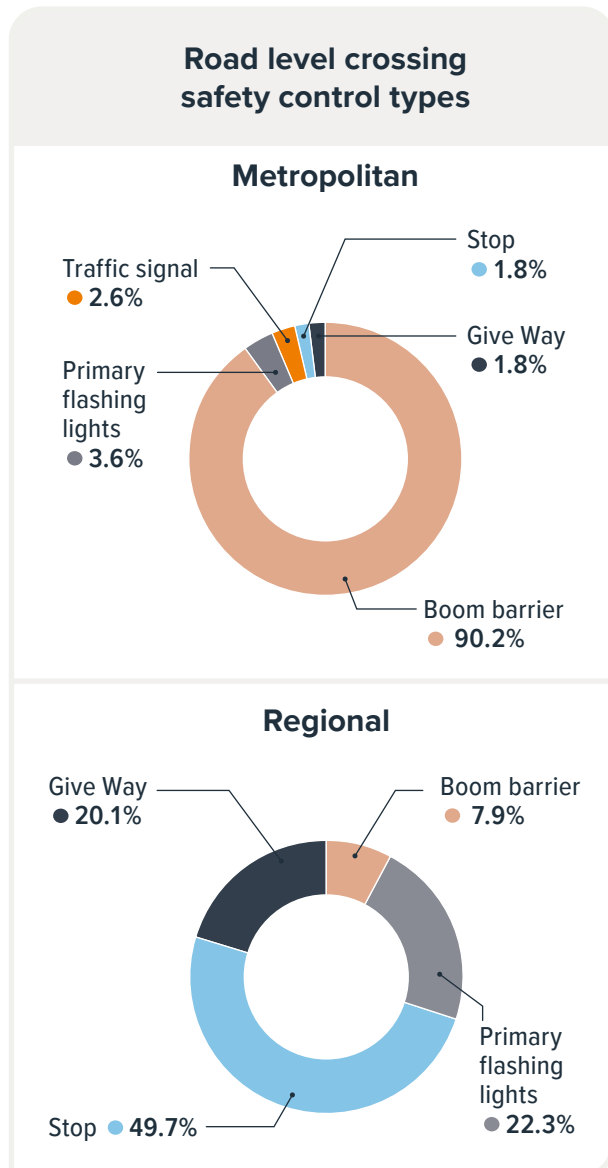


Figure 14. Road level crossing safety control type (as of September 2024)

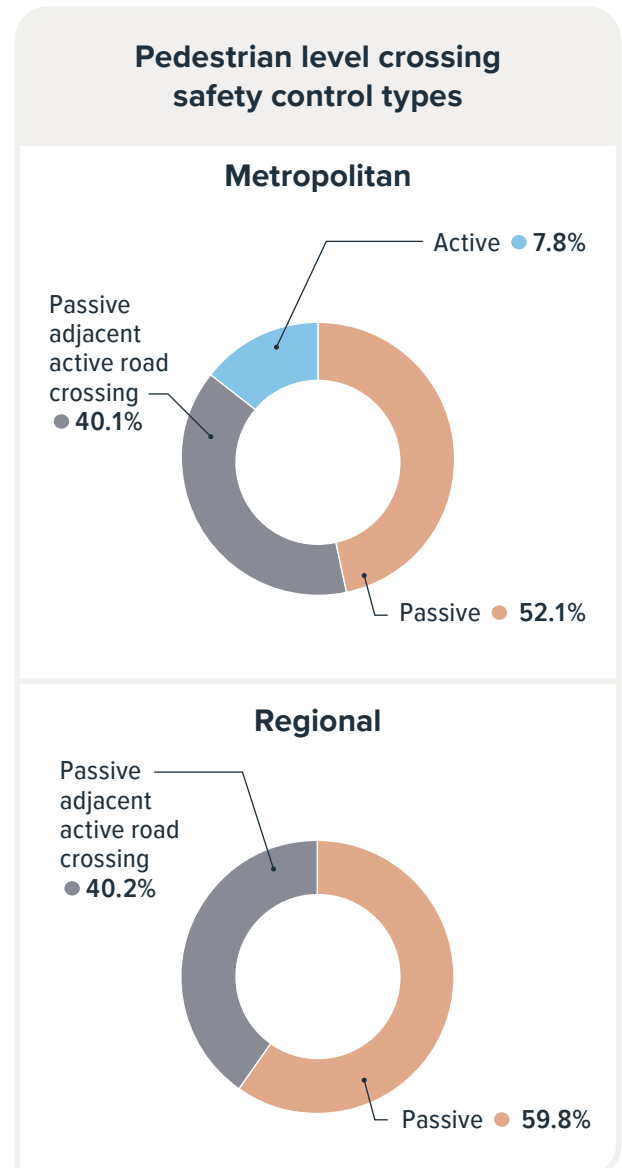
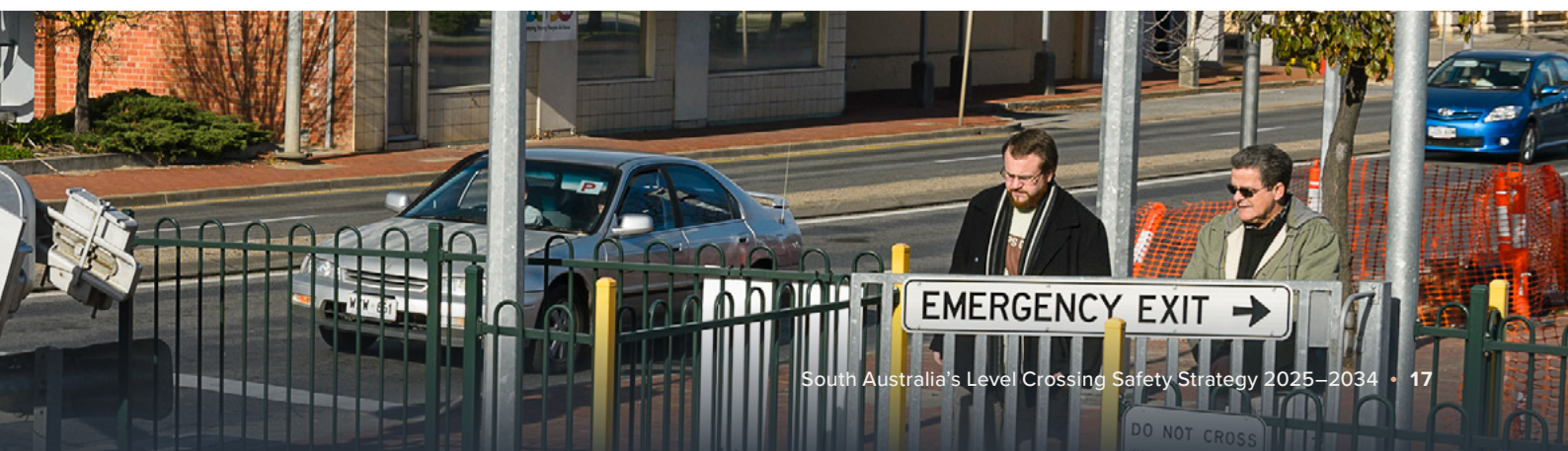


Figure 15. Pedestrian level crossing safety control type (as of September 2024)



Observed trends

Under the *Rail Safety National Law (South Australia) Act 2012*³, rail transport operators are required to report all notifiable occurrences⁴ that occur on, or in relation to, their railway operations to the Office of the National Rail Safety Regulator (ONRSR).

Between 2019-2023 there were 582 near-miss incidents reported and 34 collisions which resulted in 11 lives lost and six serious injuries⁵ (Figure 16).

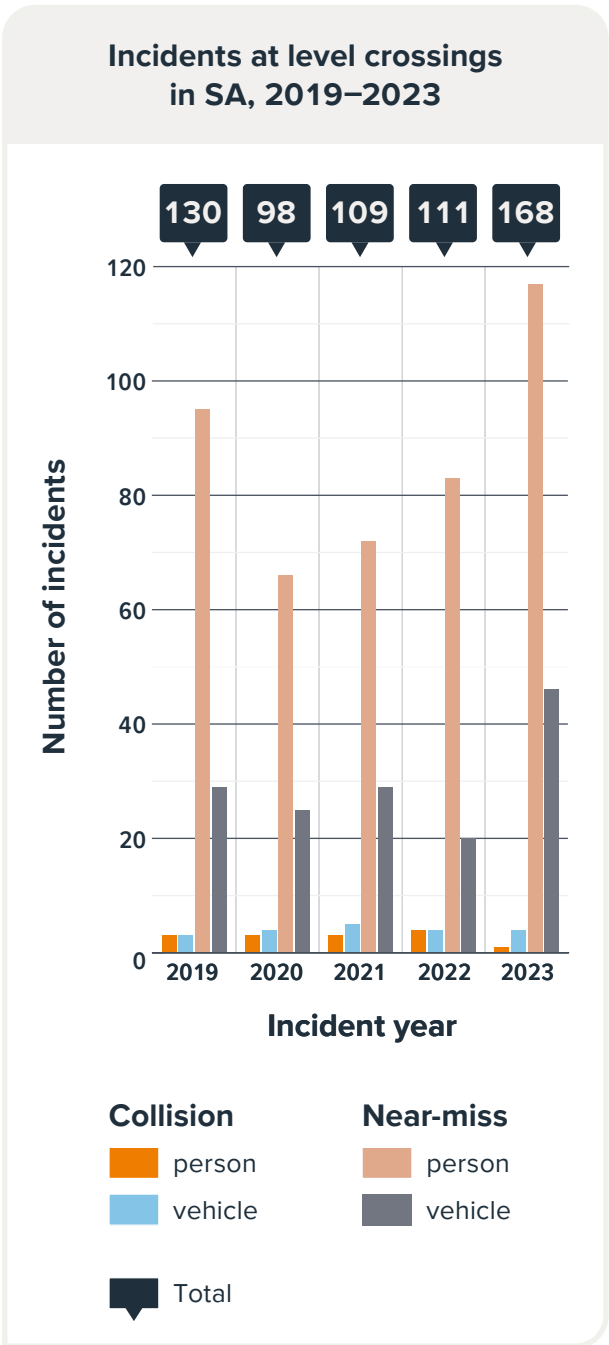


Figure 16. Incidents at level crossings in SA 2019–2023

There was a noticeable decrease in overall incidents during 2020 and 2021 which is likely attributed to the impact of the Covid-19 public health emergency as well as major project work that saw the Gawler Central and Tonsley/Flinders passenger lines close.

Information provided in the *National Level Crossing Safety Strategy 2023–2032* indicates that South Australia is below the national average for incidents, collisions and fatalities at level crossings (Figure 17 and 18).

On average, there are 38 collisions and four lives lost at level crossings across Australia each year (Figure 17). By comparison, South Australia has an average of six collisions and one life lost at level crossings each year for the same time period.

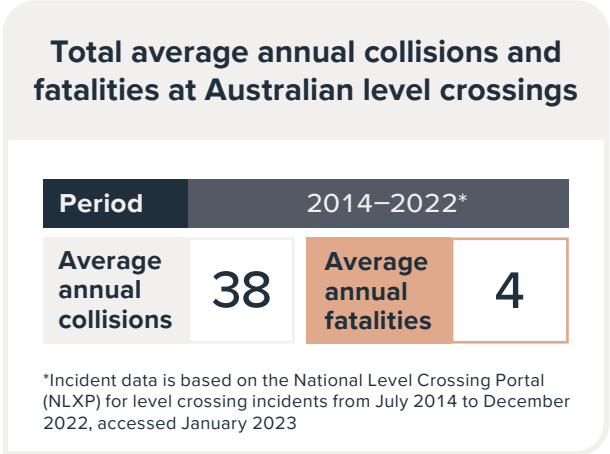


Figure 17. Total average annual collisions and fatalities at Australian level crossings, *National Level Crossing Safety Strategy 2023-2032*

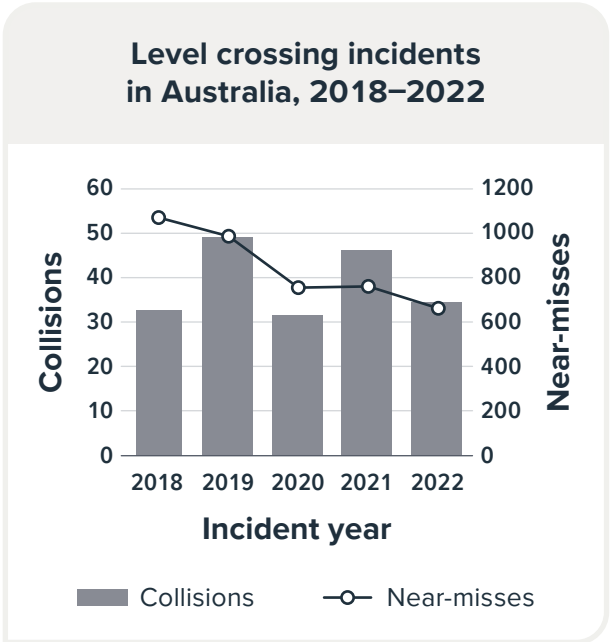


Figure 18. Level crossing incidents in Australia 2018–2022, *National Level Crossing Safety Strategy 2023-2032*



Adelaide Metropolitan Passenger Rail and Tram Networks

A range of factors may impact a motorist’s ability to follow the road rules and make safe decisions. Unsafe behaviours or errors may increase in metropolitan areas when motorists are presented with higher road or rail traffic volumes, traffic congestion and level crossing closures, especially in peak periods or when they are not familiar with a particular level crossing⁶.

The Outer Harbor, Gawler Central and Seaford lines have the highest number of level crossings, all controlled by flashing lights and boom gates, the highest number of stations, and the highest number of daily trains. Between 2019-2023, these lines recorded a higher number of incidents than other metropolitan lines (Figure 19).

The Department will use this incident data to identify trends, common behaviours preceding the incident and the level crossing environment in which they occurred to assist in identifying controls or treatments towards managing any safety risks that are identified.

The Glenelg tram line sees more movements than the passenger rail network, however, due to the shared road space, within the Adelaide CBD, and ability for a tram to stop within its full length, there are different risks which are captured in broader tram safety messaging. The incidents included for the Glenelg tram line correspond to level crossing locations that have safety controls that are found at level crossings across the whole passenger network and experience similar interactions with motorists and pedestrians.

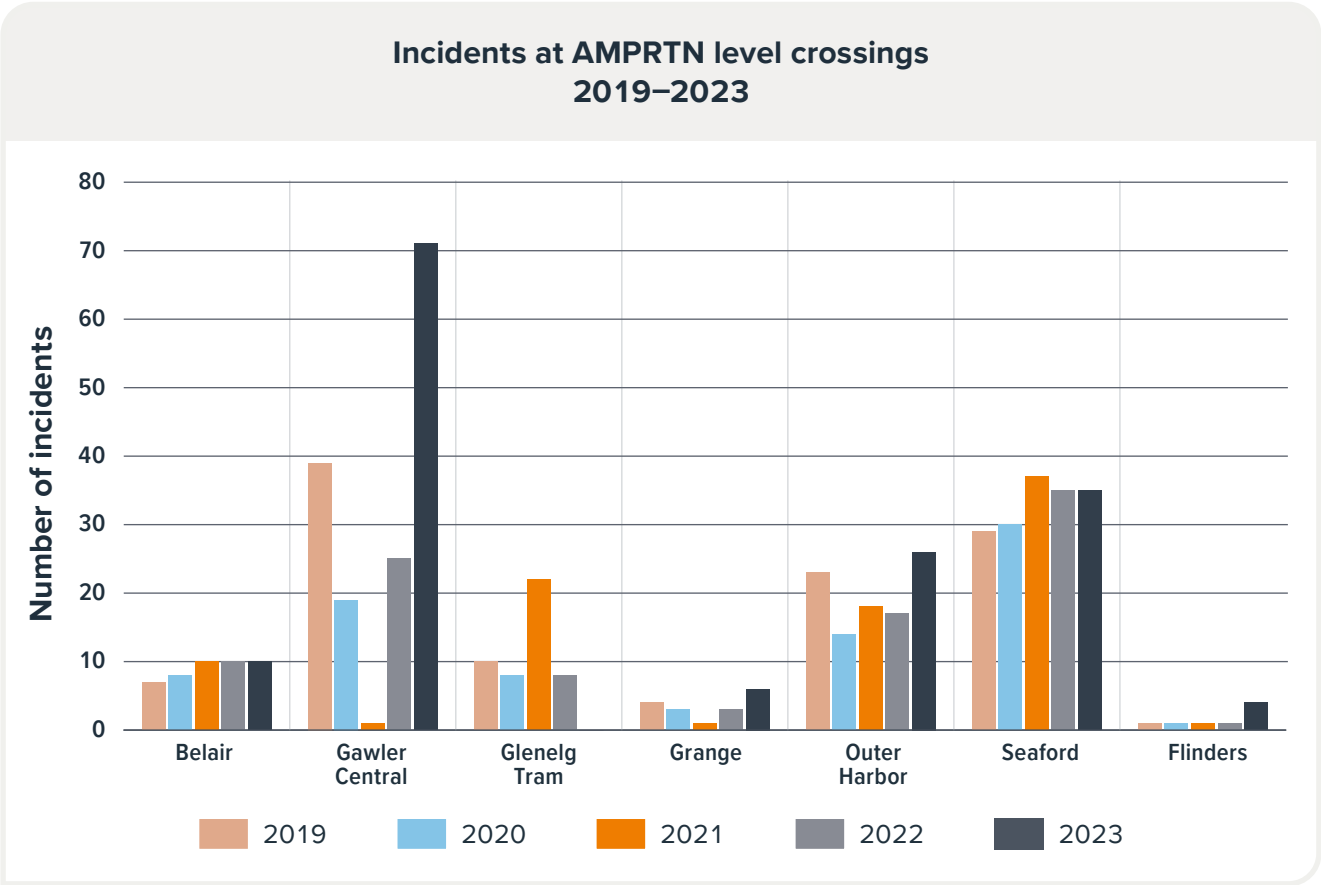


Figure 19. Incidents at Australian Metropolitan Passenger Rail and Tram Network level crossings 2019–2023

Freight rail network

The regional transport network provides more opportunities for trains and road vehicles to operate at higher speeds, and for larger high productivity freight vehicles to operate near to each other. Freight trains are much longer and heavier than urban passenger trains and take a long time to slow down or stop.

Across regional South Australia, there is also a higher number of passive level crossings.

The Adelaide to Port Augusta (315 km line length) and Adelaide to Wolseley (313 km line length) lines have the highest number of road level crossings and number of daily trains. Between 2019-2023, these lines recorded a higher number of incidents when compared to other freight lines (Figure 20).

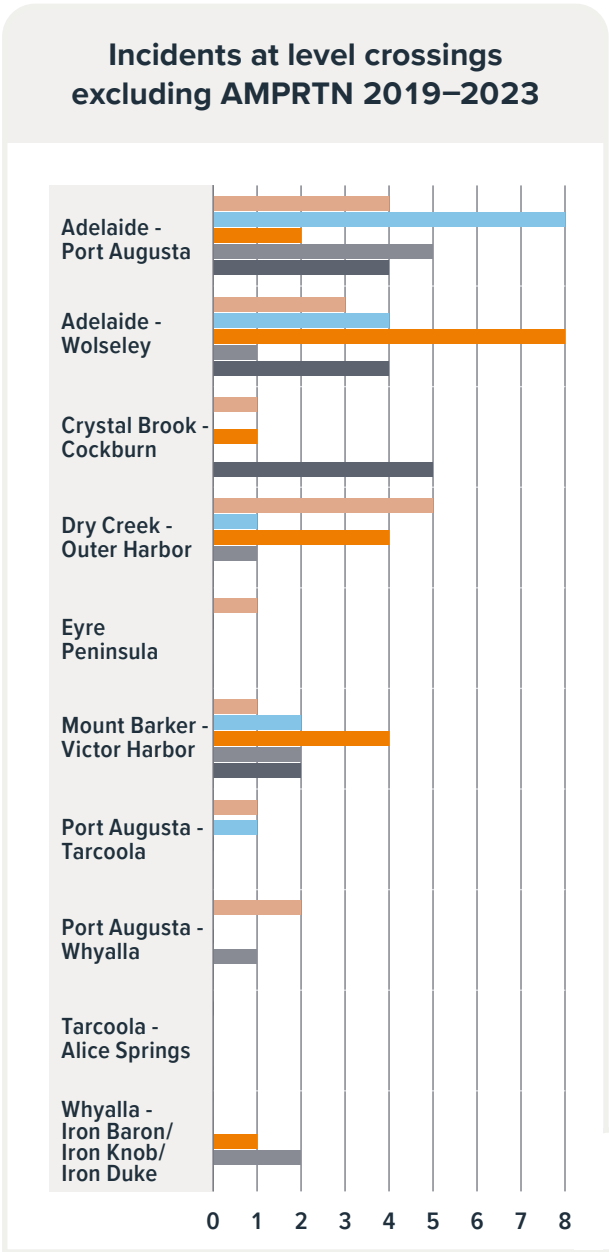


Figure 20. Incidents at level crossings excluding AMPRTN 2019–2023

With the exception of the Mount Barker to Victor Harbor heritage line, the number of pedestrian level crossings in regional locations is generally very low.

While incidents across the Adelaide Metropolitan Passenger Rail Network involve motorists and pedestrians, most incidents outside of this network primarily involve motorists.

Since 2012, the number of road vehicle incidents at level crossings has decreased. The Department is reviewing trends, line sections and locations to understand the factors behind this. Over the past 10 years, the number of pedestrian incidents has trended upwards (Figure 21).

More research is underway to understand pedestrian behaviour at level crossings, specifically pedestrian distraction by mobile devices and headsets, which has become more prevalent as the use of smartphones becomes more widespread in everyday life.⁷

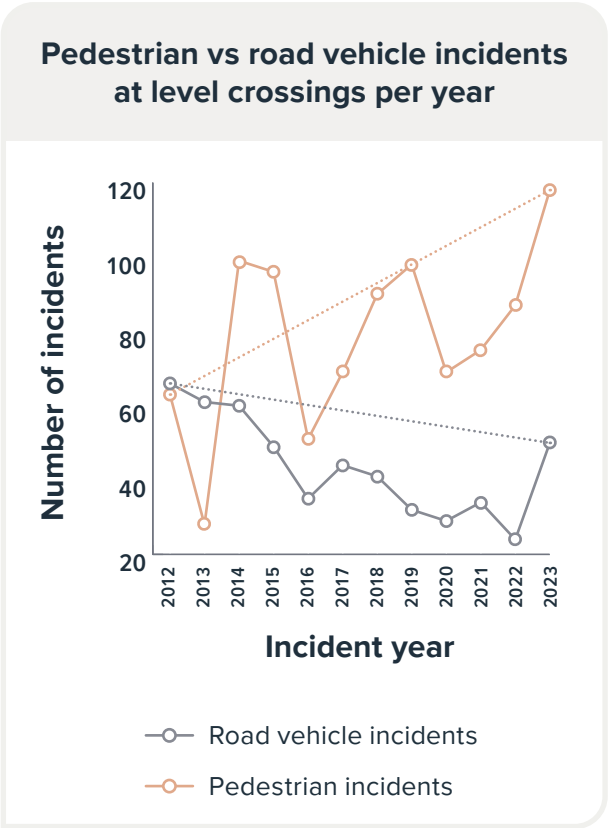


Figure 21. Pedestrian vs. road vehicle at level crossings per year

Factors contributing to risks

Incidents at level crossings present an ongoing challenge for both road and rail authorities. Human factors, such as failing to observe a train and/or failing to follow the level crossing safety controls, have been identified as the primary contributors to level crossing collisions.

While unsafe decision making can be the result of a motorist's or pedestrian's inability to safely judge train speed and distance, and a lack of understanding or awareness of expectations and social norms, the factors that influence a level crossing user's decision are still not well understood.⁸

As more research becomes available to try and understand these factors, a common theme that has emerged is that this is a very complex issue, and a systems thinking approach may be needed to improve behaviour and safety at level crossings⁹.

In addition, impacts from the Covid-19 pandemic which changed how people live, work and commute are also being reviewed so there is a greater understanding of travel behaviours and safety around level crossings.

Passive versus active

A common public perception is that active level crossings are safer than passive level crossings because they let motorists and pedestrians know when a train is approaching. However, active level crossings are still over-represented in incident data (Figure 22).



SA level crossing incidents by control type

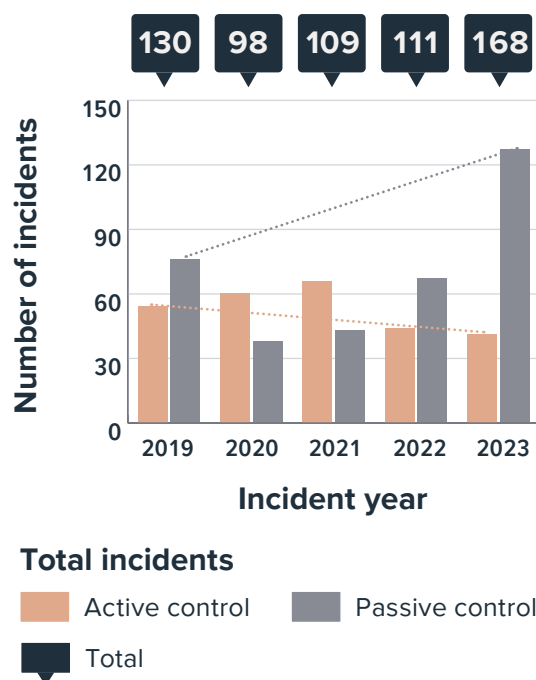


Figure 22. SA level crossing incidents by safety control types 2019-2023

As there are a lower number of active level crossings in South Australia, the majority of which are on the busier Adelaide Metropolitan Passenger Rail and Tram Network, when compared to the number of incidents reported for the safety control type, there is a greater chance that an incident is likely to occur at an active road level crossing compared to a passive road level crossing.

For pedestrians, there is a greater chance that an incident will occur at a passive pedestrian level crossing compared to an active or adjacent to active safety controlled pedestrian level crossing.

Studies into compliant and non-compliant decision making at level crossings indicate that if safety was the most important goal for the level crossing user, then there was a higher level of compliant decision making. If efficiency was the most important goal, then there was a high level of non-compliant decision making.

While road users and pedestrians cited flashing lights and ringing bells as the most important alert, this was also a cue for motorists with non-compliant decision making to proceed illegally through the level crossing. If pedestrians with non-compliant decision making could see a train and see the distance from the crossing, it would inform their decision on whether they could make it across¹⁰.



Strategic focus areas

1

Education and enforcement

2

Assets, technology and innovation

3

Data and analysis

4

Coordination and collaboration

STRATEGIC FOCUS AREA 1

Education and enforcement

Unsafe behaviours undertaken at level crossings have the potential to cause serious incidents or collisions between trains, trams, pedestrians and motorists.

Risks can vary depending on the frequency of rail services, road and train speeds and types of trains and road users, including pedestrians.

Incidents at actively controlled level crossings highlight that user behaviour is a key issue. Improving awareness and understanding of risks at level crossings and the importance of following the road rules is critical to improving safety.

Targeted education and enforcement programs and campaigns can be used to influence and drive behavioural change.

Key strategies to support and enforce positive change in level crossing user behaviour and reduce risk at level crossings include:

- 1 Improve how we inform and educate the community about level crossing safety through state and national level crossing safety campaigns.
- 2 Coordinate enforcement and education campaigns to improve and maintain public understanding of level crossing risks.

- 3 Investigate incorporating level crossing safety messages into school education packages.
- 4 Use incidents on the rail and tram networks and the impact on train/tram crews, responders and the community as an education opportunity.
- 5 Explore measures to improve level crossing information for driver education and motorist licence testing.
- 6 Explore measures to increase heavy vehicle driver awareness and information of risks at level crossings.
- 7 Contribute and support the development and implementation of the South Australian Suicide Prevention Plan to address self-harm incidents on the rail network.
- 8 Continue to support and participate in Rail Safety Week.



STRATEGIC FOCUS AREA 2

Assets, technology and innovation

While the types and range of technologies to improve safety at level crossings has increased progressively over the years, the adoption of these technologies remains relatively low.

Level crossing safety is a national priority and there is a national focus for road and rail authorities to investigate and implement low-cost, high impact infrastructure solutions.

Key strategies to improve and identify safety controls, emerging technology and innovations that present opportunities to cost-effectively improve level crossing safety include:

- 1 Develop systems and processes to identify risk taking activity by road users to inform mitigations.
- 2 Continued focus on level crossing safety improvement programs.
- 3 Interface Managers to review and document risk profile of level crossings utilised by heavy vehicles.
- 4 Investigate the use of new and innovative technology to reduce risk, particularly in relation to heavy vehicles.
- 5 Develop investment program focusing on high risk crossings.

- 6 Work with rail authorities on identifying private/occupational level crossings for inclusion on the Level Crossing Management System.
- 7 Investigate potential for Cooperative Intelligent Transport System technology applications to improve level crossing safety.

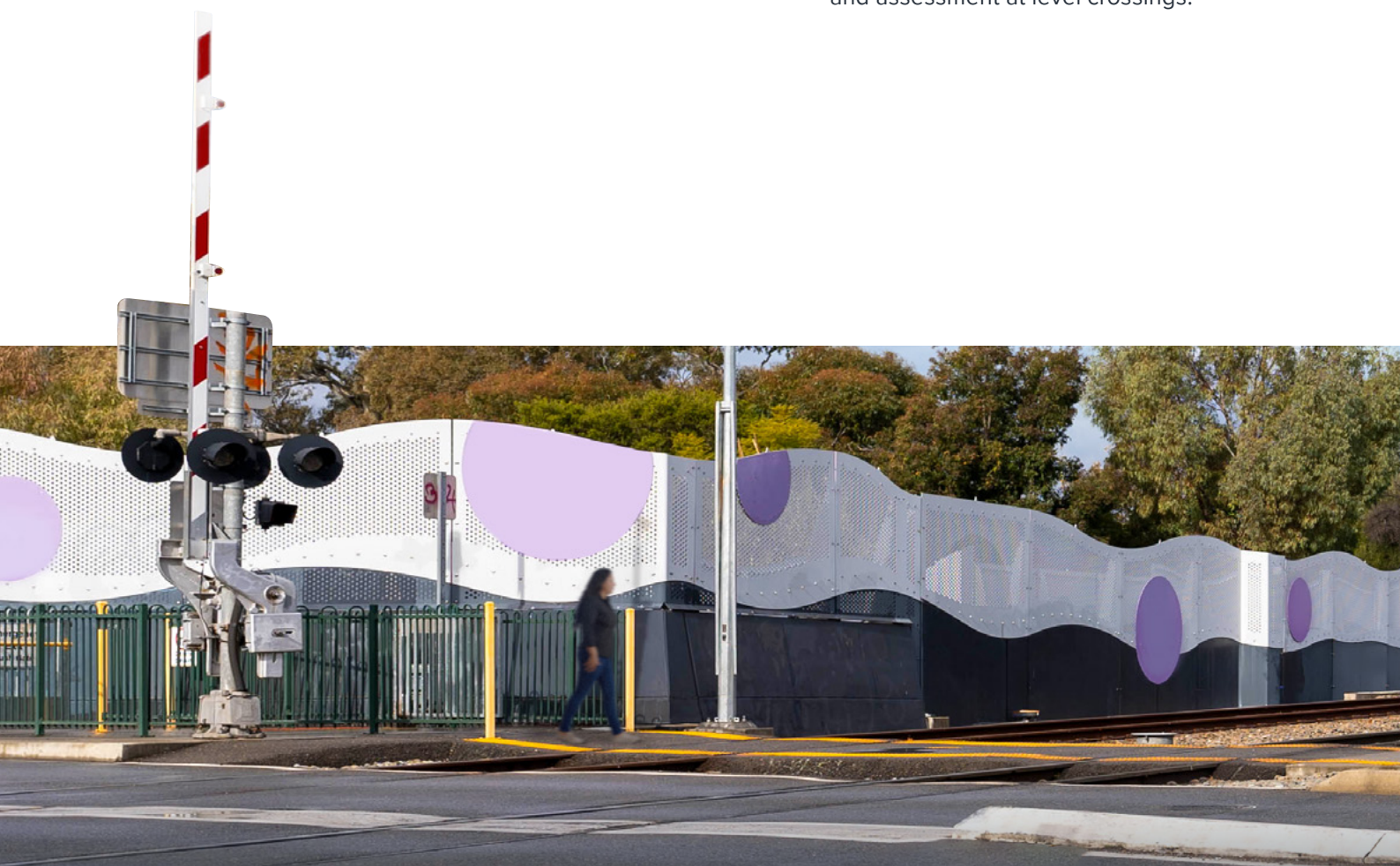
Information is only as good as the data that supports it.

The ability to identify risks and trends at level crossings, manage level crossing assets, identify initiatives to manage risk and the ability to monitor, evaluate and review the effectiveness of this Strategy depends on reliable, consistent and available data.

Better data is also needed to understand why incidents continue to occur at level crossings, to enable more targeted evidence-based interventions and measure the effectiveness of those treatments.

Key strategies to improve the reliability, consistency and availability of level crossing data and incident reporting include:

- 1 Research and analysis of level crossing user behaviour to better understand current level crossing user safety issues, behaviour and human factors.
- 2 Work with key agencies and organisations to identify level crossings with poor user behaviour.
- 3 Investigate opportunities to improve the quality, consistency and availability of level crossing data including incident data.
- 4 Work with the road freight industry to investigate opportunities to use technology based solutions to improve heavy vehicle safety at level crossings.
- 5 Support continued use and continuous improvement to the Australian Level Crossing Assessment Model (ALCAM) risk assessment tool.
- 6 Promote stakeholder organisation uptake and use of ALCAM for risk identification and assessment at level crossings.



Coordination and collaboration

Achieving zero harm at South Australia's level crossings by 2050 requires a coordinated, integrated and aligned level crossing safety strategy, in collaboration with industry and other key stakeholders advocating for level crossing safety.

The coordination and collaboration focus area brings together and supports the other three focus areas of this Strategy – Education and Enforcement, Assets, Technology and Innovation, and Data and Analysis – to collectively drive actions to reduce incidents at level crossings.

Greater benefits can be achieved by sharing successful policies, research or evaluation of trials underway and through consistent messaging and enforcement. Shared responsibility underpins level crossing safety, and is the foundation of the Safe System approach and level crossing safety interface agreements.

Improvements to level crossing safety requires collaborative involvement by all parties and is the first step towards realising zero harm at South Australian level crossings by 2050. Given the large number of stakeholders involved, buy-in is required across all levels.

Key strategies to increase and support opportunities for collaboration to improve knowledge sharing, risk identification and management, alignment, integration, and coordination between stakeholders include:

- 1 Develop funding opportunities for data collection, research and level crossing safety improvements.
- 2 Support the development of interface agreements consistent with the Rail Safety National Law.
- 3 Improve coordination between road managers, rail infrastructure managers and the National Heavy Vehicle Regulator.
- 4 Work with rail authorities on a state standard for private level crossings.
- 5 Identify and implement measures to address risks on heavy vehicle routes.
- 6 Support opportunities for collaboration.
- 7 Work with Australian and State Governments to maintain continued investment in level crossing safety programs.



Implementation

It is important that the Strategy is responsive to changes around safety and risk trends. To achieve this, initiatives identified under the Strategy will be delivered through a rolling three-year action plan.

The Action Plan, which will be updated annually, will set out the actions to be taken to deliver priorities, as well as responsibilities and timeframes for implementation. Collaboration and support by all involved parties is essential for the success of the Strategy.

Regular reviews and reporting of the Action Plan will be important to ensure that any changes or impacts to road and rail networks, as well as changing priorities and trends are effectively managed.

Accountability

Rail authorities, road authorities, government agencies, private organisations and level crossing users all have a role to play when it comes to level crossing safety. It's a shared responsibility.

Delivery of this Strategy will require a collaborative and coordinated effort. The Department will oversee the implementation of the Strategy in consultation with SALCAC, who will monitor and review the outcomes of the Strategy.



Evaluation

The Strategy will be monitored and reviewed by SALCAC and updates reported to the Department.

Performance indicators for the Strategy will include:

- outcome indicators including reduction in lives lost, serious injuries and near-misses
- strategies employed made an improvement in safety at level crossings and in level crossing user behaviour
- actions resulting from this Strategy are effective in improving safety at level crossings
- measures to identify gaps or areas needing refinement
- quarterly reporting by SALCAC.



References

- *South Australia's Road Safety Strategy to 2031*
- *National Level Crossing Safety Strategy 2023–2032*
- *Heavy Vehicle Safety Strategy 2021–2025*
- National Level Crossing Portal, Office of the National Rail Safety Regulator

-
1. Metropolitan Adelaide definition - *Metropolitan Adelaide*
(https://www.dit.sa.gov.au/__data/assets/pdf_file/0018/5184/8_METROPOLITAN_ADELAIDE_70-87.pdf)
 2. Salmon, P., Lenne, M., Beanland, V. et al. (2014). *From the Bush to the Burbs: a comparison of driver situation awareness at rural and urban railway level crossings*. Australasian Road Safety Research, Policing & Education Conference Melbourne, Australia, 2014.
 3. *Rail Safety National Law (South Australia) Act 2012*
([https://www.legislation.sa.gov.au/_/legislation/lz/c/a/rail%20safety%20national%20law%20\(south%20australia\)%20act%202012/current/2012.14.auth.pdf](https://www.legislation.sa.gov.au/_/legislation/lz/c/a/rail%20safety%20national%20law%20(south%20australia)%20act%202012/current/2012.14.auth.pdf))
 4. Notifiable Occurrence Reporting Requirements
(<https://nraspricms01.blob.core.windows.net/assets/documents/Guideline/Guideline-Notifiable-Occurrence-Reporting-Requirements-updated-Oct-2022.pdf>)
 5. National Level Crossing Portal, ONRSR
 6. Larue, G.S., Blackman, R., Freeman, J. (2019). *Impact of waiting times on risky driver behaviour at railway level crossings*. Transport Ergonomics and Human Factors.
 7. Larue, G.S., Watling, C., Black, A., Wood, J. (2021). *Improving the safety of distracted pedestrians with in-ground flashing lights. A railway crossing field study*. Journal of Safety Research, 77, pp. 170-181.
 8. Mulvihill, C.M., Salmon, P.M., Lenne, M.G., Beanland, V.C., Stanton, N.A. (2014). *An exploratory comparison of compliant and non-compliant decision making at actively controlled rail level crossings using the decision ladder*. Australasian Road Safety Research, Policing & Education Conference Melbourne, Australia, 2014.
 9. Salmon, P.M., Lenne, M.G., Read, G.J.M., et al. (2015). *Beyond the crossing: a cognitive work analysis of rail level crossing systems*. Applied Human Factors and Ergonomics.
 10. Mulvihill, C.M., Salmon, P.M., Lenne, M.G., Beanland, V.C., Stanton, N.A. (2014). *An exploratory comparison of compliant and non-compliant decision making at actively controlled rail level crossings using the decision ladder*. Australasian Road Safety Research, Policing & Education Conference Melbourne, Australia, 2014.
-



RAIL
CROSSING
WAY

STOP
ON RED
SIGNAL

Thank you

We are grateful to our partners on the South Australian Level Crossing Advisory Committee for their valuable contributions to this strategy. Their collaboration has been crucial for our success. We appreciate their ongoing support and look forward to our continued partnership.



Local Government Association
of South Australia



SOUTH AUSTRALIA POLICE
KEEPING SA SAFE



Disclaimer

While every reasonable effort has been made to ensure that this document is correct at the time of publication, the Minister for Infrastructure and Transport, its agencies, instrumentalities, employees and contractors disclaim any and all liability to any person in respect to anything or the consequence of anything done or omitted to be done in reliance upon the whole or any part of this document.

More information

 dit.sa.gov.au

Published May 2025



Government of South Australia
Department for Infrastructure
and Transport

Build. Move. Connect.