

Austroads

Technical Report
AP-T386-25



**Best Practice Guidance in Road Safety
Management and Leadership**
Proven Initiatives and Case Study Examples

Prepared by

Soames Job, Blair Turner, Claire Campbell, Martin Small and Hafez Alavi

Project Manager

Claire Campbell

Abstract

This report provides guidance for jurisdictions in Australasia on road safety management to support improved road safety outcomes.

Road safety is delivered by many organisations and therefore management, coordination and leadership are critical.

The report summarises 10 components of effective road safety management and outlines proven road safety initiatives and practical examples of critical features of effective road safety management. Case studies are presented to demonstrate what can be achieved with step changes in road safety management, and how these were achieved. Each case study and proven road safety management initiative are designed as stand-alone examples to support jurisdictions in achieving zero road trauma by 2050.

Keywords

Road Safety Management; Leadership; Road Safety; Vision Zero; Accountability; Safe System approach.

ISBN 978-1-923617-00-1

Austroads Project No. SAG6507

Austroads Publication No. AP-T386-25

Publication date October 2025

Pages 66

Publisher

Austroads Ltd.
Level 9, 570 George Street
Sydney NSW 2000 Australia
Phone: +61 2 8265 3300
austroads@austroads.com.au
www.austroads.gov.au



About Austroads

Austroads is the association of Australasian transport agencies.

Austroads' purpose is to support our member organisations to deliver an improved Australasian road transport network. To succeed in this task, we undertake leading-edge road and transport research which underpins our input to policy development and published guidance on the design, construction and management of the road network and its associated infrastructure.

Austroads provides a collective approach that delivers value for money, encourages shared knowledge and drives consistency for road users.

Austroads is governed by a Board consisting of senior executive representatives from each of its 11 member organisations:

- Transport for NSW
- Department of Transport and Planning (Transport Victoria)
- Queensland Department of Transport and Main Roads
- Main Roads Western Australia
- Department for Infrastructure and Transport South Australia
- Department of State Growth Tasmania
- Department of Logistics and Infrastructure Northern Territory
- City and Environment Directorate, Australian Capital Territory
- Department of Infrastructure, Transport, Regional Development, Communications, Sport and the Arts
- Australian Local Government Association
- NZ Transport Agency Waka Kotahi.

© Austroads 2025 | This work is copyright. Apart from any use as permitted under the *Copyright Act 1968*, no part may be reproduced by any process without the prior written permission of Austroads.

This report has been prepared for Austroads as part of its work to promote improved Australian and New Zealand transport outcomes by providing expert technical input on road and road transport issues.

Individual road agencies will determine their response to this report following consideration of their legislative or administrative arrangements, available funding, as well as local circumstances and priorities.

Austroads believes this publication to be correct at the time of printing and does not accept responsibility for any consequences arising from the use of information herein. Readers should rely on their own skill and judgement to apply information to particular issues.

Summary

Effective road safety management requires a comprehensive and evidence-based approach that incorporates the latest research, best practices and leadership. Austroads project *Best Practice Guidance in Road Safety Management* aims to support Austroads member agencies to implement and improve road safety management functions and highlight case study examples of effective road safety management in practice.

This report is a key deliverable of Austroads *Best Practice Guidance in Road Safety Management* project and forms part of a broader Austroads program of work on road safety management and leadership. It outlines opportunities to improve road safety management that will support Austroads member agencies in implementing the Safe System approach and Vision Zero targets in an integrated way and with community and stakeholder acceptance.

Road Safety Management fosters greater accountability within government and other participants in the road transport system, and continuous improvement through regularly evaluating strategies, plans, and programs and adapting to emerging challenges. By coordinating efforts across various levels and responsibilities of government, business and the community, and consistently applying the Safe System approach, road safety management provides the driving force for creating a safe road transport system.

Improvements are needed to support the delivery of road safety interventions and achievement of agreed road safety targets. The report focuses on critical elements of road safety management, including accountability, governance, leadership, results focus, monitoring, safety performance indicators, and coordination which are essential for effective road safety delivery.

The report is structured in 2 key components:

1. The importance of road safety management – A high-level overview of road safety management outlining the importance, benefits, and an internationally recognised best practice framework to support road safety action.
2. Proven road safety management initiatives and case study examples – 10 initiatives that have been proven to support road safety action including the benefits these actions will deliver and implementation considerations to support their adoption. Case studies compliment the review of published evidence and articulate critical lessons in implementing road safety management initiatives in practice.

It is recognised that all jurisdictions will face challenges specific to their circumstances. These challenges include resourcing, funding, stakeholder support, regulatory frameworks and capacity to successfully manage road safety. Implementing these road safety management initiatives will require strong leadership, a critical analysis of road safety management approaches and the ability to adapt to changes in government and community expectations.

By improving road safety management, jurisdictions across Australia, New Zealand and internationally can effectively decrease road trauma and create safer, more sustainable transportation systems. A coordinated and strategic approach will be essential in reaching the goal of zero road deaths and serious injuries, making safety a core societal objective with widespread benefits.

Contents

| | |
|--|-----------|
| Summary | i |
| 1. Introduction | 1 |
| 1.1 Purpose | 1 |
| 1.2 Scope | 1 |
| 1.3 Methodology | 1 |
| 2. Road Safety Management | 3 |
| 2.1 Components of effective Road Safety Management | 3 |
| 2.2 The relationship between the Safe System approach and Road Safety Management | 5 |
| 2.3 Frameworks and principles of Road Safety Management | 5 |
| 2.4 Applying road safety management in practice | 7 |
| 3. Proven Road Safety Management Initiatives and Supporting Case Studies | 13 |
| 3.1 Proven initiative 1: A lead agency for road safety | 13 |
| 3.2 Proven initiative 2: Adoption of Vision Zero by 2050 and the importance of interim targets | 18 |
| 3.3 Proven initiative 3: Fostering greater community acceptance of road safety | 23 |
| 3.4 Proven initiative 4: The importance of governance, coordination and co-benefits | 28 |
| 3.5 Proven initiative 5: Responsibility, accountability, and political leadership to drive road safety performance | 32 |
| 3.6 Proven initiative 6: Road Safety Management role in policy implementation and evaluation | 40 |
| 3.7 Proven initiative 7: Supporting local government to deliver improved road safety outcomes | 45 |
| 3.8 Proven initiative 8: Evidence based road safety strategies and action plans | 48 |
| 3.9 Proven initiative 9: Resource allocation and funding | 52 |
| 3.10 Proven initiative 10: Road safety is managed by both private and public sector organisations | 55 |
| 4. Conclusion | 60 |
| References | 61 |

Tables

| | | |
|-------------|--|----|
| Table 2.1: | Road Safety Management process, core requirements and case study examples | 8 |
| Table 3.1: | A lead agency for road safety – key characteristics of the initiative | 16 |
| Table 3.2: | Vision Zero target – Key characteristics of the initiative | 20 |
| Table 3.3: | Fostering greater community acceptance of road safety – Key characteristics of the initiative | 25 |
| Table 3.4: | The importance of governance, coordination and co-benefits – Key characteristics of the initiative | 30 |
| Table 3.5: | Responsibility and accountability to drive road safety performance – Key characteristics of the initiative | 33 |
| Table 3.6: | Political leadership, default urban speed limit reduction in Wales – Key characteristics of the initiative | 37 |
| Table 3.7: | Road safety management role in policy implementation – Key characteristics of the initiative | 41 |
| Table 3.8: | Monitoring, analysis and evaluation – Key characteristics of the initiative | 44 |
| Table 3.9: | Bundaberg Regional Council – Key characteristics of the initiative | 47 |
| Table 3.10: | Evidence-based strategies and action plans – Key characteristics of the initiative | 50 |
| Table 3.11: | Resource allocation and funding – Key characteristics of the initiative | 54 |
| Table 3.12: | The role of the private sector, business and industry – Key characteristics of the initiative | 58 |

Figures

| | | |
|--------------|--|----|
| Figure 2.1: | Road Safety Management framework | 6 |
| Figure 2.2: | The Planning for Zero Framework safety management system | 7 |
| Figure 3.1: | Recent trends in the number of road fatalities, Ireland | 17 |
| Figure 3.2: | Current structure of RSA | 18 |
| Figure 3.3: | Global Road Safety Performance Targets for 2020, as agreed by the World Health Assembly | 21 |
| Figure 3.4: | Indicators and targets in Norway, adopted as part of a results-based framework | 22 |
| Figure 3.5: | Key design steps for SUMP | 31 |
| Figure 3.6: | Progress towards road safety targets in Sweden | 35 |
| Figure 3.7: | Three step review process in Sweden | 36 |
| Figure 3.8: | Reductions in road fatalities and injuries despite increased road travel in Sweden, 2000 to 2020 | 36 |
| Figure 3.9: | Monitoring of indicators, New Zealand | 37 |
| Figure 3.10: | Speed limit change material, Wales | 39 |
| Figure 3.11: | Australian GLS Policy Framework | 43 |
| Figure 3.12: | Fatality crash rate per 10,000 learner and provisional licence holders, 2000-2023 | 44 |
| Figure 3.13: | Sample Network Safety Plan, Bundaberg Regional Council | 48 |
| Figure 3.14: | Level of support for different initiatives, NSW | 51 |
| Figure 3.15: | NSW Road Safety Plan, 2021 | 52 |

1. Introduction

1.1 Purpose

This report is a deliverable for Workstream 2 of Austroads' *Best Practice Guidance in Road Safety Management* project (SAG6507). It is intended to assist with improving road safety management and provide case study examples that demonstrate how effective road safety management has driven the production of improved road safety outcomes.

This report has been prepared to help respond to the significant road trauma issues faced by Austroads members and their communities. It focuses on essential elements of road safety management and leadership, which together provide direction to the delivery of road safety interventions and achievement of results. The report focuses on accountability, governance, leadership and management systems which are essential to developing and implementing safety interventions and delivering the safety results sought by the community.

1.2 Scope

The scope of Workstream 2 in Austroads *Best Practice Guidance in Road Safety Management* project focuses on the development of proven road safety management initiatives for New Zealand, Australian states and territories and key delivery partners who play a significant role in enabling and delivering road safety action. This work builds on the findings of Workstream 1, providing a review of the literature, current institutional management arrangements and interviews with a range of critical stakeholders. A summary of Workstream 1 findings are outlined in Section 2 of the report.

1.3 Methodology

To identify proven road safety initiatives (Section 3), an initial scan was undertaken to identify components of activity which are incorporated in road safety management and leadership, from literature and author experience. This was based on many sources, particularly including Bliss and Breen (2013), Asian Development Bank (2023), and the Workstream 1 literature review (summarised in Section 2 of this report).

From the identified components, an initial set was chosen based on the judgements that:

1. current practice is not optimal in Australia, New Zealand, and broadly for many countries
2. significant improvement is possible
3. such improvement is feasible.

Initiatives were briefly described and shared in consultations with Austroads, the project team, and with the project control group for the project. Detailed drafting was undertaken, in part based on broader literature and successful practice, and this was used in consultation with the PCG and in workshops dedicated to this purpose. The proven initiatives were revised based on feedback.

A standard format is used for each proven initiative. A brief description is provided at the start of each initiative. This is followed by benefits for this initiative, a core description of what is required for the initiative to be delivered followed by considerations that will support implementation (noting the interdependence of many aspects of road safety management). References are provided in the References section of the report.

For the case studies, given the different road safety management components and the large number of good practice examples from around the world, a selective approach was taken to the identification of examples. Key topic areas were selected based on the World Bank Road Safety Management Guide (Bliss and Breen 2009, 2013), and the literature review topics identified through Workstream 1. An initial list of topics was prepared, identifying the key lesson(s) from each of these. Specific case study examples were identified to illustrate the key points identified for each theme. A mixture of Australian, New Zealand and international examples was sought. This initial list was reviewed by the Austroads' project control group, and a final list of topics and accompanying case studies selected.

Information for each case study was gathered based on published materials and in some cases, interviews. A standard format was used for each case study. The key learning is provided at the start of each case study, followed by details of the jurisdictions from where the examples are drawn, the Safe System pillars involved, and the road safety management aspects covered. Each case study then outlines the key issues or problem that is addressed, followed by details of the initiatives undertaken, including the stakeholders involved and outcomes the actions achieved. Case studies have been linked to the most relevant proven road safety management initiatives in Section 3. In some case studies where several elements have been identified they are listed in the table to allow cross-referencing with other initiatives in the report. Key references are provided in the References section of the report.

2. Road Safety Management

This section covers the combination of functions, systems and processes of road safety management that are designed to significantly reduce road deaths and serious injuries. Road safety management is a systematic and comprehensive approach, focusing on results (whether of a strategic, performance or delivery nature) which drive the development and implementation of effective injury prevention strategies.

Road safety management fosters greater accountability within government and other participants in the road transport system, and continuous improvement through regularly evaluating strategies, plans, and programs and adapting to emerging challenges. By coordinating efforts across various levels and responsibilities of government, business and the community, and consistently applying well tested safety principles, road safety management provides the driving force for creating a safe road transport system.

2.1 Components of effective Road Safety Management

Ten components of effective road safety management were identified through the systematic review in Workstream 1.

1. Focus on outcomes and continuous improvement

Best practice requires setting ambitious and achievable safety targets, developing strategies that support achievement of those targets, and implementing systems to track and report on progress. This ensures that road safety activity is focused on reducing road trauma and strategies are evaluated and adapted to address evolving challenges.

2. Accountability and governance

Effective road safety management requires a well-structured governance framework that prioritises outlines clear roles and responsibilities and evidence-based road safety initiatives. Achieving this depends on strong accountability, sustained commitment, and effective coordination among all relevant agencies including non-transport sectors such as health, planning, local government, and police under the leadership of a central agency with the authority to drive reform and oversee implementation.

3. Engagement, collaboration and organisational culture

Best practice requires engaging and collaborating with a wide range of stakeholders, cultivating a strong results-oriented safety culture within key organisations, promoting awareness about the scale and nature of road trauma, and fostering a shared sense of responsibility amongst those with the ability to affect change.

A lead agency for road safety must have the ability to influence others across the system to ensure coordinated and sustained action. This includes engaging senior decision makers, aligning efforts across transport and non-transport sectors, and building support for evidence-based policies. By effectively influencing stakeholders such as local government, health and police departments, and the wider community the lead agency can drive the collective effort needed to improve road safety outcomes.

4. Strengthening legislative frameworks

Best practice requires regular strategic review of legal requirements and related compliance regimes to ensure clear accountability for road safety (governance, road safety management systems etc), effective design and delivery of interventions (infrastructure safety, speed compliance etc), and evaluation for future improvement.

5. Principle, evidence and data-driven action

Best practice requires applying safety principles, transforming knowledge into practice, and consistently gathering and using data to make decisions, evaluate results, and guide continuous improvement. This ensures that road safety strategies are evidence-based, targeted, and responsive to emerging trends.

6. Risk assessment and mitigation

Best practice requires identifying and assessing road safety risks, then designing effective interventions and prioritising available resources, using tools and processes like back casting, proactive risk assessment (e.g. road safety audits and infrastructure star rating) and crash data analysis.

7. Sustained funding and resource allocation

Best practice requires ensuring adequate and sustained funding is available for delivery of road safety strategies and programs, is allocated efficiently, and managed to best effect by all delivery partners.

8. Monitoring, evaluation and reporting

Best practice requires monitoring and evaluating road safety interventions is critical for ensuring that results are being achieved, resources are being used effectively, and lessons are being learned.

9. Understanding interdependencies and interactions

Best practice requires analysing the interactions between key elements of the road transport system, identifying potential points of failure as well as co-benefits, and developing strategies that address the system as a whole.

10. Safe System implementation and integration

Best practice requires adopting the Safe System approach to develop, implement and improve a multi-faceted approach that integrates all the elements above. It provides a powerful tool for creating a safer road environment for all users.

2.2 The relationship between the Safe System approach and Road Safety Management

The Safe System approach has been adopted as the guiding vision for delivering road safety in Australia and New Zealand as well as many other countries (Austroads 2021a). The well-proven Safe System approach identifies that deaths and serious injuries are not an acceptable byproduct of transport, drawing from 'Vision Zero' principles first established in Sweden. The objective of a Safe System is to create a safe transport system that recognises that road users as humans make mistakes and are physically vulnerable, and so a system is required where mistakes do not result in death or serious injury. Everyone has a role in the Safe System approach, especially road managers, planners, engineers and vehicle manufacturers.

The implementation of Safe System approach requires certain pillars that must be improved, and which work together to ensure safe outcomes. These pillars are:

- safe speed
- safe roads
- safe vehicles
- safe people
- effective post-crash care.

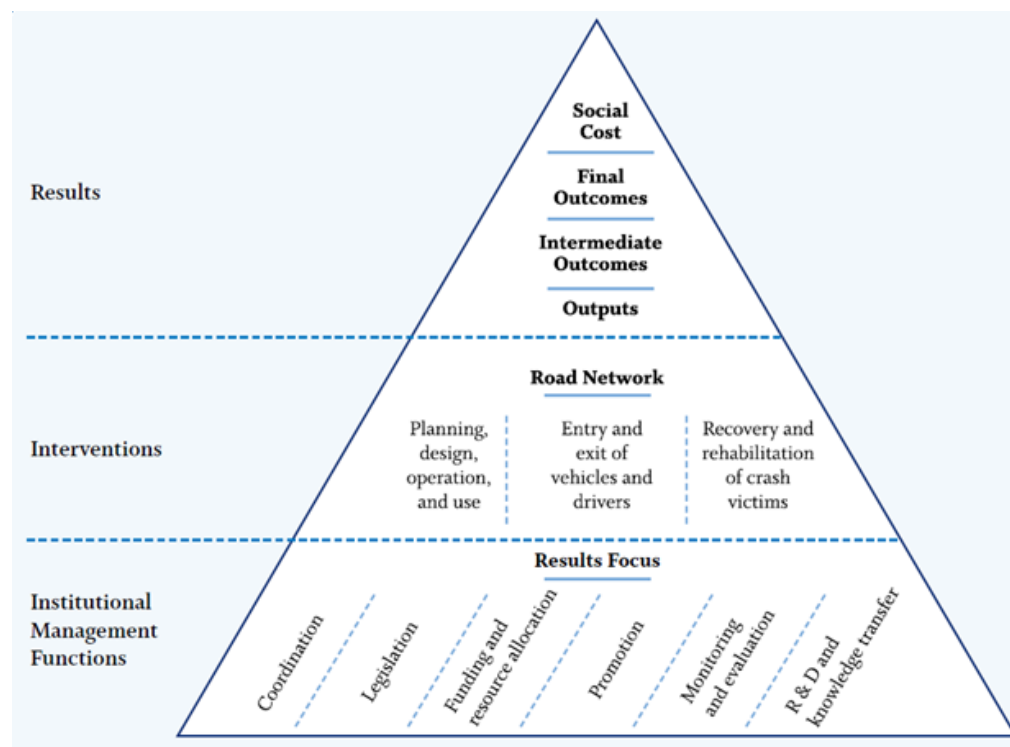
If these pillars exist and are properly implemented, even if one part of the system fails (such as a driver making a mistake), then road users will still be protected thereby avoiding death or serious injury.

Road Safety Management is intrinsic to the delivery of the Safe System approach, as this is required to coordinate all elements of road safety to reach required outcomes. The relationship between the Safe System approach and road safety management is crucial for achieving road safety outcomes. While the Safe System approach provides the guiding principles, road safety management offers the framework and processes to implement these principles effectively.

2.3 Frameworks and principles of Road Safety Management

The single most influential road safety management framework globally is that produced by the Global Road Safety Facility (see Figure 2.1), which drew inspiration from best of European practice in Sweden, the United Kingdom and the Netherlands.

Figure 2.1: Road Safety Management framework



Source: Bliss and Breen (2013).

The model establishes 7 institutional management functions, but none are sufficient on their own to achieve sustained success. No one part of the model succeeds independently of the other in the pursuit of results. That said, the 'results focus' function drives all other considerations towards one goal – how to achieve the best road safety results.

The enduring power of the model lies in its focus on management functions, systems and processes. When so much daily focus is on delivery of interventions, or high-profile negative results, the model 'opens up the discussion to the important and often neglected issues of institutional ownership and accountability for results.' (Bliss and Breen 2009; 2013).

The intervention in Figure 2.1 called 'Entry and exit of vehicles and drivers' warrants clarification. This does not refer to entry and exit points on the road, but rather to the regulations, policies, and practices which determine whether or not a vehicle or a driver is allowed on the road system. Thus, it includes vehicle standards, inspections and registration processes, as well as licensing requirements and penalties which may suspend a driver or vehicle from accessing the road for a set period of time or permanently.

The key elements of this road safety management framework have been used throughout this document, but adapted with recent research, including that identified through this project.

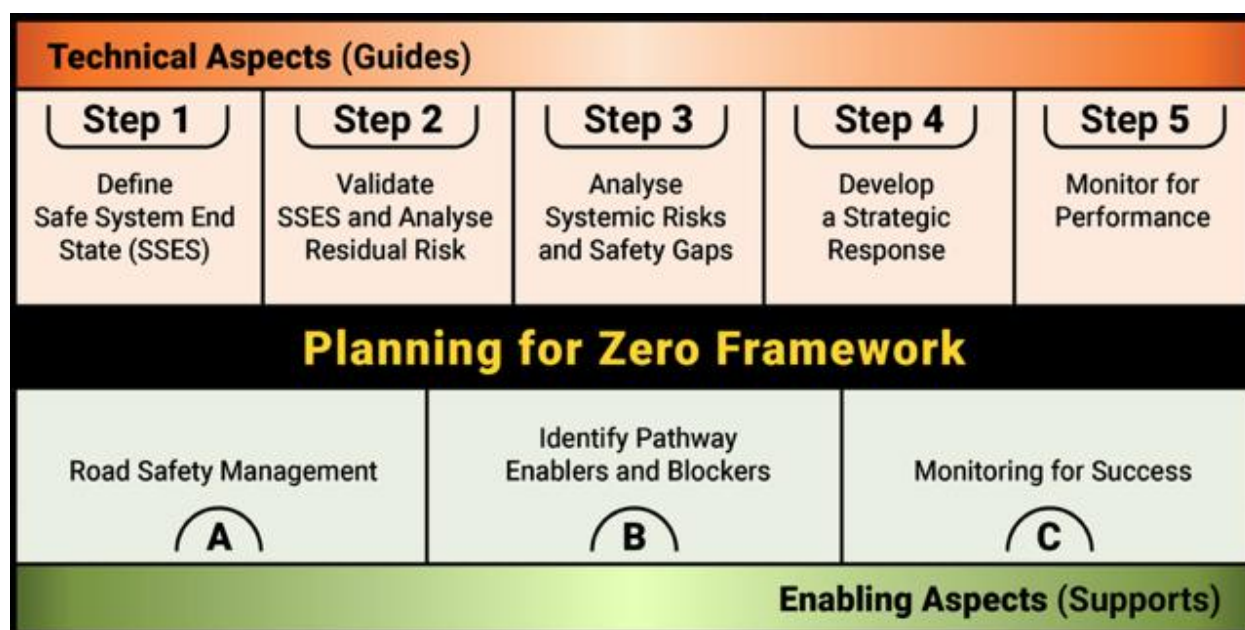
Various developments that have occurred in recent years that are not explicitly covered in this road safety management framework can still be incorporated. For example:

- New safety technologies in vehicles may be mandated in requirements for the *entry of vehicles* (standards for manufacture or importation).
- New road design technologies and standards are covered under 'design' in *Planning, design, operation, and use*.
- New enforcement technologies are covered in 'use.'

2.4 Applying road safety management in practice

A vital aspect of road safety management involves specifying and setting targets for the final outcomes being sought, the safety performance indicators which are critical to achieving those final outcomes, and the deliverables required to significantly improve the safety performance indicators. This area of quantitative analysis has major impacts for many aspects of road safety management and is being addressed in a separate Austroads project SAG6365 *Charting a path to eliminating road death and serious injury*. The key output will be a Planning for Zero Framework (PfZF) which provides a comprehensive methodology to help jurisdictions define, validate, and implement Safe System End States while ensuring continuous performance monitoring. With the support of enabling aspects, the technical aspects guide jurisdictions through a five-step process – from defining Safe System End States, to analysing systemic risks, developing a strategic response, and monitoring performance – ensuring an evidence-based approach to eliminating road trauma (see Figure 2.2).

Figure 2.2: The Planning for Zero Framework safety management system



There is no single right way to approach road safety management. However, there is a range of actions that Austroads members can consider across the institutional management functions to support effective and improved road safety management.

A particular challenge identified during this project has been how to practically apply road safety management disciplines. Taking the essential idea of institutional management functions producing interventions which in turn produce results, Table 2.1 describes some important management processes and how they relate to design of interventions and evaluation of system performance.

The table responds to the following questions:

- Function: What institutional functions do road safety agencies and key partners need to retain capability in, and what are some critical elements?
- Management process: What are proven initiatives that can be put in place for this function to be effective over an extended period?
- Core requirements: What are core requirements that help conceive and design the road transport system and high impact safety interventions?

The case study examples demonstrate how the initiative has been successfully implemented and what outcomes were achieved as a result.

Table 2.1: Road Safety Management process, core requirements and case study examples

| Function | Road Safety Management process | Core requirements | Case study/further Information | Responsibility |
|---------------|--|--|---|---|
| Results Focus | Adopt and implement the Planning for Zero Framework to establish a systemic, evidence based and quantitative technical model for specifying safe system end states, analysing systemic risk, developing a strategic intervention response, and monitoring performance. | Technical components, including systematic transition to a Safe System End State. Supported by safety integration, change management, communications and capacity building. | See Austroads publication SAG6365. See also Section 3.2. | National, state and territory lead agency and/or relevant national/state/territory legislator |
| | Develop, maintain and improve a results management framework: <ul style="list-style-type: none"> socio-economic costs, and fatal and serious injuries safety performance indicators outputs which directly impact upon the safety performance indicators. | Publicly promote safety performance indicators and why they are being adopted will increase the opportunity for resources to be allocated to best effect for proven road safety countermeasures. | See Section 3.2 and 3.6 and associated case study examples. | National, state and territory lead agency and/or relevant national/state/territory legislator |
| | Develop and implement a 10-year multisectoral strategy with a safety vision, targets, strategic directions, and implementation arrangements (governance, funding, evaluation etc) and periodic 3- to 5-year plans for delivery. | A well-developed strategy provides ready reference for scoping and defining new policy and/or investment decisions in either technical safety interventions or wider system improvements. | See Section 3.9 and case study on the development of the Road safety Plan NSW, Australia. | Jurisdictions on national, state, territory and local government level |
| | Develop, implement and continuously improve a safety management system, focused on ultimate elimination of serious trauma, and encompassing all aspects of leadership, planning, delivery and review. | Explicitly stating how activity is addressed, by whom, and in connection to what, generates strength and resilience as well as highlights co-benefits of road safety action with other government priorities. A defined process creates greater efficiency, and its effectiveness can be evaluated and further improved. | See Section 3.6 and case study on Sweden. | National, state and territory lead agency and/or relevant national/state/territory legislator |

| Function | Road Safety Management process | Core requirements | Case study/further Information | Responsibility |
|-----------------------------------|--|---|--|---|
| Coordination | Develop, administer and sustain a road safety governance framework which supports: <ul style="list-style-type: none"> Leadership of road safety effort by a government agency Accountability by government agencies for results, within cross-government context Information and feedback loops with stakeholders outside government. | A governance framework which sets out roles and responsibilities while also respecting organisational decision-making authority can strengthen accountability for intervention delivery. It can help provide the basis for integrating road safety as a high-priority item within government, engaging responsible ministers in decision-making, and promoting bipartisan support. | See Section 3.5 and case study on SUMP in Europe. | National, state and territory lead agency and/or relevant national/state/territory legislator |
| | Develop, sustain and amend as necessary an organisational structure for the lead agency which fits government organisational design requirements, and creates the organisational strength required for road safety leadership within and across government. | A well-resourced and mandated lead agency provides specialist safety expertise for intervention design by delivery partners, including support for policy and investment decisions. | See Section 3.1 and case study on Road Safety Authority, Ireland. | National, state and territory lead agency and/or relevant national/state/territory legislator |
| Promotion | Develop an ongoing program of promoting road safety action to stakeholders with the capacity to influence and promote: <ul style="list-style-type: none"> Awareness about the scale and nature of road trauma Safety vision, strategy, plans, interventions and results Delivery of road safety by a wide set of stakeholders both inside and outside government. | The most effective promotion programs in road safety build support for investment in high quality interventions. This may include direct community engagement but is most likely to be successful once a strong stakeholder base has been established, ready to reinforce primary messages through their own spheres of influence. A stakeholder engagement strategy would assist and support future intervention implementation. | See Section 3.3 and case study on speed management initiative in Auckland, New Zealand. | National, state and territory lead agency and/or relevant national/state/territory legislator |
| Legislation/Policy Implementation | Develop, implement and periodically review a 10-year legislation and strategic policy reform program: <ul style="list-style-type: none"> New and improved safety standards across all legal aspects of the road transport system New and improved policy reform based on evidence and proven interventions. | Strategic policy and legislative analysis drive every aspect of intervention design which comprises either setting higher safety standards, or improving compliance with standards. Effective policy implementation is critical to support and sustain road safety improvements. | See Section 3.7 and examples of policy interventions including the Graduated Licensing Scheme and Random Breath Testing. | National, state and territory lead agency and/or relevant national/state/territory legislator |

| Function | Road Safety Management process | Core requirements | Case study/further Information | Responsibility |
|--------------------------------------|--|--|--|---|
| Funding and Resource Allocation | Develop, apply and improve a road safety financing model which details the costs of road trauma, 10-year investment requirements to meet interim and ultimate safety targets, and strategic budget allocation across government delivery partners. | Some very effective safety interventions are cheap (e.g. speed limits), some are costly but provide lasting benefits (e.g. infrastructure), and others require ongoing maintenance (e.g. enforcement). Safety investment planning, cost-benefit analyses, consistent funding streams, safety accountabilities in bigger projects, connecting safety funding with accountability and results are all important to drive better interventions and results. | See Section 3.10 and case study from Victoria, Australia. | National state and territory lead agency and/or relevant national/state/territory legislator |
| Monitoring, Evaluation and Reporting | Develop, manage and improve comprehensive data management systems which allow for collection and analysis of exposure, performance and delivery data. | Advanced data collection such as crash reporting systems allow for continuous refinement of intervention design and investment. Ongoing training programs for analysts ensures best use of available data for decision-making by multiple stakeholders. | See Section 3.2 and 3.6 and case studies on Sweden/Norway. | National, state and territory lead agency and/or relevant national/state/territory legislator |
| | Design, implement, and routinely publish the results of systematic monitoring processes that allow for detailed evaluation of road safety performance. | Routinely updating and promoting data on fatalities and injuries, on intervention delivery and on safety performance helps provide oversight of intervention delivery and can highlight future intervention requirements. | See Section 3.2 and case study from Norway. | National, state and territory lead agency and/or relevant national/state/territory legislator |
| | Establish an ongoing program of outcome focused evaluations of the road safety management system, specific strategies or plans, and critical areas of activity. | Design robust outcome evaluation frameworks that compare pre- and post-implementation data, accounting for external factors. | See Section 3.7 and examples of policy interventions including the Graduated Licensing Scheme, Random Breath Testing, Roadside Barriers. | National, state and territory lead agency and/or relevant national/state/territory legislator |

| Function | Road Safety Management process | Core requirements | Case study/further Information | Responsibility |
|---|---|--|--|---|
| Research and Development and Knowledge Transfer | <p>Establish an ongoing research and development program focusing on strengthening understanding of:</p> <ul style="list-style-type: none"> road safety management systems, processes, intervention design and evaluation the various system elements influencing road safety outcomes and their interactions proactive risk identification, and systemic risk mitigation. | <p>Research and development investment underpins the capacity of organisations to develop innovative solutions able to deliver better results. This investment needs to be underpinned by:</p> <ul style="list-style-type: none"> frameworks and tools that operationalise systems thinking and Safe System principles training programs and decision-support tools that focus on translating knowledge into practice knowledge-sharing with key delivery partners. | <p>See Section 3.8 and a local government example from Bundaberg, Queensland.</p> <p>See also a case study on roadside barriers in Nepal in Section 3.7.</p> | National, state and territory lead agency and/or relevant national/state/territory legislator |
| Accountability and Leadership | <p>While accountability and leadership are not discreet functions in the GRSP framework they are critical to drive a results focus.</p> | <p>Strong leadership and clear accountability for results will drive change and improve road safety outcomes.</p> | <p>See Section 3.6 and an example of how political leadership in Wales.</p> | National, state and territory lead agency and/or relevant national/state/territory legislator |

There is an ongoing challenge to foster, commit and maintain action and effort to improve road safety outcomes. Nevertheless, when the institutional management functions in Figure 2.2Figure 2.1 are both in place and actively managed, senior executives in government are much better placed to support elected officials and improve results. Weakness in institutional capacity and/or capability in these functions can lead to ineffective selection, design and prioritisation of interventions which will undermine results. By developing sound management processes that directly shape better interventions, better results can be expected. Ongoing evaluation and improvement of those processes is critical. Over time, and as the understanding of effective road safety management is improved, embedded safety management processes provide an essential base for renewal and a new wave of safety reform.

3. Proven Road Safety Management Initiatives and Supporting Case Studies

This section outlines 10 proven road safety management initiatives. Each initiative is briefly described including the benefits of the initiatives, the core elements that are necessary and implementation considerations to assist jurisdictions based on a review of the literature. One or more case study examples follow the proven initiative to highlight action that was undertaken in practice, stakeholders that were involved and outcomes of the initiative. Some case studies from international jurisdictions are included in the report to provide broader perspectives and highlight global road safety management best practice.

3.1 Proven initiative 1: A lead agency for road safety

Brief description of the initiative

A lead agency for road safety is the primary organisation responsible for coordinating and overseeing efforts related to improving road safety within a country or jurisdiction. The lead agency provides a point of accountability for the combined road safety effort. Examples of lead agencies for road safety include national transport departments, jurisdictional road managers, road safety commissions, or specialised government bodies dedicated to transportation safety.

Benefits of the initiative

A lead agency for road safety plays a pivotal role in tackling the complex, multifaceted issue of road safety in the transport system. Road safety is integral to the functioning of sustainable, efficient, and a more equitable transportation system and requires the coordination of many government sectors such as transport, policing, education, and health (Austroads 2021b; Bliss and Breen 2013). A lead agency drives the adoption of the Safe System approach, defines the strategic direction, ensures accountability through governance, and coordinates efforts, fostering a more efficient, cohesive approach to road safety. Without a clear lead agency, road safety interventions may become fragmented, leading to inefficiencies and conflicting approaches.

The lead agency also provides focused leadership and long-term consistency, making it easier to assess progress, allocate resources, and adjust strategies as needed. This structured approach has proven effective, as evidenced by countries like Norway and Sweden, where adopting a strong lead agency led to significant reductions in road trauma (Elvik and Naevestad 2023).

Climate change mitigation, freight efficiency, and road safety policies share many common policy levers and co-benefits. For instance, making streets safe for walking and cycling is crucial for reducing car dependence and improving access to public transport. Coordinating and integrating road safety outcomes with other government priorities will harness inherent synergies and deliver many government priorities.

Core requirements for a lead agency

When establishing and managing a lead agency for road safety, several core requirements are necessary to ensure effectiveness and drive accountability to deliver results.

1. **Clear mandate and authority:** The lead agency must have a clear mandate, responsibility and the authority to coordinate efforts across various levels of government. In many circumstances the lead agency may not always be responsible for the delivery of critical road safety interventions (i.e. enforcement of traffic laws, road infrastructure improvements, driver licensing regulations) in which case clear accountability mechanisms needs to be in place to support effective delivery of proven interventions.
2. **Adequate funding and resources:** Sufficient financial and human resources are essential to ensure the agency can carry out its functions. Securing long-term funding is crucial for sustained impact. Technical staff and senior service staff should have demonstrated competencies across the jurisdiction's capability frameworks (NSW Public Service Commission 2020). In road safety, this requires both breadth and depth of experience of personnel. Breadth of expertise across multiple disciplines is critical, in order to cover the diverse skill sets and Safe System pillars by which road safety is managed and delivered. Depth of knowledge, skills, and expertise are required in order to be guided by the existing large and expanding evidence base and avoid wastage of resources on ineffective or sub-optimal actions.
3. **Location and structure:** The lead agency is most effective if it is centralised single entity (which can be a stand-alone agency or a single component of a roads or transport department/agency). Compared with other arrangements this delivers the advantages of: (1) Providing for efficient fully informed advice to government and fully informed guidance/management of the road safety activities of delivery partners from one location with a singular consistent voice, (2) Facilitating in-house guidance and capacity building, (3) Maintaining a road safety critical mass, (4) Allowing for multiple areas of road safety expertise to be harnessed in teams to identify and apply the most effective solutions to particular problems or emerging issues as they arise, and (5) Allowing for fully informed long term strategy development and action planning.
4. **Collaboration and governance:** Road safety involves multiple stakeholders, including local governments, law enforcement, health and education departments, non-governmental organisations, and the private sector. The lead agency should establish strong partnerships and coordinate actions across these entities. Clear accountability for delivery of proven safe system interventions needs to be managed and delivered within defined organisational structures.
5. **Data collection and analysis:** Effective decision-making depends on accurate and comprehensive data. A crash data management system for road safety is essential for informed decision-making, identifying risk factors, and setting measurable targets. Robust analysis will guide resource allocation and interventions, identify patterns in crashes, and establish targets for reducing fatalities and serious injuries, enabling effective monitoring of safety progress.
6. **Stakeholder engagement, public awareness and education:** Engaging the public through public education campaigns, educational programs, and training will improve road safety outcomes. The lead agency should have a comprehensive and long-term strategy for stakeholder and community engagement to ensure the impact and justification for road safety action is understood and supported.
7. **Monitoring and evaluation:** Continuous monitoring and evaluation at both the strategy level and of individual road safety interventions are vital to assess their effectiveness and identify areas for improvement. The lead agency should set measurable road safety targets, including safety performance indicators, and regularly report on progress.
8. **Regulatory and enforcement framework:** The lead agency should work to ensure that road safety laws and regulations are up-to-date, enforceable, and effectively implemented. It should also ensure that enforcement mechanisms (e.g. traffic police) are adequately trained and equipped.
9. **Integration with broader transportation planning and policy:** Road safety should be integrated into broader transportation planning and policy, ensuring that safety considerations are part of road design, infrastructure development, vehicle standards and transport operations.

10. Elected official support and stakeholder engagement: The lead agency needs strong support from elected officials to ensure that road safety is prioritised at the jurisdictional level. This requires regular engagement with elected officials, advocacy groups, and the public to build consensus around road safety initiatives.
11. Cultural and behavioural context: The agency must consider the local cultural and behavioural context when designing and implementing road safety interventions, recognising that effective strategies may vary by region, demographic, or road environment. Conducting regular attitudinal surveys of public acceptance of proven road safety interventions will support implementation and consultation on road safety interventions is essential.

By addressing these considerations, a lead agency can effectively coordinate road safety initiatives and drive road safety performance.

Implementation considerations

If the implementation of a lead agency for road safety is not carried out effectively, several risks may arise, leading to negative consequences for road safety performance, increased economic costs, reduced productivity and other societal impacts. Some of the key risks include:

- **Inefficient use of resources:** Without adequate data collection, analysis, and coordination, resources may be misallocated or duplicated. Funding for road safety programs might be used ineffectively, with little to no measurable impact on reducing crashes. This can result in a poor return on investment of public funds (Turner et al. 2021).
- **Weak enforcement of road safety laws:** Without clear authority and enforcement mechanisms, road safety laws may not be effectively implemented. This can lead to poor compliance with traffic regulations (e.g. speed limits, seatbelt use, drink driving laws), contributing to unsafe driving behaviours and a higher risk of crashes.
- **Inconsistent safety standards:** If the agency lacks authority or resources to develop and enforce road safety standards consistently, road infrastructure, vehicle safety, and road user behaviours may not meet the necessary safety criteria to improve safety performance indicators, resulting in poor road safety performance.
- **Fragmented and uncoordinated efforts:** If the lead agency fails to collaborate effectively with other stakeholders and key delivery partners efforts to improve road safety may be fragmented or duplicated. This could lead to missed opportunities for leveraging co-benefits of road safety interventions (e.g. enhanced mobility and accessibility, environmental benefits, economic growth) and a lack of comprehensive, coordinated actions to address complex road safety issues.
- **Public apathy and low awareness:** Without a multi-phased public education approach and educational initiatives, the community may remain uninformed about road safety risks, traffic laws, and proven road safety interventions. This could lead to continued risky behaviours, such as speeding, distracted driving, or failure to use seatbelts, all of which contribute to higher crash rates.
- **Failure to adapt to emerging risks:** Without ongoing research, data collection, and monitoring, the lead agency may fail to identify emerging road safety risks or trends, such as new technologies (e.g. autonomous vehicles), changes in traffic patterns, or evolving environmental factors (e.g. climate change). This was experienced during the Covid-19 pandemic when travel patterns changed and government reallocated efforts to other government priorities.
- **Loss of public trust:** If the agency is perceived as ineffective or unaccountable, public trust in its ability to improve road safety may diminish and reduced support for road safety initiatives as well as a lack of cooperation from stakeholders.
- **Economic impact:** Poor road safety performance leads to a higher number of crashes, which results in increased costs for healthcare, emergency response, insurance, and loss of productivity.

- Negative social impacts: Road traffic crashes can have devastating social consequences, affecting families, communities, and society at large. Failure to effectively deliver road safety measures can lead to avoidable suffering, loss of life, and long term physical and emotional impacts on people impacted by road trauma.

Independent scrutiny of road safety management and delivery is important. It may be delivered by establishing a dedicated Minister for Road Safety, a Road Safety Commissioner, Ombudsman, public forums or regular reporting of road safety performance to parliament. However, care is needed to ensure that independent scrutiny maintains a focus on road safety management, delivery, outputs, and outcomes.

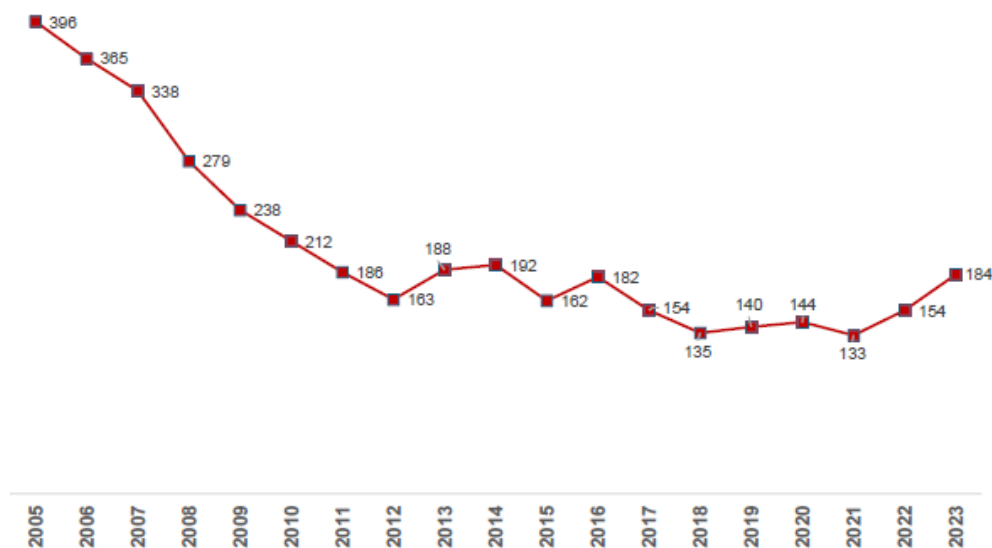
In circumstances where the creation of a new agency or the possession of any of the above features requires legislation, such legislation should be enacted. Legislation also provides greater accountability for road safety in jurisdictions.

Table 3.1: A lead agency for road safety – key characteristics of the initiative

| Item | Description |
|---|--|
| Jurisdiction | Ireland |
| Pillar(s) involved | All |
| Road Safety Management aspects involved | All |
| The problem addressed | Recommendation one from the <i>World Report on Road Safety</i> (World Health Organization, 2004) is to 'identify a lead agency in government to guide the national road safety effort.' The roles and responsibilities for this agency vary between and within countries, and there is no one formula for success. However, there are some fundamental success factors that exist in nearly all jurisdictions that have made significant road safety progress. Weak lead agency structures and processes makes achieving road safety success extremely difficult, and in many cases, even one weak element among other strong elements can substantially undermine success. Bliss and Breen (2009) summarise key elements of a successful lead agency which is included in the reference list of this report. |
| Action | <p>The RSA in Ireland is a statutory authority created by the Road Safety Authority Act 2006. The RSA's mission is to save lives and prevent injuries by reducing the number and severity of collisions on the road. The RSA has the lead role in the co-ordination of the Government's Road Safety Strategy, working with other stakeholders including the Department of Transport in the delivery of this strategy. It was responsible for the preparation and implementation of the Government's Road Safety Strategy 2021-2030. The RSA reports to the Minister for Transport and is accountable to Parliament via relevant committees. In parallel, the Department of Transport provides policy advice to the relevant Minister on road safety issues, including the development and implementation policies, and the department is responsible for the preparation of road safety legislation.</p> <p>The RSA's functions are outlined under various Acts and Orders, and include:</p> <ul style="list-style-type: none"> • Road safety promotion, education, and awareness • Road safety and collision research • Primary responsibility as the lead agency for the governance and implementation of the government's Road Safety Strategy • Driver testing and driver licensing • Governance and supervision of the National Car Testing Service and Commercial Vehicle Roadworthiness Testing • Enforcement of a range of road haulage industry and driver regulations • Regulation of the driving instruction industry • Development and monitoring of vehicle standards • Advising the Department of Transport and the Minister for Transport on all aspects of road safety public policy. <p>This legislated basis for authority is important as it helps to ensure relevant roles and powers, and their visibility to partner agencies. This is especially true for the role as the lead agency.</p> |

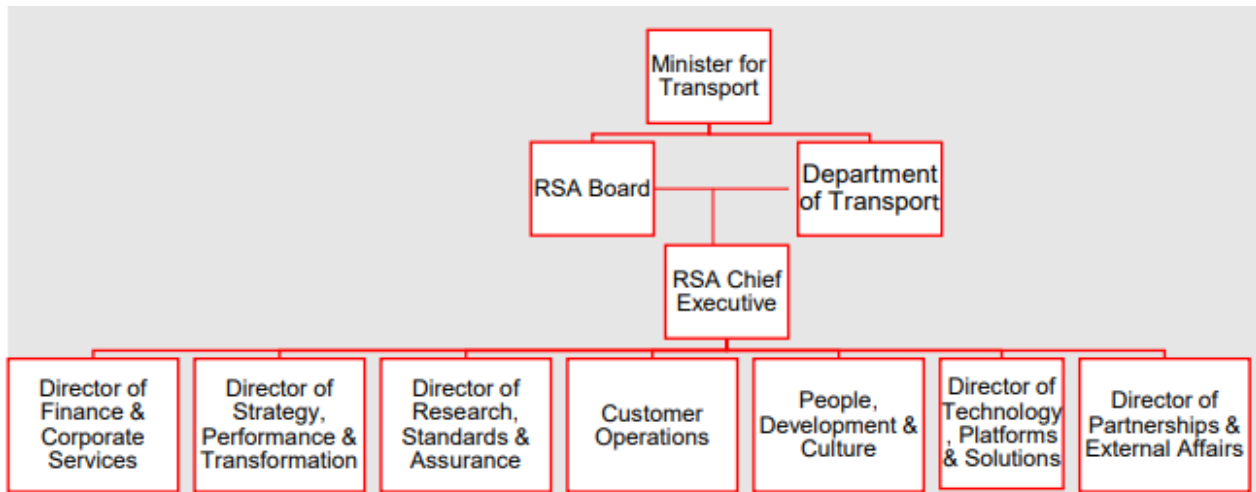
| | |
|-----------------|---|
| | <p>Since the establishment of the RSA, Ireland has adopted a Safe System approach to addressing road safety, and subsequent actions are based on this approach. Seven Safe System priority intervention areas are included in this strategy. Fifteen Safety Performance Indicators (SPIs) have been established based on international best practice. Directed towards the Safe System priority intervention areas of the strategy, these will assist with transparency and accountability during delivery of the strategy.</p> <p>Currently, activities are mostly self-funded based on fees for services, including driver licensing and testing, and roadworthiness testing services. The RSA also operates with a contribution from direct exchequer (treasury) funding. RSA has no statutory responsibility for implementation or funding of enforcement or road safety investment.</p> <p>Ireland’s remarkable road safety performance over recent decades is likely due to a variety of factors. In a recent review of the RSA, Indecon (2024) suggest a number of interventions may have had an impact, including improvement in vehicle safety, an increase in road policing, the introduction of graduated licencing for young drivers, the introduction of speed cameras and reduction in drink driving limits. Over 400 kilometres of motorways were constructed during the first ten years of RSA, bypassing unsafe lower quality rural roads, towns and villages. Ireland has also made substantial progress in implementing speed management and other infrastructure improvements, consistent with the Safe System approach. The figure below (Figure 3.1) shows the recent trends in road fatalities in Ireland.</p> <p>The RSA is governed by a Board of the Authority with a Chairperson and Board Members and the operation is headed by a CEO. The organisational structure of the RSA has evolved over time. Initially it was divided into four Directorates: Vehicle Standards and Enforcement; Finance and Commercial Services; Road Safety Research and Driver Education; and Driver Testing and Licensing, but there have been several restructures. The most recent structure, which has 7 Directorates, is shown in Error! Reference source not found.2. This reflects the changing role of the RSA, and particularly an increase in delivery functions.</p> |
| <p>Outcomes</p> | <p>Since the launch of the first Road Safety Strategy in 1998, road deaths in Ireland have declined by almost 70%. Much of this benefit has been achieved since the establishment of the RSA in 2006, with a halving of fatalities to 2023. During the period of the last strategy (2013–2020) Ireland achieved their lowest number of road deaths since records began, with a rate of 2.8 deaths per 100,000 population – the second lowest in the European Union. Although there have been recent increases in deaths since, the same trend has been seen globally post COVID-19. The roles and responsibilities of the RSA have also expanded, while the level of resourcing (both financial and human) have not kept pace. This issue has been recognised in Ireland, and a restructure has been announced that will separate customer service roles into a separate entity, allowing a greater focus for a lead agency role to coordinate future road safety efforts. In their new road safety strategy, Ireland has set a target to reduce road deaths and serious injuries by 50% by 2030.</p> |

Figure 3.1: Recent trends in the number of road fatalities, Ireland



Source: Indecon (2024).

Figure 3.2: Current structure of RSA



Source: Road Safety Authority (2025).

3.2 Proven initiative 2: Adoption of Vision Zero by 2050 and the importance of interim targets

Brief description of the initiative

The Vision Zero target was first adopted by Sweden in 1997. Sweden's government officially committed to the goal of eliminating all traffic related deaths and serious injuries by 2050, and it was the first country to implement the Vision Zero approach. Since then, other countries, cities, and regions around the world have adopted Vision Zero. The adoption of Vision Zero has often been accompanied by elected officials and senior leadership expressing the commitment to zero deaths as the only ethically right objective. The target has gained global recognition and is now seen as a key approach for improving road safety worldwide.

At the global level, the required commitments are articulated through several mechanisms: The Global Plan for the Decade of Action on Road Safety, 2021-2030 (WHO 2021) which sets the action to deliver the 50% reductions in deaths and injuries by 2030 agreed in UN Resolution 74/299, the Sustainable Development Goals which include 2 goals on road safety (Peden and Puvanachandra 2019), and the agreed road safety targets of the World Health Assembly (see Figure 3.11). In Australia and New Zealand, these commitments are articulated in the national road safety strategies (Commonwealth of Australia 2021; New Zealand Government 2019), as well as in various state/territory strategies.

Benefits of the initiative

Road safety activity needs to be managed, using a 'results focus'. This involves the identification of key road safety issues and risks, and identifying the most effective set of interventions to address these. This also involves setting of targets and tracking performance in the delivery (output measures) and outcomes (performance indicators and final outcomes), including tracking to the Vision Zero objective. Without this focused, planned approach, road safety is not being managed effectively.

A results focus involves a planned approach to achieving road safety outcomes. It links the institutional management functions of a lead agency and other stakeholders with the interventions required to make substantive road safety improvements. Without a results focus involving all of these elements, it is not possible to understand whether the most effective activities to improve road safety are being undertaken. The importance of a results focus is described in detail in Bliss and Breen (2009; 2013).

Jurisdictions that have adopted a results approach and embedded the required elements of this within strategy and action planning, have demonstrated the significant benefits of this approach.

Core requirements for a results focus

1. Commitment to Vision Zero by 2050: Governments are dedicated to achieving Vision Zero by 2050 and implementing interim targets (e.g. 2030).
2. Leadership understanding and training: Elected officials and senior government executives must understand the Safe System approach and Vision Zero, including required milestones, resources, and the importance of avoiding the blame on road users. This requires specialised training and guidance. Austroads Project SAG6365 *Charting a Path to Zero* outlines detailed guidance on how to undertake this task including the importance of stakeholder engagement and training. Stakeholders, advocacy groups and the community play a pivotal role in building support for improved road safety outcomes.
3. Accountability and reporting: Clear accountability for achieving milestones, including the development and tracking of safety performance indicators. Annual public reporting on milestone progress, based on evidence-based Safe System End States (SSES), for transparency.
4. Target-setting and legislation: Setting targets, including Vision Zero by 2050, with consideration for legislative adoption to enhance accountability.
5. Costing and funding of interventions: Detailed costings of interventions in strategies and dedicated funds to ensure successful implementation.

Implementation considerations

In order to commit to road safety targets and interventions that will achieve Vision Zero and interim targets elected officials, senior government executives, stakeholders and the community need to have an understanding of the many benefits of adopting this approach. Providing training, guidance, and comprehensive briefings is crucial along with strong advocacy and support. Road safety leaders have an opportunity to improve engagement with elected officials, senior government officials, and stakeholders to raise awareness and support for this approach. Detailed guidance on how to undertake this task is outlined in Austroads Project SAG6365.

Bipartisan commitment for Vision Zero and its interim targets will support long-term investment and focus. Bipartisan support ensures that road safety initiatives and road safety goals remain stable and consistent and signals to the community that road safety is a priority for everyone. Building community support is an important precursor to building bipartisan support and how to achieve this is outlined in Section 3.3.

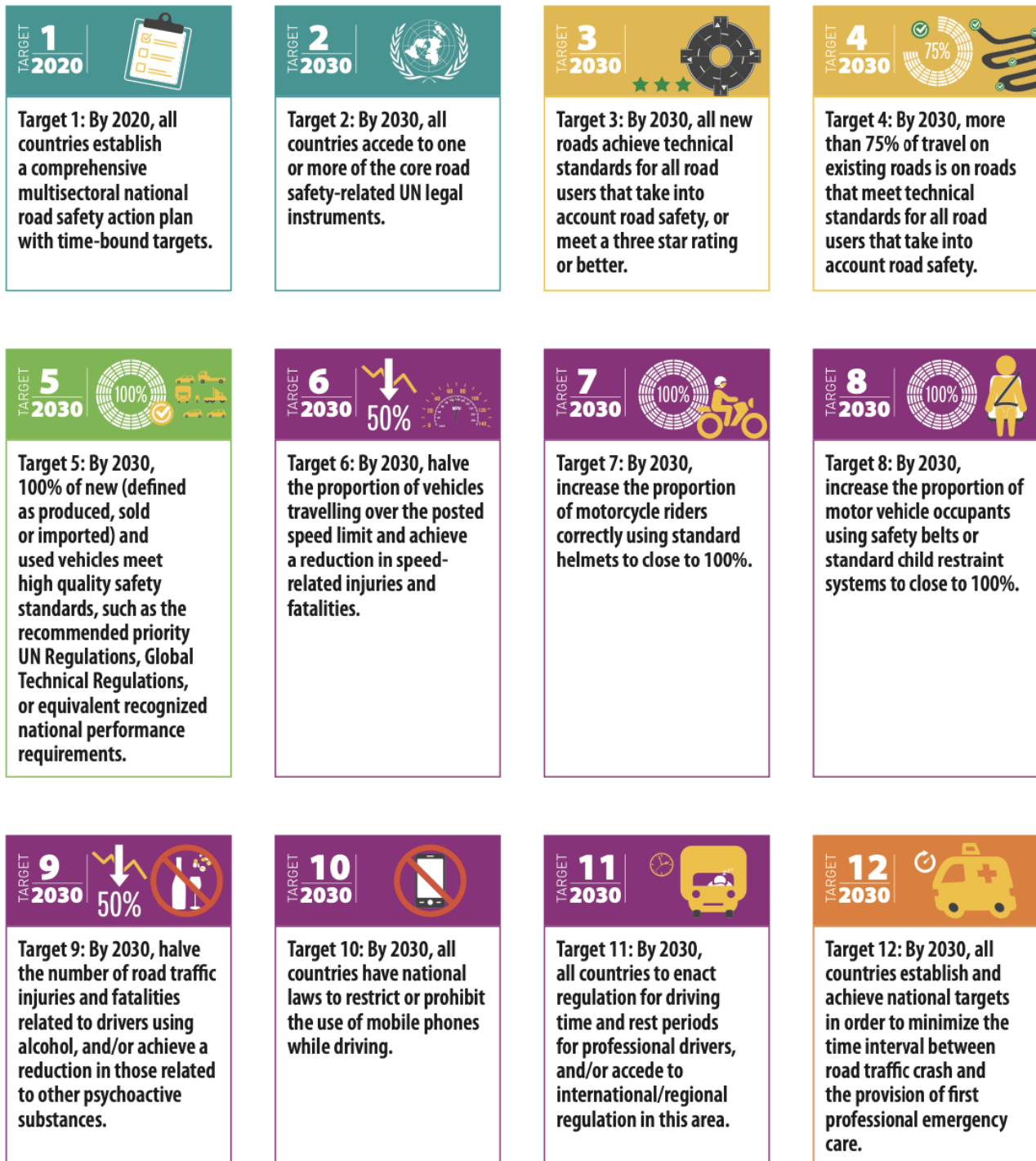
Even with agreed targets and strategies are not sufficient. The global target for the last decade (World Health Organization 2011) was not achieved and was not on track for delivery (Peden and Puvanachandra 2019), and neither Australia nor New Zealand achieved their targets as set in prior strategies. By strengthening accountability mechanisms leaders will be engaged to prioritise investment, service changes and statutory settings to achieve change.

Another powerful way to improve accountability is to set milestones for delivery on each key area of action which must be achieved each year and the adoption of safety performance indicators in road safety strategies and action plans.

Table 3.2: Vision Zero target – Key characteristics of the initiative

| Item | Description |
|---|--|
| Jurisdiction | Norway |
| Pillar(s) involved | All |
| Road Safety Management aspects involved | Results focus |
| The problem addressed | Norway is one of the most successful countries in the world when it comes to road safety performance. It has consistently outperformed other OECD countries in recent years, with a death rate per population of less than half that of Australia and a third of New Zealand (2.14 for Norway; 4.54 in Australia; and 7.33 in New Zealand, based on BITRE 2023). |
| Action | <p>According to Elvik et al. (2023), Norway adopted Vision Zero in 2001, not long after its beginnings in neighbouring Sweden. The Vision Zero approach in Norway covers all modes of transport and is supported by all political parties. The approach is embedded in the National Transport Plan, which is presented to the Norwegian Parliament every 4 years. The first National Transport Plan was produced in 2000, covering the period 2002–2011, while the first Action Plan for road safety was produced in 2002, covering this same period. The first plan was approved by the Norwegian Parliament in 2001 (Elvik 2022).</p> <p>Elvik et al. (2023) describe this first Action Plan as a ‘radical’ policy innovation, with subsequent plans adopting incremental improvements. One key feature was a comprehensive framework for delivery, based on a set of safety performance indicators, each with a target for 2011. These included SPIs for speed, impaired driving (i.e. influenced by alcohol or drugs), seat belts, bicycle helmets, pedestrian reflective devices, safety features of heavy goods vehicles, length of roads classified as hazardous, and reduction of the number of killed or seriously injured road users aged 17 to 25. These performance indicators and monitoring metrics are outlined in Figure 3.4</p> <p>The approach taken in this first road safety action plan were innovative. Although there was no overall reduction target (this emerged in later action plans), there was an analysis regarding the likely impact of measures, which equated to 100 less fatalities per year, and 300 less serious injuries. Clear responsibility for each of the 95 measures in the action plan was documented, with the Public Roads Administration assigned responsibility for implementing many of these. The inclusion of these performance indicators and key accountabilities was perhaps the first concrete example of a strong results-based framework in road safety. The approach has evolved and improved in Norway. The number of SPIs has increased in Action Plans, with 13 in the 2018-21 plan. The set of indicators for this plan is shown in Figure 3.4. A large number of stakeholder groups were involved in developing and delivering road safety plan activities in Norway. The initial plan (in 2002) was signed by the directors of the Norwegian Public Roads Administration, The Norwegian Road Safety Council and the Police Directorate. In subsequent plans, the Directorate of Public Health, the Directorate of Education, and the Association of Municipalities have all joined to help ensure successful planning, monitoring and delivery of road safety outcomes.</p> |
| Outcomes | As identified above, Norway has consistently been one of the best performing road safety countries in the world. For several years over the last decade, it has had the lowest number of fatalities per population out of all OECD countries. Although Norway is consistently a leading country in terms of deaths, the numbers continue to decrease over time. Between 2002 and 2021, there was an average annual decline of 6.7%. Many other countries have had stagnation in safety outcomes following periods of improvement, and sustained reductions like those seen in Norway are unusual. |

Figure 3.3: Global Road Safety Performance Targets for 2020, as agreed by the World Health Assembly



Source: World Health Organization (2004).

Figure 3.4: Indicators and targets in Norway, adopted as part of a results-based framework

| Priority areas | Indicator | Current status | Indicator target |
|---|--|--|--|
| Speed (section 4.1) | Percentage of vehicles travelling in excess of the speed limit | 59,9 % (2017) | 70 % (2022) |
| Intoxication (section 4.2) | Percentage of motor vehicle traffic involving intoxicated drivers with a blood alcohol content of 0.02%. | 0,2 % (2016/2017) | 0,1 % (2026) |
| | Percentage of motor vehicle traffic involving intoxicated drivers under the influence of drugs and over the threshold for criminal punishment. | 0,6 % (2016/2017) | 0,4 % (2026) |
| Seat belts/securing of children in the car (section 4.3) | Percentage of drivers and front-seat passengers wearing seat belts in private cars | 97,2 % (2017) | 98 % (2022) |
| | Percentage of children aged 1–3 years secured in rear-facing car seats | 63 % (2017) | 75 % (2022) |
| | Percentage of drivers of heavy vehicles wearing seat belts | 84,3 % (2017) | 95 % (2022) |
| Children (0–14 years) (section 5.1) | Number of children (0–14 years) killed in the road system. | 4 (2017) | 0 (at least one per year for 2018–2021) |
| Young people and younger drivers (section 5.2) | Risk of being killed or seriously injured for car drivers aged 18–19, per kilometre driven | | - 30 % ^A |
| Older road users and road users with disabilities (section 5.3) | Risk of being killed or seriously injured for car drivers aged 75+ years, per kilometre driven | | - 30 % ^A |
| | Risk of being killed or seriously injured in a traffic accident for pedestrians aged 75+ years, per kilometre walked | | - 30 % ^A |
| Pedestrians and cyclists (section 6.1) | Number of kilometres of national roads and county roads adapted for pedestrians and cyclists | Total for the plan period: 165 km of national roads (2018–2021) B 230 km of county roads (2018–2021) | |
| | Percentage of cyclists wearing bicycle helmets | 58,8 % (2017) | 70 % (2022) |
| | Number of pedestrians using reflectors on lighted roads in the dark | 40 % (2017) | 50 % (2022) |
| Motorcycles and mopeds (section 6.2) | Risk of being killed or seriously injured for motorcycle and moped drivers per kilometre driven | | - 30 % ^A |
| Transportation involving heavy vehicles (section 6.3) | Percentage of heavy vehicles with a maximum authorised mass of over 7,500 kg that pass the periodic roadworthiness test without serious remarks | 23,2 % (2017) | 30 % (2022) |
| Head-on collisions and Run-off-the-road accidents (section 7.1) | Percentage of motor vehicle traffic on national roads with speed limits of 70 km/h or higher that takes place on roads with median barriers | 49,3 % as of 1 Jan 2018 | 54,1 % as of 1 Jan 2022 |
| | Number of kilometres of national road with speed limits of 70 km/h or higher that have been assessed, and that meet the minimum standards set out in the NTP to prevent serious run-off-the-road accidents | | 1500 km (to undergo improvement works in 2018–2023) ^C |
| Vehicle technology (section 8.2) | Percentage of motor vehicle traffic involving cars with autonomous emergency braking (AEB) | 14,4 % ^D (2017) | 25 % (2022) |
| | Percentage of motor vehicle traffic involving cars with lane departure warning | 39,2 % ^D (2017) | 52 % (2022) |
| | Percentage of motor vehicle traffic involving cars with autonomous emergency braking to prevent collisions with pedestrians and cyclists (pedestrian AEB) | 14,4 % ^D (2017) | 25 % (2022) |
| Road safety work in county administrations and municipalities (section 9.1) | Number of municipalities approved as Road safe municipalities | 62 ^E as of 1 Jan 2018 | 125 as of 1 Jan 2022 |

Source: Norwegian Public Roads Administration (2018).

3.3 Proven initiative 3: Fostering greater community acceptance of road safety

Brief description of the initiative

The community need to be actively informed and engaged in decisions about road safety issues and the impacts of strategies and interventions. Communities are usually highly supportive of changes that will bring safety benefits, but this support requires active engagement to inform about risks and explain the reasons for change and the likely benefits.

Benefits of the initiative

It is well recognised that road safety reform is difficult because it involves complex, multi-faceted challenges, requires adequate resources, and demands sustained effort to change road user behaviours.

Proven road safety initiatives in speed management such as speed limits set to Safe System levels (Austroads 2019), effective traffic calming (Mitra et al. 2021), and strong enforcement including automated enforcement and covert enforcement (Wilson et al. 2010; Keall et al. 2003; Turner et al. 2022) are almost universally under-utilised (Asian Development Bank 2024). There is a substantial body of evidence that articulates the difficulty in implementing proven speed management initiatives (Austroads 2025a), however the indisputable fact is that a robust engagement strategy is critical.

In order to build support for proven road safety interventions, as well as medium- and long-term targets, well planned public education, promotion, and engagement with the community are required. To build support for interventions community and stakeholder consultation must be undertaken to explain the evidence base for interventions. Consultation and promotion also reassure elected officials to support the intervention. This is best supported by conducting regular quantitative surveys of attitudes and beliefs in relation to proven interventions.

Similarities can be drawn to the public health effort that has been undertaken in areas such as smoking where policy interventions have been supported by significant and sustained investment in public promotion. The sustained efforts with the community made in relation to drink-driving and the introduction of random breath testing (which changed community acceptance of drink-driving), the dramatic escalation of seat-belt use with broad advance campaigns and enforcement, as well as the introduction of, and improvements to graduated licensing for young drivers, are good examples of successful evidence based interventions supported by well-funded communication and engagement.

The value of road safety, the personal and human nature of crash trauma and death, and the concept of Vision Zero have been successfully promoted first in Victoria and more recently in NSW and elsewhere through the 'Man on the Street' campaign. With this campaign and strong communications on Vision Zero from elected officials in NSW, community surveys show that support for Vision Zero has grown dramatically from 38% to 84% (Transport for NSW 2024).

Core requirements for creating greater community acceptance of road safety

Bringing the community to a more informed appreciation of road safety and what is required to deliver it, is critical to understanding road safety priorities and required policies. The following activities will facilitate this.

1. Regular surveys of community attitudes: Surveys commonly show majority support for better road safety policies including stronger speed management, yet vocal minority views continue to be presented in the media. Majority support for various specific actions should be promoted to elected officials, the community and the media. Surveys should be at a scale that is representative of the community to ensure credibility and reliability.
2. Strong information provision to the media: Sharing road safety evidence with the media will assist with dispelling misinformation about a proven intervention. Engaging public relations experts can assist with developing engagement approaches.
3. Pilots and evaluations to demonstrate success: Undertaking pilots of proven interventions and sharing evaluations of interventions will build support for their broader application.
4. Education of children and young people: Schools offer an opportunity for deeper learning. Added benefits may be obtained in road safety education in secondary education to build a better understanding and deeper appreciation of the Safe System approach, Vision Zero, and the role of system operators in determining road safety outcomes. This may increase community demand for, and support for, safe infrastructure and speeds (Job and Sakashita 2012). This is also suitable content for many university courses (such as civil or traffic engineering, the health sector, government, and public policy). Training and explanation of Safe System and Vision Zero in police academies is also recommended. Safe System education in schools is likely to be a gradual win, which must be supported through promotion of system accountability to the broader community.

Implementation considerations

Patience with policy change and especially speed limit reductions is needed. Vocal community concerns often dissipate, and support typically grows for lower speed limits, which become the accepted status quo. This is the pattern for many road safety behaviour change initiatives (random breath testing, seatbelt enforcement and the graduated licensing scheme, as note above in the rationale). Local government, advocacy groups and other government agencies (e.g. planning, health, police) should also be engaged to support lower speed limits. Well-developed stakeholder and engagement plans to support significant policy change including briefings with key advocacy groups, spokespeople, social media posts to counter misinformation, and highlighting improved compliance as progress occurs.

If community surveys are not currently conducted they should be added, in order to allow promotion as well as the provision of information. This may include evaluation evidence and data (celebrating successes), and personal stories for emotional impact. In addition, community surveys should be undertaken during the development of road safety action plans (and tracked over time) to support consideration and endorsement of new interventions that are proposed. Consideration should be given to using independent research expertise to assist with building further credibility and reliability of results.

In addition, there may be value in changing common road safety narratives to emphasise and humanise the human suffering from serious road crashes. Examples, worthy of considering include moving away from the term 'road toll' (with the term toll being seen as an accepted or inevitable cost, like paying a fee to use a particular privately operated road) to terms such as 'lives lost' or 'suffering created,' emphasising the importance of human stories and the social impacts of crashes, and information on the economic costs of crashes in absolute terms and as proportions of national gross domestic product.

Local government plays a critical role in building community support of road safety interventions because of its close connection with communities. Further information on the importance of local government in road safety management is outlined in Section 3.8.

Table 3.3: Fostering greater community acceptance of road safety – Key characteristics of the initiative

| Item | Description |
|---|---|
| Jurisdiction | Auckland, New Zealand |
| Pillar(s) involved | All |
| Road Safety Management aspects involved | Promotion, Coordination |
| The problem addressed | <p>Individuals and communities are aware of the impact that road crashes have on society. Globally, road crashes continually lead the list of concerns expressed by respondents when asked about the greatest source of risk to your safety in daily life. This exceeds other factors such as crime/violence, personal health issues, climate change and war/terrorism (Vigers 2024). However, despite this awareness it is often the case that the full scale and impact of road trauma is not well known. Similarly, community members are often unaware of the reasons various interventions are used.</p> |
| Action | <p>In 2019 the Auckland Transport board approved a Transport Safety Strategy and Action Plan to 2030 and the Road Safety Programme Business Case, both of which were based on Vision Zero. These identified a range of interventions to address road trauma, including speed management. Setting safe speeds was identified as the fastest way to increase safety on the Auckland road network given speeds influence both the chances of crash occurring, and the severity of injury given a crash (Auckland Transport 2022a; Job and Brodie 2022). Engagement with communities was a key element in the successful agreement to an ambitious speed management strategy that is likely to deliver considerable benefits to the people of Auckland.</p> <p>A comprehensive approach was taken to community engagement. A well informed and supportive community gives confidence to elected officials and other decision makers, and in this case gave the confidence to local or regional elected members to continue supporting an evidence-based approach. A number of activities occurred which grew community and local Board understanding. Some actions were driven by communities themselves. Activities included the gathering of evidence, a phased approach to delivery, community forums, involvement of stakeholder groups, and direct representation from communities.</p> <p>Gathering evidence – Different types of evidence were gathered at various stages of the policy development and used in the engagement with both community and decision makers. This included information on the expected road safety benefits, the impact of speed change on emissions, and the likely change to journey times.</p> <p>Safety benefits: A road safety business case was prepared that included the likely safety benefits from changes in speed limits. Data on benefits were calculated based on evidence on likely impacts from speed change using Elvik’s Power model of speed.</p> <p>Emissions: It was useful to highlight that speed reductions in urban areas would not have a detrimental impact (there was initial pushback due to a perception that emissions may increase from traffic calming measures such as raised crossings), and to highlight that there may even be a co-benefit in terms of overall emissions reduction. The Auckland Transport Speed Management Plan assessed the likely impact on vehicle emissions from various speed change options (Auckland Transport 2022b). Emissions were calculated directly from the Auckland Macro Strategic Model (MSM) outputs and included mode shift assumptions. As part of a review of emissions, Auckland Transport commissioned further work on this issue (Metcalfe 2023), and identified that:</p> <ul style="list-style-type: none"> • Many factors that can impact emissions, including speed, but the types of vehicles in the fleet is the most significant. • Speed limit reductions in urban areas will not significantly impact greenhouse gas emissions; reductions in the 100 km/h to 80 km/h range will reduce greenhouse gas emissions by less than 10%. • The impacts of traffic calming measures on emissions are likely to be small. |

The report concluded that in order to achieve significant reductions in emissions, an increase in journeys undertaken by walking, cycling and public transport was required, and that speed reduction is 'a critical part of our emission reduction pathway for Auckland and New Zealand.'

Journey times: Increases in journey time are often a barrier to speed reduction, with the assumption from community members and decision makers that reduced speed limits will result in substantial additional travel times, with associated costs. Previous research has identified that this is usually significantly overstated, and that increases in times and costs are often minimal. Modelling was undertaken to identify likely impacts on traffic and journey times (Auckland Transport 2022b). The Auckland Macro Strategic Model (MSM) was used to model these changes. Based on average journeys of around 11 km, it is estimated that average trip times would increase by only between 13 and 15 seconds on an average trip time of between 14 and 19 minutes. For the most comprehensive scenario, the impact on travel times was estimated at less than a 2 percent increase over existing times.

Phased implementation – In 2020, Auckland Transport implemented a program of safe and appropriate speed limits on just over 880 km of roads, around 11 percent of Auckland's local road network. Roads included a mixture of high-risk roads and others where operating speeds were lower than the existing speed limit. The program included roads from high-risk rural areas, the city centre, several town centres, residential areas and urban roads. After the first 24-month period, an evaluation of the overall program (Abley, n.d.) identified a reduction in deaths and serious injury crashes of 22 percent, and a 27 percent reduction in fatal crashes. The results for rural roads produced the most significant reduction, with a 46 percent decrease in fatal crashes and a 27 percent decrease in death and serious injury collisions. All injury crashes on rural roads decreased by 17 percent. Based on this early success, Auckland Transport changed a further 2000 km of road network to lower speeds on rural roads and around schools.

Partnerships – Identifying and linking with other key stakeholder groups who provided trusted community voices was an important element of success. This also highlights the need to identify co-benefits from the policy change. As one example, Healthy Auckland Together is a coalition of 25 organisations working to make the Auckland region a healthier place. The partnership includes health agencies, academics, NGOs, local government, mana whenua (Māori tribes), community representatives and consumer interest groups. Healthy Auckland Together believe that all children should have a safe route to school for walking, cycling and scootering, regardless of where they live, and that safety can be improved around schools by calming the roads with safe speeds. They advocated for safe speeds, and produced a scorecard report to analyse the speed proposals by each Local Board in Auckland (Healthy Auckland Together 2023)

Students Against Dangerous Driving (SADD) is a New Zealand youth-led organisation that has been influential in advocating for lower speed limits around schools and residential areas. In December 2023, National Leaders presented their concerns about speeds around schools at a Council Committee meeting (a meeting of the mayor and councillors of Auckland). Their advocacy included well-researched information on safety related issues in an attempt to raise awareness of the dangers of high speeds near schools. The involvement of SADD contributed to a significant decision for change in Auckland. Auckland Council endorsed a new speed management plan, proposing a reduction in speed limits to 30 km/h around 40% of the city's schools. Furthermore, the initiative has fostered a culture of road safety awareness among young people, potentially encouraging more students to walk and cycle to school safely.

The involvement of these trusted community voices added weight to discussions about the need for change. Following consultation, 18 out of 21 community boards supported speed changes.

Engaging with communities – It was important to provide information to community members on the significance of the speed issue as a road safety problem, but also that this is solvable. It is also important to provide information on the effective interventions that can be used, and their likely outcomes. Equally important is the need for active engagement to understand community concerns and requirements. Part of this engagement process includes the dispelling of common myths which are often the most significant barriers to change. However, following evidence-based communications approaches, Auckland Transport identified that presenting or repeating myths for sensitive topics such as speed reduction can be counter-productive, and that it was more useful to talk about the facts and evidence in order to dispel these myths. Clear materials were provided to highlight the evidence during consultation, and disseminated via social media and in publicly accessible documents (see for example, the Auckland Transport Safe Speed FAQs: https://at.govt.nz/media/1988863/safe-speeds-programme_faq.pdf). This presentation of evidence was identified as one of the most successful engagement measures. Information to bring community perceptions closer to reality will improve the value of the engagement. There was also engagement with more mainstream media, and a lesson here was that it can be difficult to gain airtime with media, and so it is useful to engage during quiet periods in the media cycle or where there might be increased focus on safety (e.g. before Christmas and Easter). It was also useful to

| | |
|-----------------|--|
| | <p>frame the speed issue within the broader road safety and Safe System context when engaging with media and communities.</p> <p>Bringing groups together – Auckland Transport used a comprehensive community engagement workshop approach as part of their speed management plan to improve public understanding and acceptance of lower speed limits. The approach was based on International Association for Public Participation (IAP2) principles to ensure meaningful and purposeful community engagement. The approach involves multiple stakeholders and various engagement tools and processes to gather feedback and inform decision-making. The preparation phase involved identifying key stakeholders and ensuring all participants were well-informed about the workshop's purpose, scope, and process. Workshops were independently facilitated by an accredited facilitator. Four workshops were conducted, 2 virtual and 2 in-person, between May 28 and June 1, 2022. Each workshop included a mix of presentations, discussions, and interactive activities designed to produce feedback and generate discussion among participants. Members of Auckland Transport, technical experts, police, the Automobile Association (AA) and engagement team members provided input during each workshop, including briefings and answering of participant questions. The independent facilitator highlighted key themes, based on participant feedback. These themes were used to help shape the speed management plan and included testing the level of support for Vision Zero (there was general support for this approach), the importance of robust data to inform decision-making, and the need to address the safety of vulnerable road users, including children, pedestrians, and cyclists. There was a strong interest in focusing on schools, early childhood centres, and community gathering places.</p> <p>Effective education, communication, and health promotion were seen as crucial for growing community understanding. Consistency in language and messaging was emphasised as important for ensuring clear and understandable communication. Participants highlighted the need to balance safety interventions and infrastructure with the impact on journey times for commuting, commercial interests, and emergency services.</p> <p>The workshops provided an opportunity to refine the engagement process, and feedback from participants was used to improve subsequent engagement, ensuring a more effective and inclusive approach.</p> <p>Monitoring of community attitudes – Research was undertaken to test understanding of support speed limit change. This was very useful, allowing tailoring of key messages to ensure that the community was better informed, based on evidence.</p> |
| <p>Outcomes</p> | <p>As identified above, a broad range of stakeholders need to be involved in speed reduction interventions. This includes direct engagement with individuals and community groups, but it also involves key stakeholder groups including health agencies and advocates, police, local government, mana whenua (Māori tribes), NGOs, academics, community representatives and consumer interest groups.</p> <p>In May 2023, the Auckland Regional Transport Committee adopted the draft version of the Auckland speed management plan 2024-2027 and presented this for public consultation from 2 July to 28 August 2023. Changes were endorsed in December 2023 following public consultation. The latest evaluation for the speed limit changes in Auckland since June 2020 identified that there has been 44% fewer fatalities in the locations where speed limits have changed, compared to what would be expected if no changes had been made (Abley 2024).</p> <p>In December 2024, Auckland Transport won a Prince Michael award in road safety for their outstanding achievements in road safety through the implementation of its Safe Speeds Program. This is one of the most prestigious international road safety awards, and is judged by a panel of international experts.</p> |

3.4 Proven initiative 4: The importance of governance, coordination and co-benefits

Brief description of the initiative

Road safety does not exist in a silo. Better outcomes can be achieved through coordination, and the joining together of different policy objectives. Road safety initiatives may be adopted more readily if they are part of an integrated strategy involving a broad group of stakeholders.

Benefits of the initiative

Addressing road safety in isolation, particularly in cities and urban areas, can lead to several challenges and unintended consequences. This occurs because road safety is intricately linked to broader urban mobility, environmental, social, and economic priorities. Outcomes from lack of coordination can include:

- siloed decision-making and neglect of broader goals
- potential for unintended consequences
- contradictory policies
- missed opportunities for co-benefits
- poor understanding of broader impacts, leading to difficulties convincing about required change
- inefficient resource allocation
- failure to address root causes.

Integrating road safety into broader urban planning and sustainable mobility strategies can address many of these issues. It is important that when managing road safety outcomes, broad engagement occurs to maximise co-benefits.

Governance involves the systems, institutions, and processes by which a country, state, or organisation operates, is controlled, and is held accountable. Good governance involves developing the institutions, processes, and practices to best ensure delivery of solutions to collective challenges. Thus, governance, coordination, and accountability are fundamental to strong road safety delivery. For example, well-established interdepartmental and multisectoral partnerships have been critical to road safety advances in the leading countries Norway (Elvik and Nævestad 2023) and Sweden. Without coordination and governance of the many partner delivery agencies by the lead agency the implementation of interventions will not occur.

Good governance in road safety is crucial for ensuring accountability, efficient use of resources, and transparency in decision making. It fosters collaboration across sectors, relies on data for informed decisions, and supports sustainable, long-term efforts.

Core requirements for coordination and co-benefits

An effective lead agency with strong governance, convening, guidance, and funding powers combined with delivery partners who are also well funded and committed to road safety and the directions of the lead agency can deliver a broad range of government priorities.

1. **Clear road safety governance:** There is a clear system of governance with the right level of institutional structure and specification of roles and responsibilities to ensure transparency and effective accountability for road safety delivery.
2. **Interdepartmental partnerships:** A strong partnership between government departments manages plans and responsibilities, ensuring co-benefits are considered and evaluated, based on solid evidence.
3. **Regular coordination meetings:** An interagency committee meets regularly, with expert advice from the lead agency and decisions implemented. Only authorised decision makers from relevant organisations should attend meetings, with rare exceptions for delegation.
4. **Governance and transparency:** Partnerships are built on clear governance and transparency principles.
5. **Control and monitoring:** The lead agency oversees road safety delivery by partners, ensuring they have the necessary control, funding, and agreements (like MoUs and program guidelines) to guide and monitor progress.
6. **Accountability in decision making:** Coordination structures ensure accountable decision making at senior levels, with government and parliamentary systems in place to address road safety issues (e.g. Parliamentary Committees like Staysafe in NSW, Road Safety Advisory Council in Tasmania, etc.).
7. **Adequate resourcing:** Governance and coordination structures must be well-resourced, ideally with a secretariat to help align efforts across agencies for effective road safety outcomes.

Implementation considerations

To demonstrate the co-benefits of road safety, a variety of methods can be used. Data and analysis are key to showcasing the positive impacts of proven interventions. By comparing crash data including reductions in fatalities, serious injuries, and associated healthcare costs as well as health impact assessments can also be conducted to show improvements in public health outcomes. Additionally, economic cost-benefit analyses can be used to illustrate the savings in healthcare, insurance, and improved productivity resulting from road safety measures.

Case studies and comparisons offer practical insights into the benefits of road safety. Sharing success stories and before and after data from cities or regions that have implemented road safety measures provides tangible evidence of positive outcomes. This helps stakeholders understand and promote the real-world impact of these efforts and build momentum for further action.

Engaging with the public and stakeholders is crucial to demonstrating the broader benefits. Conducting, tracking and promoting community support for proven road safety initiatives can show how safer streets lead to improved quality of life and better health outcomes, such as increased physical activity. Public health surveys can further highlight these benefits by measuring improvements in wellbeing.

Collaboration with experts and stakeholders from various sectors is also vital. Partnering with urban planners, police, work health and safety, and other key stakeholders allows for the creation of evidence based evaluations that showcase the wide-ranging benefits of road safety. Consideration could also be given to using the independent expertise of government agencies such as Productivity Commissions, Audit Offices and Treasury Departments to quantify benefits of both road safety strategies and individual programs.

Safety performance indicators provide measurable data to track the progress of road safety measures and their co-benefits and drives accountability for achieving results. Tracking health, economic, and environmental outcomes, will ensure that road safety is having the intended effects and continue to improve upon them.

Table 3.4: The importance of governance, coordination and co-benefits – Key characteristics of the initiative

| Item | Description |
|---|--|
| Jurisdiction | Global, but originating in Europe: Sustainable Urban Mobility Planning (SUMP) |
| Pillar(s) involved | All |
| Road Safety Management aspects involved | Coordination, Results focus, Monitoring and evaluation |
| The problem addressed | Urban areas face a variety of mobility challenges including congestion, air pollution and greenhouse gas emissions, road safety, equity and accessibility and broader public health. A comprehensive, coordinated response if needed to bring about mutual benefits across policy areas. |
| Action | <p>The concept of SUMP was formalised by the European Commission in 2013 as a structured, integrated approach to urban mobility planning. While initially promoted in Europe, the framework has been adopted and adapted by cities worldwide. In July 2024, EU Regulations designated 431 cities as urban nodes and set out specific requirements for them including the adoption of a SUMP, along with the collection and reporting of data on urban mobility indicators (EU 2024). SUMP build on earlier principles of integrated transport planning, but emphasise sustainability, inclusivity, and cross-sectoral coordination. One of the key elements of SUMP is cooperation across institutional boundaries. EU (2020) guidance states that:</p> <p><i>‘The development and implementation of a Sustainable Urban Mobility Plan requires a high level of cooperation, coordination and consultation across different levels of government and between institutions (and their departments) in the planning area.’</i></p> <p>Key elements of SUMP include:</p> <ul style="list-style-type: none"> • Comprehensive assessment, including baseline analysis and modelling for future transport needs and outcomes. • Clear vision and objectives, including a shared vision and establishment of goals and a long-term implementation plan. • Stakeholder involvement, including engagement and coordination of public authorities, private sector stakeholders, NGOs, and residents. This is to help with acceptance for both the plan as the measures that will be developed and implemented. • Cooperation across institutional boundaries. • Use of integrated measures, including actions across all transport modes. • Implementation and monitoring. <p>SUMPs encompass a wide range of interventions, depending on the specific needs of a city. These might include development or upgrades to public transport systems and pedestrian and cycling infrastructure; demand management (including parking policy and motorisation management), improvement to safety, including through infrastructure design and speed management; and awareness campaigns to promote active mobility.</p> <p>Detailed guidance exists on planning and implementation of SUMP, including a Guidance note for high level decision makers (EU 2020) and detailed technical guidance. A topic guide has been prepared for road safety elements of SUMP in recognition that sustainability is not possible without safety, and that both real and perceived safety has a profound effect on modal choice.</p> |
| Outcomes | <p>The strength of SUMP is the stakeholder groups that are engaged. This can include government agencies (local and regional or national), transport operators, private sector stakeholders (including employers), NGOs, and residents. Participatory methods such as workshops, surveys, and public forums can increase inclusivity, and lead to greater acceptance by decision makers and communities, including for improved road safety outcomes.</p> <p>With a large number of SUMP in Europe and now elsewhere in the world, there are many examples of success stories. One such example comes from the city of Utrecht in the Netherlands. This city of 350,000 inhabitants adopted a SUMP in 2016. This included ten specific objectives, with action plans and interventions developed targeting cycling, pedestrians, urban logistics, clean mobility and road safety. Many of the interventions benefited road safety outcomes, but specific examples including reduced road space for motorised traffic (from 2 lanes to one in both directions) and speed limits reduced to 30 km/h. Cycle and pedestrian action plans were produced with the objectives to improve flow and road safety for cyclists; and to make walking a more appealing option for pedestrians. Other strategies included a mobility management program that targeted employers and commuters, and intensive engagement with neighbouring municipalities to facilitate provision for public transport.</p> |

Outcomes included improved provision for cycling, public transport and walking, demonstrated through increased satisfaction by residents and use of facilities. With safer walking and cycling facilities, and the introduction of 30km/h speed limits, crashes reduced by almost 40% between 2015-2021, while casualties reduced by almost 60%. With an expected growth in population in Utrecht, an updated SUMP was adopted in 2021. The basic elements from the 2016 SUMP were retained, but some additional enhancements were included.

Similar benefits have been documented across various SUMPs, while broader benefits have also been noted. Many of these benefits relate to improved coordination, and realisation of co-benefits. These include:

- Improved economic efficiency through coordinated planning that reduces redundancies and ensures optimal resource allocation. This can lead to a better return on investments and expanded project budgets from cross sectorial cooperation.
- Greater success of city plans and projects, through a coordinated approach covering all modes
- Public buy-in through transparent and inclusive planning processes build public trust and foster community support.
- Reduced project delays through better informed stakeholder groups
- Enhanced policy synergies through integrated approaches enable transport policies to support broader urban development goals, such as housing and public health.
- Better, safer and more liveable cities.

Figure 3.5: Key design steps for SUMP



Source: European Commission (2020).

3.5 Proven initiative 5: Responsibility, accountability, and political leadership to drive road safety performance

Brief description of the initiative

Road safety is a policy area where the outcomes are shared across multiple stakeholder groups. Road crashes have obvious impacts on the transport and health sector, but there are also impacts on other policy areas. Policies and initiatives are delivered by many stakeholder agencies, including activities undertaken by transport agencies, police, departments of education, justice, environment, and many others. Although the 'lead agency' for road safety management typically falls within transport agencies, there is a need for close coordination between many government agencies and other stakeholder groups in order to achieve desired outcomes.

Coordination is a critical role of the lead agency but given the number of different policy and delivery areas impacted, it can be challenging to ensure each agency is delivering as required. There is often a lack of accountability which makes effective delivery even more difficult.

Elected officials and senior government executives play a crucial role in road safety management because they have the authority to influence policies, allocate funding, and create the legislative frameworks necessary for effective road safety programs.

Benefits of the initiative

One way to address the issue of accountability is to allocate responsibilities and targets in a more focused way. Traditional targets in road safety, such as reductions in fatal and serious injury, are impacted by each of the different policy areas and activities and it is difficult to identify which actions are producing benefits. It is often difficult to see which actions are being delivered and to identify their distinct impacts. Several international jurisdictions have introduced more specific targets and deliver road safety activity through safety performance indicators and assigning responsibility for these indicators to government delivery. Jurisdictions also use greater transparency around delivery and the results obtained, holding review sessions on an annual basis.

Adopting this approach brings significant benefits in terms of clearer accountability. By breaking down the problem into smaller, more manageable components, it becomes easier to set specific targets and identify key indicators that are aligned with progress monitoring. This structure ensures that responsibility for road safety is clearly defined, making it easier to track who is accountable for each aspect of the initiative. Regular analysis of progress provides an ongoing assessment of performance, allowing for timely adjustments if needed. Furthermore, by presenting this progress in a public forum, key agencies are held accountable to both the public and stakeholders, ensuring transparency and fostering trust in the process. This accountability not only improves efficiency but also encourages greater commitment to achieving road safety goals.

Elected official and senior government executive leadership is essential in setting clear road safety goals, driving public awareness campaigns, and ensuring that road safety remains a priority within the broader political agenda. Elected officials can also foster collaboration between different government agencies and stakeholders, ensuring that resources are allocated effectively and that road safety initiatives are implemented across local, state, and national levels. Their support can help build public trust and ensure long term commitment to achieving road safety targets.

Core requirements for responsibility, accountability and political leadership

Delivery partners who are well funded and committed to road safety and the directions of the lead agency can deliver a broad range of government priorities. Elected official and senior government executive leadership will drive transformational change.

1. **Strong political will and commitment:** Political leaders must demonstrate a clear, sustained commitment to road safety. This can be enabled by providing regular briefings of evidence-based interventions that articulate the wide-ranging benefits of road safety reform and public support for these reforms.
2. **Road Safety Strategies:** Governments need to establish clear, comprehensive road safety policies, strategies, and evaluation frameworks. These should be aligned with international best practices, such as those outlined by the United Nations' Decade of Action for Road Safety and should be based on data-driven approaches.
3. **Accountability mechanisms:** Establishing effective mechanisms to monitor and assess road safety outcomes is essential. This includes holding elected officials, governmental bodies and other stakeholders accountable for their actions, with transparent reporting on progress toward safety goals. Governance mechanisms such as national, state and local government elected official and senior government executive meetings should routinely discuss and report road safety issues, action and progress.
4. **Sustainable funding and resource allocation:** Adequate and sustained financial resources are essential for implementing road safety programs and projects. Governments need to allocate funding for road safety initiatives, including enforcement, infrastructure improvements, education, and emergency response systems.

Implementation considerations

To improve road safety outcomes, it is essential to implement changes that focus on increasing capability and capacity within partner agencies, elected officials and senior government executives. This includes providing comprehensive training for relevant staff, including senior personnel, to ensure they fully understand what needs to be delivered, why it is important, and how to effectively apply the Safe System approach. The training should also emphasise the importance of adopting proactive strategies and moving away from victim-blaming mindsets. This requires leadership, sensitivity and collaboration. Adaptive leadership training will support personnel responsible for increasing accountability both vertically, horizontally and outwards from the lead agency. Regular governance mechanisms at various levels of strategic policy, implementation delivery and monitoring will support focused road safety effort between key delivery partners.

Table 3.5: Responsibility and accountability to drive road safety performance – Key characteristics of the initiative

| Item | Description |
|---|--|
| Jurisdiction | Sweden |
| Pillar(s) involved | All |
| Road Safety Management aspects involved | Results focus, Coordination, Funding, Monitoring and evaluation |
| The problem addressed | Without clearly defined accountability for proven interventions against agreed metrics it will be difficult to determine where performance is not being achieved. There is good accountability and coordination for road safety delivery in Sweden through the use of safety performance indicators and transparency for public scrutiny of progress. A results conference is held each year, where progress towards targets is presented, and next steps formulated with actions by various stakeholders clearly defined. |

| | |
|-----------------|--|
| <p>Action</p> | <p>A road safety target was set by the Swedish parliament in 2009, to halve the number of road fatalities between 2007 and 2020, and decrease those seriously injured by a quarter. The Swedish Transport Administration has responsibility to manage overall collaboration in road safety, a role that was established in 2016 when the government adopted Nystart för Nollvisionen, the Renewed Commitment to Vision Zero. This approach recognises that road safety activity is based 'on collaboration, and continuing engagement and responsibility among the stakeholders involved is crucial to its success' (Swedish Transport Administration 2019a).</p> <p>Based on this revised approach, the Swedish Transport Administration's remit was adjusted to include the following tasks:</p> <ul style="list-style-type: none"> • Bring together the concerned authorities and stakeholders and hold a dialogue with them. • Lead an annual, detailed follow-up of the road safety situation that is of use for the concerned authorities and stakeholders in the planning and implementation of their operations connected with road safety. • When necessary, propose joint operational development in which individual stakeholders might improve road safety through cooperation with others. • Manage, develop and disseminate knowledge about Vision Zero as a safety philosophy. <p>The plan brought together key stakeholder groups (outlined below) to form the Group for National Vision Zero Cooperation – Roads (GNS Väg). This group provides the core basis for planning of road safety interventions within organisational activities. A Management by Objectives (MBO) approach was developed within the Group. A key part of this process is the use of performance indicators as shown in Error! Reference source not found.6, which outlines progress as of 2018. These indicators were developed to help set appropriate targets, and to monitor the implementation of activities as part of the action plan. Critically, the progress against these performance targets is presented annually in a public result conference. As part of this process, an independent group conduct an analysis of this progress against targets and present the findings in a report. Analysis of the numbers of fatalities and severely injured in 2018 was presented in the report 'Analysis of Road Safety Trends 2018' (Swedish Transport Administration 2019b). They also provide recommendations on evidence-based activities that could assist in improving safety outcomes in areas that are not performing well.</p> <p>Based on this analysis and a review process, a joint position paper is produced. This is signed by the key stakeholders, with groups of stakeholders tasked with developing actions to address key focus areas. There are clear expectations that progress on key focus areas will be monitored and form part of this review process in subsequent years. This three-step process is shown in Figure 3.7.</p> <p>As of 2021, the following stakeholders were included in the Group:</p> <ul style="list-style-type: none"> • Swedish Work Environment Authority • Folksam (a large Swedish insurance company) • City of Gothenburg • Ministry of Infrastructure • National Association for road safety promotion • Police Authority • SAFER (the Vehicle and Traffic Safety Centre at Chalmers University of Technology) • Swedish Municipalities and Regions • City of Stockholm • National Association of Swedish Driving Schools • Swedish Transport Agency • Umeå Municipality • Veoneer (Technology company focusing on active safety systems and self-driving cars) • The Swedish Transport Administration. |
| <p>Outcomes</p> | <p>Sweden has been highly successful in reducing road trauma since the adoption of Vision Zero. Part of this success can be attributed to taking a results-based approach, including the greater accountability for actions.</p> <p>Based on this Swedish initiative and other similar international examples, several Australian and New Zealand jurisdictions have taken a similar approach, especially in the use of SPIs. The New Zealand Road to Zero Strategy embedded a new results management framework to support effective monitoring and evaluation. The strategy also highlighted the need for regular public monitoring and reporting of performance indicators, and this was intended to ensure that appropriate progress was being made, and to facilitate changes where required. It was also hoped that the process would hold responsible agencies accountable when delivering on outcomes. The 2020 Ministry of Transport monitoring report included the following reporting framework (Figure 3.9) which was intended to drive action and hold relevant agencies accountable.</p> |

Figure 3.6: Progress towards road safety targets in Sweden

| Indicator | Starting point | 2018 | 2020 target | Trend |
|--|----------------|---------|-------------|--|
| Share of traffic volume within speed limits, national road network | 43 % | 45 % | 80 % | Not in line with the required trend |
| Share of traffic volume within speed limits, municipal road network (starting year 2012) | 64 % | 66 % | 80 % | Not in line with the required trend |
| Share of traffic volume with sober drivers sobriety in traffic | 99,71 % | 99,73 % | 99,90 % | Not in line with the required trend |
| Seat belt wearers in the front seat of passenger cars, share of total | 96 % | 99 % | 99 % | In line with the required trend |
| Share of cyclists wearing a helmet | 27 % | 42 % | 70 % | Not in line with the required trend |
| Share of moped riders using a helmet correctly | 96 % | 93 % | 99 % | In line with the required trend |
| Share of traffic volume with the highest Euro NCAP score | 20 % | 76 % | 80 % | In line with the required trend |
| Correct use of motor-cycles | - | - | - | Not measured yet, no target set |
| Share of traffic volume on roads equipped with speed limit above 80 km/h and median barriers and with speed limits above 80 km/h, national road networks | 50 % | 76 % | 90 % | Not in line with the required trend |
| Share of safe pedestrian, cycle and moped passages | 19 % | 27 % | 35 % | Not in line with the required trend |
| Share of municipalities with good-quality operation and maintenance of pedestrian and cycle paths [doesn't match Analysis report ²⁰¹⁸] | 18 % | 36 % | 70 % | Not in line with the required trend |
| Systematic road safety work in line with ISO 39001 | - | - | - | Not measured yet, no target set |
| Number of fatalities on the roads | 440 | 324 | 220 | Not in line with the required trend |

Source: Swedish Transport Administration (2019b).

Figure 3.7: Three step review process in Sweden

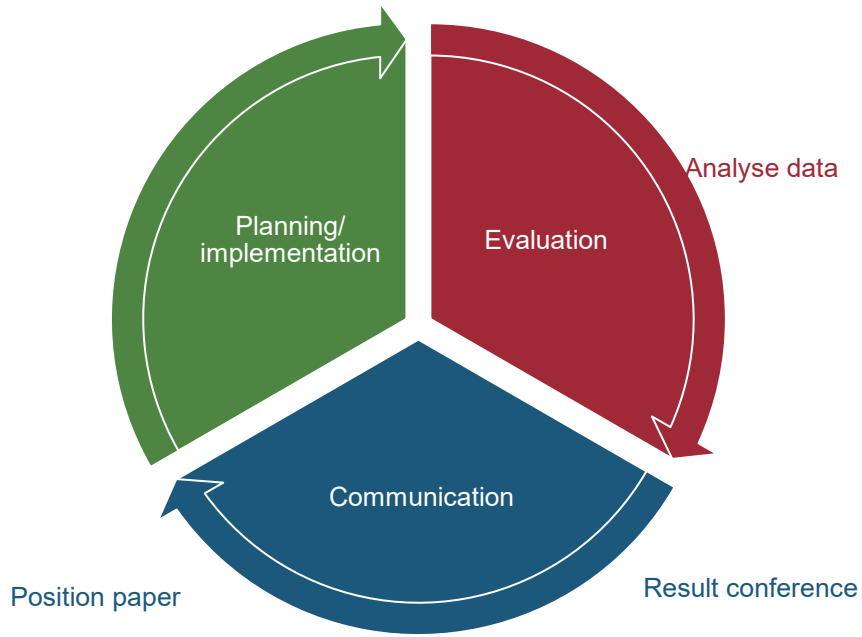
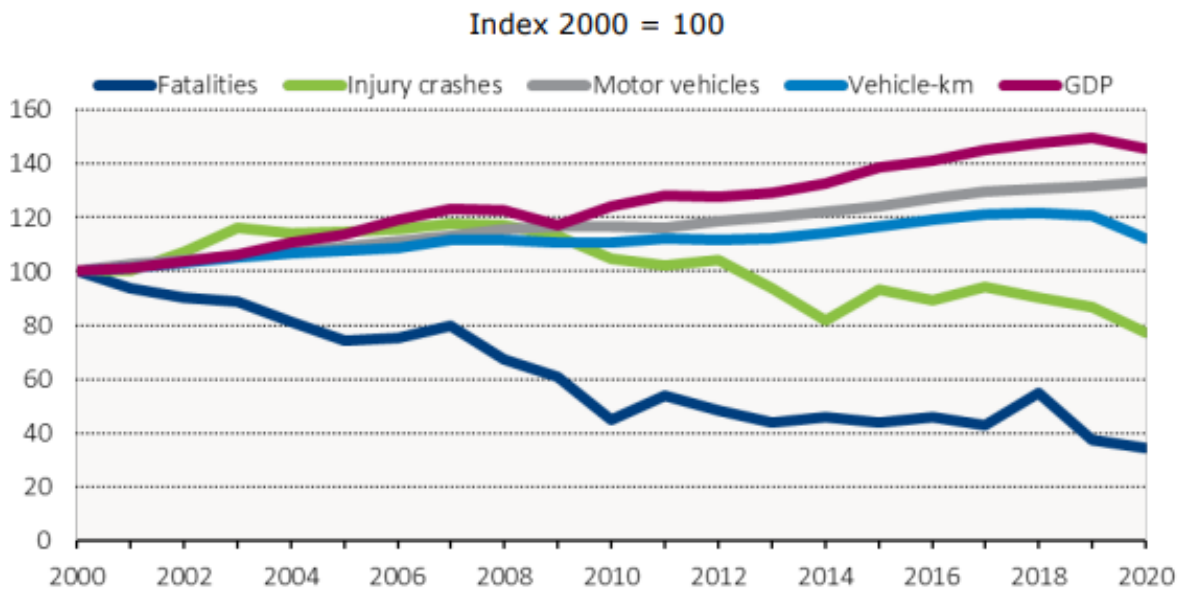


Figure 3.8: Reductions in road fatalities and injuries despite increased road travel in Sweden, 2000 to 2020



Source: OECD/ITF (2021).

Figure 3.9: Monitoring of indicators, New Zealand

| INTERVENTION INDICATORS | 2018/19 | 2019/20 | TARGETS |
|--|----------------|---------------------|------------------------------------|
| Kilometres of the network treated with new median barriers [#1.1.1] | Not applicable | 37km | 300km by 2024 1,000km by 2030 |
| Kilometres of the network treated with new Supporting Safe System interventions (including side barriers, rumble strips and wide centrelines) [#1.1.2] | Not applicable | 169km side barriers | 1,700km by 2024 4,000km by 2030 |
| Number of high-risk intersections treated to operate within Safe System limits [#1.1.3] | Not applicable | - | 600 by 2024 1,300 by 2030 |
| SAFETY PERFORMANCE INDICATORS | 2018/19 | 2019/20 | TARGETS |
| Percentage of VKT ⁹ on roads with speed limit above 80km/h that have a median barrier [#1.2.1] | Not available | 21.4% | 37% by 2024 41.8% by 2030 |
| Percentage of VKT on rural network that have a 3-star equivalent rating or better [#1.2.2] | Not available | 63.6% | 70.6% by 2024 77.4% by 2030 |
| Percentage of high-risk intersections treated to operate within Safe System limits [#1.2.3] | Not available | 1% | 25% by 2024 69.6% by 2030 |
| Network kilometres of roads adapted for safe pedestrian and cyclist use [#1.2.4] | Not available | Not available | - |
| Network kilometres of roads with motorcycling safety treatment [#1.2.5] | Not available | Not available | - |

Note: Network targets are for both state highways and local roads, but figures reported for the 2019/20 financial year are for state highways only. Local road data will be added for future reports.

Source: New Zealand Ministry of Transport (2021).

Table 3.6: Political leadership, default urban speed limit reduction in Wales – Key characteristics of the initiative

| Item | Description |
|---|--|
| Jurisdiction | Wales |
| Pillar(s) involved | Speed |
| Road Safety Management aspects involved | Leadership, Monitoring and evaluation, Research and development, Knowledge transfer |
| The problem addressed | <p>A number of highly beneficial road safety interventions are seen as unpopular by elected officials and senior decision makers. In some cases, this is based on perceptions which are not accurate, while in other instances, there are barriers to public and political acceptance that need to be addressed.</p> <p>Speed limit reduction is one intervention that is known to be highly beneficial (Austroads 2025b), but there are often barriers to change. Many of these barriers are based on false beliefs, or where there is some truth, the disbenefits are usually vastly overstated. Typical barriers include (GRSF 2024):</p> <ul style="list-style-type: none"> • Speed is not a significant safety issue, and reductions in speed will have limited safety benefits • Speed limit reduction will create a substantial increase in journey times or will cause congestion • Speed reduction will bring negative economic impacts • Speed reduction will be unpopular with the community. <p>All of these statements are false, and extensive evidence exists to refute these claims. However, these arguments are often used by a vocal minority and prevent decision makers from supporting required change. The recent experience in Wales illustrates this issue, but also the importance of leadership to support important road safety changes.</p> |

| | |
|---------------|--|
| <p>Action</p> | <p>In September 2023 the default urban speed limit in Wales was reduced from 30 mph (50 km/h) to 20 mph (30 km/h). Some of the relevant promotional material is provided in Figure 3.10.</p> <p>The change was met by significant vocal opposition. While this is not uncommon, especially for large-scale speed limit change, the public opposition to the change was greater than anticipated. This is possibly due, at least in part, to COVID-19 which resulted in reduced budgets available to properly explain the change to the public. It is also noted that there has been reduced public trust in health and science, and with restrictions of personal freedoms in Wales (The Lancet Voice 2024). In the lead up to the policy change, the largest petition in Welsh history was presented to parliament to oppose the change. With strong evidence and political support, the speed limit was changed and still stands. The strong political resolve was supported by a number of factors, and especially through the effective use of evidence to support change. This includes:</p> <ul style="list-style-type: none"> • Extensive research on impacts – safety but also climate and others • Reliance on opinion surveys and not popularity polls • Pilots prior to the main policy change • Monitoring and rapid evaluation and dissemination of interim outcomes • Adjustment in policy based on monitoring and feedback <p>Each of these factors are explained further in the section below.</p> <p>Evidence on impacts – Although Wales was the first country to introduce a default 20 mph speed limit, there is a strong history of targeted use of 20 mph speed limits in the UK, and a strong evidence base regarding the safety impacts. A study by Jones and Brunt (2017) captured the expected road safety benefits as well as the broader improvements in Wales, including in air quality, active travel, noise pollution, greater social inclusion, greater community cohesion and local business viability. These results, produced by public health professionals, gained greater credibility by being published in a scientific journal (The Lancet Voice 2024). In addition, a 20 mph Task Force Group was formed in May 2019 by Lee Waters, the Deputy Minister for Economy and Transport at the time. This group produced a comprehensive, evidence-based report based on wide consultation, and containing recommendations for the change including evidence of impacts (Government of Wales 2020). In addition, this evidence was provided in the form of Frequently Asked Questions (FAQs) on the Welsh Government website making it more accessible to members of the public.</p> <p>Opinion surveys – As highlighted above, a large petition was presented in opposition to the change. More than 430,000 people signed the petition, or around 14% of the entire population. In an interview at the time of the speed limit change the responsible Minister indicated that government were taking the petition seriously, but that they were also reviewing the outcomes from surveys, which are likely to better reflect public sentiment. At the time of change (noting that this is before the results of benefits were released) more people supported the speed change than opposed, although there was still sizeable opposition. It is noted that historically in the UK, around 70% of survey respondents are in favour of 20 mph speed limits for residential streets, while only 14% oppose these limits (Department of Transport 2019).</p> <p>Pilot implementation – Prior to the 20 mph policy change, pilots were undertaken in 8 communities across Wales, based on recommendations from the 20 mph Task Force Group. Monitoring data from these pilot locations identified positive changes in speed reduction and attitudes to active travel, no discernible changes in local air quality and slight negative changes on journey times. The indications of positive impacts based on these pilot locations provided confirmation of results gathered by the 20 mph Task Force, and gave additional confidence in the likely benefits from change.</p> <p>Monitoring and early evaluation – Just over a week after implementation, an independent research company published a report with initial results from the policy change based on TomTom data (Agilysis 2023). This identified initial reductions in mean speed of 2.9 mph, compared to speeds prior to the policy change. These early results, only made available due to improved technology (the use of connected vehicle GPS data) provided early confidence in the change. Other more comprehensive results published since (provided below), continue to provide encouragement to political leaders and decision makers regarding this policy change.</p> |
|---------------|--|

| | |
|-----------------|--|
| | <p>Adjustment in policy – there was significant community opposition post change on some types of roads where the community believed a higher speed limit should prevail. This related especially for higher volume roads where there was an absence of vulnerable road users. Although there were exemptions for reducing speeds at such locations at the initial policy launch, there was little time for local government to fully review locations where the higher speed limit should remain. From April 2024, the Cabinet Secretary met with community groups, police, transport operators, emergency services and others to listen to concerns regarding speed limit change. The public were also given the opportunity to suggest where they believed changes should be made. In July 2024, revised guidance was published on exemptions, making it clearer where roads could remain at 30 mph. This engagement by political leaders, and adjustment in policy based on feedback and evidence is also useful in increasing public and political support for this change.</p> <p>A wide variety of stakeholder groups were involved in this change. A 20 mph Task Force Group was established to bring together key stakeholders. This group was chaired by an independent transport planner and engineer and governed by a Project Board with representatives from a wide range of public, private and third-sector organisations with an interest in the issue. Membership included 20s Plenty for Us, Confederation of Passenger Transport UK, Disability Wales, Federation of Small Businesses, Freight Transport Association, Fire and Rescue Service, GoSafe, Guide Dogs, Living Streets, Local Authority Regional Representatives, Police, Public Health Wales, Road Haulage Association, SUSTRANS, University of the West of England (Bristol), Welsh Government and Welsh Local Government Association. Discussions were also held with the Department for Transport, The Parliamentary Advisory Council for Transport Safety (PACTS), Transport for London (TfL), and motoring clubs (the RAC Foundation and the AA).</p> <p>A series of sub-groups was formed to advise on specific issues, with their recommendations being discussed by the full Task Force. Subgroups included i) Outcomes, Evaluation and Monitoring; ii) Legislation and Policy; iii) Promotion and Communications; iv) Exceptions, Engineering and Enforcement; and v) Modelling. In parallel, the Welsh Government commissioned the Wales Centre for Public Policy (WCPP) to identify interventions which should be used to encourage support and compliance for the new 20 mph limit.</p> |
| <p>Outcomes</p> | <p>The Welsh government’s leadership and persistence to implement change despite vocal minority opposition has led to major road safety, climate, and other benefits. The speed policy change was only introduced recently in Wales however the results from interim evaluations have shown substantial reductions in road trauma. The most recent monitoring report by the Welsh Government identified that on 20mph and 30mph roads, casualties reduced by 28% (489 fewer) for the period from October 2023 to June 2024 compared with the same period in the previous year. Waters (25 September 2024), in a statement to the Welsh Parliament highlighted that there were 6 fewer deaths in the first 6 months of the scheme. Waters (10 August 2024) also reported that this equated to a 55% reduction in deaths (from 11 to 5); a 23% reduction in those killed and seriously injured (from 101 to 78); and a 27% reduction in slight injury (from 409 to 299). Insurer ‘esure’ identified a 20% drop in reported “accidental damage claims” from its Welsh customers following the change, and has reportedly reduced insurance premiums based on these benefits. The Welsh government received a Prince Michael Award, one of the most prestigious global awards in road safety, in 2024 for this policy change.</p> <p>It is interesting to note that despite the (vocal minority) backlash in Wales, the government of Scotland is about to make a similar national change to urban speed limits. They will have learnt from the experience in Wales, and political leaders are fully aware of potential issues to manage.</p> |

Figure 3.10: Speed limit change material, Wales



Source: Government of Wales (2020).

3.6 Proven initiative 6: Road Safety Management role in policy implementation and evaluation

Brief description of the initiative

Successful policy implementation requires rigorous planning, implementation and evaluation. Leading road safety with a focus on results is the pivotal function in effective management and delivery. Implementing new road safety policies can be challenging, even if they are likely to be highly effective, and appear to be well supported by communities. Careful engagement and gathering of evidence is critical for successful implementation of proven policy interventions as illustrated in these case study examples from New South Wales of a Graduated Licensing Schemes (GLS) for young drivers, Random Breath Testing (RBT) for alcohol and evaluation of road infrastructure improvements in Nepal.

Benefits of the initiative

Effective implementation of proven policy interventions requires robust project management, effective coordination across delivery partners and the sharing of results to support broader adoption. Where national policy frameworks have been put in place, jurisdictions can leverage best practice evidence to justify a case for policy reform and adoption.

Evaluations of final outcomes are vital to ensure that the way interventions are being implemented is achieving intended results, and to allow refinement of implementation. Importantly evaluations should also be shared and promoted with key delivery partners, elected officials and the community to demonstrate the effectiveness of proven interventions. Independent evaluations of interventions/programs can also assist with building credibility and legitimacy of road safety interventions.

Core requirements for monitoring, analysis and evaluation of policy implementation

1. Fully funded processes for results focused, evidence based, and data driven selection, monitoring, evaluation, data collection, maintenance, analysis, reporting, and policy refinements should be incorporated within the lead agency, including the involvement of specialist data analysts.
2. These processes should be applied at all government levels, to all delivery agencies, include road safety management strategies, use milestones for SPIs and accountability, and have a mature road crash data system between transport and police agencies (Asian Development Bank 2023; Martensen et al. 2021, World Road Association 2019).
3. Injury data from the health sector should be regularly collected and provided to the transport sector for analysis, addressing gaps in serious crash data records, especially regarding cases not captured in police crash data (Mitra et al. 2021).
4. Systematic collection of exposure data and performance data should be implemented for accurate analysis and assessment of road safety.
5. Regular observational surveys should be conducted for behavioural issues, such as speeding, seatbelt use, and helmet use, to support road safety efforts.
6. In addition to evidence-based interventions, trialling and piloting new initiatives is also critical as nascent approaches that may not yet have solid evidence base but show signs of working in the field.

Implementation considerations

In road safety clear evidence exists for the efficacy of many interventions, in road engineering this often includes well established crash modification factors, and assessments in highly credible reviews of evidence (see, for example, Austroads 2024c; Turner et al. 2022). Nonetheless, particular applications of such interventions may be doubted, often leading to non-use of effective interventions: Decision makers commonly claim that ‘our country is different and thus evidence from elsewhere does not apply.’ In order to counter this view, the opposite broad claim is sometimes made: ‘The scientific evidence applies the same way everywhere.’ Both these generalised approaches are mistakes which hold back progress in road safety. Some evidence applies broadly, and some does not. It is important to determine what evidence applies and what does not. For example, the laws of physics dictate that lower speeds reduce crash occurrence as well as severity in all countries, and the human tendency to reduce behaviours, such as speeding, when they are punished (for example through vigorous enforcement) is common in all countries. However, campaign messages or required levels of penalty to change road user behaviour vary across countries, depending on belief, attitudes, the reasons for current behaviours, and the ability to pay fines (ADB 2024).

Similar claims of general differences are commonly made in Australia and New Zealand, including a broad view that Australia and New Zealand cannot learn from low- and middle-income countries (LMICs), or claims of differences between states and territories or across the Tasman Sea. Some specific claimed differences are correct and relevant to the particular intervention under consideration, while others are not. As above, greater care is needed to assess what could apply and what does not.

Even armed with information as described above, key decision makers may be unsure, and overall crash modification factors for various road engineering interventions will vary with the composition of the vehicle fleet. For example, some interventions (such as crash barriers) are more or less effective for heavy vehicles versus light vehicles versus motorcycles, and benefits also vary with speed of impact. As a solution, one key role of road safety management is to conduct rigorous evaluations within the relevant country in order to guide future decisions. These can be persuasive and can determine efficacy for the appropriate policy settings to be applied in a jurisdiction.

Table 3.7: Road safety management role in policy implementation – Key characteristics of the initiative

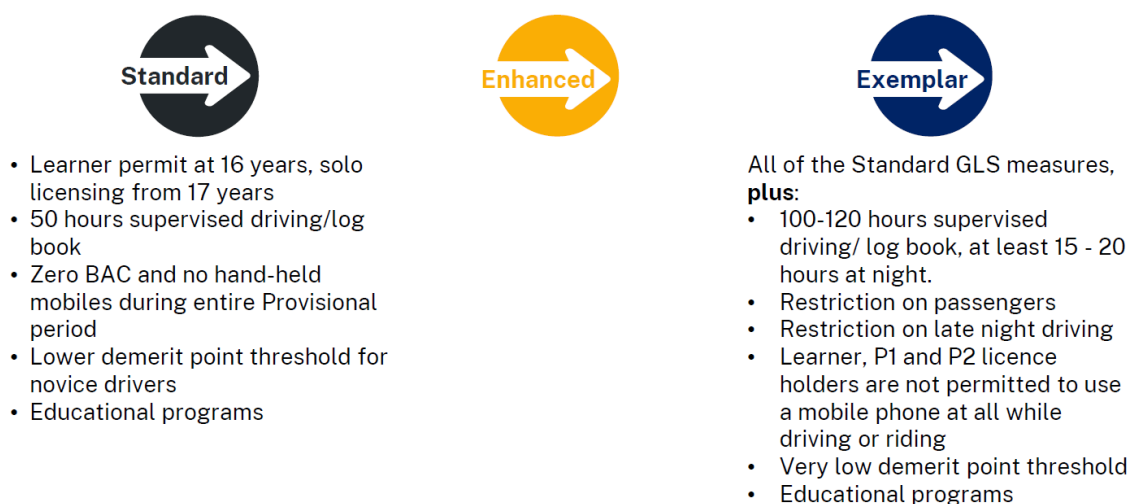
| Item | Description |
|---|--|
| Jurisdiction | New South Wales: Graduated Licensing Schemes (GLS) for young drivers and Random Breath Testing (RBT) for drink driving |
| Pillar(s) involved | Safer people |
| Road Safety Management aspects involved | Results Focus, Coordination, Legislation, Promotion, Monitoring and Evaluation, Research and Development, Knowledge Transfer |
| The problem addressed | <p>Road injury and death have many causes, and it is almost always the case that more than one factor is involved in a crash. It follows that there are multiple interventions that can be used to address road safety issues. Some of these are highly effective, while others have limited or even no impact on crash outcomes. Knowledge on the likely effect is critical if road trauma is to be addressed in the most cost-effective manner. In addition, some interventions have high levels of public and political support. Other interventions are less well supported by communities despite being highly effective, potentially resulting in implementation issues.</p> <p>Engagement and sharing of knowledge with communities on the importance and likely impact of interventions is an important part of implementation. This knowledge is equally important for decision makers, so that the most cost-effective interventions can be selected, and any associated implementation risks addressed.</p> <p>Australia and New Zealand have pioneered many highly effective road safety interventions, some of which have been adopted successfully internationally. However, the implementation of new interventions is not always a simple process. It requires an evidence-based approach, as well as effective supporting activities to assist with implementation.</p> |

| | |
|--------|---|
| Action | <p>It has long been recognised that young and novice drivers and riders have greater risk of road injury.</p> <p>There are many reasons for this increase in risk, including (TfNSW 2014):</p> <ul style="list-style-type: none"> • the nature of adolescent brain development which effects a young person's cognitive and perceptual skills • lack of driving experience • poor ability to anticipate, perceive, identify and, therefore, react to hazards • failure to recognise and assess risk as well as a propensity to take intentional risks • the higher value placed on risk-taking by young drivers than drivers aged 30 years or older (Prabhakar et al. 1996), combined with the general propensity to be over-confident and over-estimate their driving ability leads to more risk-taking behaviour by young road users. <p>Provisions for learner drivers have existed in Australia and New Zealand for decades. In 1964, Victoria introduced additional provisions for new drivers, including licence suspension or cancellation for various offences. This intervention was soon followed by other jurisdictions, including NSW. Faulks and Irwin (2009) identified that a 'rudimentary' GLS came into effect in NSW in 1966, with a focus on identification of novice drivers through display of an 'L' or 'P' plate to allow enforcement of restrictions including a lower speed limit, and compulsory carriage of a licence. The introduction of these requirements was based on the knowledge of higher risk, as well as research on some of the causes of this additional risk. For example, the introduction of GLS in New Zealand is reported to be based on research from North Carolina that identified higher risk for new drivers at night, and when there were peer passengers in the vehicle (Faulks and Irwin 2009).</p> <p>Revisions in GLS requirements occurred incrementally over many years in various jurisdictions with Victoria developing the first of such significant reforms. These changes were based on the growing evidence of risks for new drivers, as well as knowledge on effective interventions. For example, in 2000, a three-stage licencing process was introduced in NSW. This included a learner phase (L) and 2 provisional phases (P1 and P2). Further enhancements have been made over time. Provisions in NSW (and many other states) include the requirement to display a licence status plate (e.g. L or P); mandatory supervised driving hours during the learner phase; zero tolerance for alcohol and other drugs; speed limitations (licence loss for any single speeding offence for P1 drivers, and any 2 speeding offences for p2 drivers); ban on phone use; and limitations on peer passengers.</p> <p>Based on evaluations of Australian practice, as well as overseas research, best practice guidance on GLS has been developed, produced by Transport for NSW on behalf of Austroads (TfNSW 2014). This guidance provides a thorough review of driver risks, as well as the mitigation strategies that are available as part of GLS. Recognising that different jurisdictions have different needs, a policy framework has been developed that includes 'standard', 'enhanced' and 'exemplar' GLS activities (Figure 3.11). Critically important was that this best practice guidance was endorsed by senior government officials and elected officials through what is now termed the Infrastructure and Transport Senior Officials' Committee (ITSOC) and Infrastructure and Transport Ministers' Meeting (ITMM). While this occurred over a decade ago it has proven a highly effective mechanism to share research and transfer knowledge about known policy settings for young drivers.</p> <p>Over many years jurisdictions have worked towards an exemplar model in graduated licensing that has resulted in significant numbers of young lives saved across Australia and New Zealand. Most recently Western Australia announced the 'Red plate, One mate' rule which introduced peer passengers restrictions for red-plate provisional drivers. This new legislation, which is referred to as Tom's law, was championed by a mother whose son was killed in an overloaded vehicle crash in 2021.</p> <p>A similar example comes from the introduction of Random Breath Testing (RBT) for alcohol in NSW in 1982. Despite significant campaigns on the risks of drink-driving at the time, 42% of deaths were from this cause (Job et. al 1997). Initial evidence existed on the benefits of RBT from a trial in Victoria. This research was identified by the team at the government road safety think-tank, the Traffic Accident Research Unit (TARU), who presented the idea for a trial to StaySafe (the road safety committee of New South Wales Parliament), who in turn recommended the adoption of RBT to government. The approach by government to refer the StaySafe Committee to investigate the problem and generate discussion with the community was an important leadership step in the introduction of RBT in NSW. Extensive groundwork accompanied the recommendation, including:</p> <ul style="list-style-type: none"> • a public survey, which indicated that the initiative would be popular with the NSW community • public debate with extensive news coverage facilitated by the StaySafe Committee • engagement with key partners especially the police • extensive policy consideration and advice. |
|--------|---|

| | |
|----------|---|
| | <p>The lead-up to the introduction of RBT enforcement was also important. The introduction of the public education strategy preceding the introduction of RBT was also highly effective, with warnings about the impending intervention resulting in a dramatic decrease in drink-driving deaths, even before the commencement of enforcement, with these reductions sustained and improved since then (Job 1988; Job et al. 1997). This case also highlights the value of enforcement itself in shifting community attitudes. Repeat surveys of the community before and after the introduction of RBT show that after its introduction, the community was more disapproving of drink-driving, with a steady shift away from seeing a drink-driver caught by police as 'unlucky' or 'stupid', to seeing such a driver as 'criminal' or a potential murderer' (Job 1988). Effective enforcement created the shift in community views which many years of campaigning on the risks of drink-driving had not created. For the perspective of political leadership, this case again highlights the importance of persistence to achieve success and support.</p> <p>The initial implementation was via a 'trial' over a 3-year period. This provided an opportunity to monitor the impact of the reforms and evaluate and report the evidence of the reform's effectiveness. There was a comprehensive evaluation after the 3-year trial period which confirmed the significant benefit of the intervention (Job et al. 1997).</p> <p>These 2 examples (GLS and RBT) highlight the significant supporting elements that are often required for road safety policy implementation, even when there is clear evidence of benefits, and strong public support. Strong road safety management, and especially leadership and coordination is needed to implement such change.</p> <p>Significant engagement with stakeholders is required for the successful implementation of road safety interventions. This makes the coordination role of lead agencies critical. In both of these examples there was extensive engagement with elected officials, senior government executives, key partners (especially police), research organisations, and the public.</p> |
| Outcomes | <p>Both the GLS and RBT have been highly effective since their introduction, with a number of evaluations highlighting the benefits. In NSW, the introduction of higher speeding penalties and peer passenger restrictions led to a 34% reduction in deaths involving novice drivers (Sakashita and Job 2015) and recent GLS initiatives have contributed to a 55% reduction in fatalities for new drivers (from an average of 94 deaths per year before the introduction of GLS to 42 in the last 5 years). This downward trend is shown in Figure 3.5. Similarly, RBT has been evaluated by a number of studies and found to be highly effective. In NSW, the percentage of fatal crashes involving drivers with illegal blood alcohol levels dropped by 12 percentage points, from 42% to 30%, with an estimated 1,500 lives saved from the time of introduction in 1982 up to 1994 (Job et al. 1997).</p> |

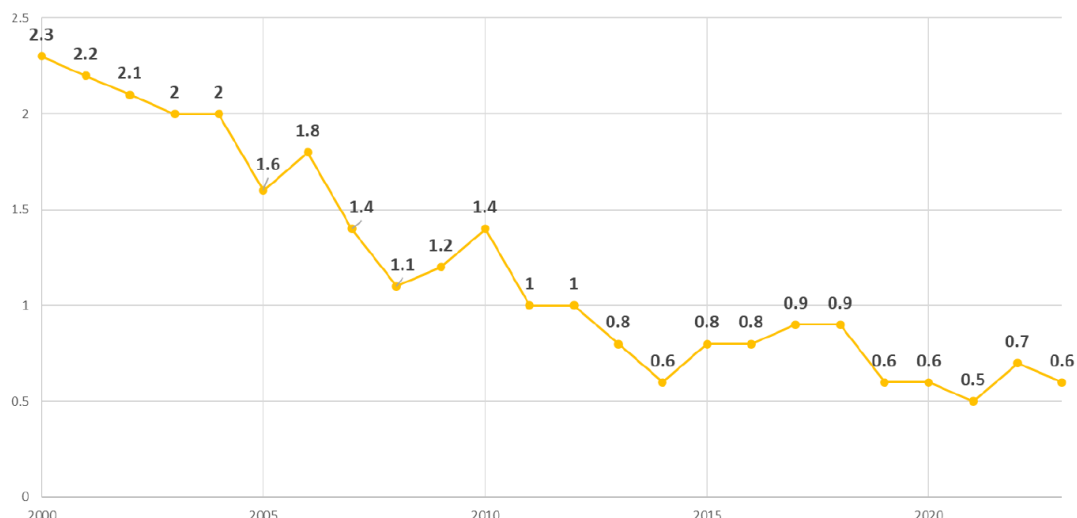
Figure 3.11: Australian GLS Policy Framework

Australian GLS Policy Framework



Source: Transport for NSW (2014).

Figure 3.12: Fatality crash rate per 10,000 learner and provisional licence holders, 2000-2023



Source: Transport for NSW (2024).

Table 3.8: Monitoring, analysis and evaluation – Key characteristics of the initiative

| Item | Description |
|---|---|
| Jurisdiction | Nepal |
| Pillar(s) involved | Safer roads |
| Road Safety Management aspects involved | Monitoring and Evaluation, Research and Development, Promotion |
| The problem addressed | Uncertainty on the road safety value of roadside guardrail barriers for Nepal was changed through an installation project that included a novel evaluation. The evaluation overcame limitation of crash data and powerful lifesaving benefits. This information was critical in subsequent acceptance of policy to install crash barriers on relevant future roads projects. |
| Action | <p>Nepal suffers around 4,600 crash deaths each year (WHO 2018). Mountainous roads in Western Nepal present high risk, with many multiple fatality crashes occurring each year through vehicles (including local busses) running off the road and plunging down steep cliffs. The Department of Roads had not adopted a policy of crash barrier installation, prior to the project described herein. The project involved installing 73,000 m of lifesaving roadside barriers on cliffside roads in Western Nepal (as well as building footpaths where pedestrians walked on the roads), with GRSF funding provided by UK Aid, and implementation managed by the World Bank. The barriers addressed 76 percent of identified high-risk locations selected from crash history, cliffside location, and road curvature. The work employed and upskilled many local Nepalese. It also included an outcome evaluation of the barriers (GRSF/World Bank 2020).</p> <p>In the absence of comprehensive crash data for Nepal, a novel method of evaluation was required. However, 2 key data sources were identified: First, along the target roads, the numbers of deaths per off-road over-cliff crash were available from local records; Second, it was possible to identify the number of off road crashes averted by the barriers, through counting the number of detectable vehicle-impacts into the barriers via counting the locations of crash damage from these impacts. Thus, it was possible to estimate the number of lives saved by the barriers to date.</p> <p>The following stakeholders were involved:</p> <ul style="list-style-type: none"> • World Bank, Global Road Safety Facility (GRSF) • Department of Roads (Nepali: सडक विभाग) under Ministry of Infrastructure Development and Transport • Ministry of Finance, Nepal • UK Aid. |

| | |
|----------|--|
| Outcomes | Based on the evaluation process described above, in the less than a year of the barriers being in place, 270 passengers (mainly on local buses) have been saved from crashes over the cliffs, of whom a substantial proportion would have been killed. With the expected 20-year life of the project 3,456 lives will be saved by these barriers, with a large number of serious injuries also saved (GRSF, World Bank 2020). In addition, these results were promoted to decision makers and were compelling in supporting a new (Nepal) Department of Roads policy to include roadside crash barriers on relevant new roads projects. This project won a Prince Michael International Road Safety Award. |
|----------|--|

3.7 Proven initiative 7: Supporting local government to deliver improved road safety outcomes

Brief description of the initiative

A significant proportion of road trauma occurs on local roads in New Zealand and Australia. Local government has a critical role in improving road safety outcomes and is a key delivery partner in effective road safety management.

Benefits of the initiative

Local government roads form the majority of the road networks of New Zealand (88 percent), Australia (82 percent) (Austroads 2020), and most countries, although the proportion of travel on these roads is less, it can still be high (around 50 percent in New Zealand: Austroads 2020). Vision Zero cannot be achieved without dramatic road safety improvements on local roads, yet over recent decades, road safety improvements on local roads have not kept pace with improvement on national and state roads (de Roos et al. 2010). In Australia less than 40% of travel occurs on local roads, yet over half of all fatal and serious injury crashes occur on these roads (McTiernan 2019).

Local government's role in delivering road safety is well recognised (Austroads 2021). Weak pedestrian safety improvements have been realised, a use predominantly associated with local roads (Job 2020). Many factors contribute to this weaker safety record: A generally lower standard of roads, with riskier intersection designs and alignment, narrow roads, closer roadside hazards, and behavioural issues including speeding and road user impairment (Austroads 2010). In addition, local governments are under resourced, underfunded, lacking appropriate skills and expertise to deliver road safety, and often applying an outdated approach to road safety (McTiernan 2019).

Local governments in Australia and New Zealand vary in their scale, resources and expertise. Funding and expertise is required to undertake the required shift away from business as usual in road safety – a critical barrier. Various state and federal level funding schemes exist, as do training and technical support program in some states. However, these are not sufficient for the dramatic changes required.

The powers of local government in managing safety on their roads varies significantly across Australia and New Zealand, especially in terms of the power to lower speed limits. In New Zealand local government are able to lower speed limits, while in most states and territories of Australia this is not the case. The road safety issues faced within local governments are also diverse, from metropolitan settings, to remove rural settings, as well as diversity of residents, their economic means, compliance, and modes of transport.

Finally, it is important to note that local governments are often well aware of the road safety problem in their local communities. They have close links to local communities, giving local governments an advantage in the engagement process when compared to state or national governments.

Core requirements for supporting local government to deliver improved road safety outcomes

Effective management of road safety by local government is highly dependent on funding, commitment by local elected leaders as well as effective coordinated support from national, state and territory governments.

1. Grants and funding needs: Additional funding is required for local government commensurate with the proportion of road trauma occurring on local roads. National, state, and territory governments should provide support for local government to more strategically manage road safety towards the Safe System approach and Vision Zero (Austroads 2019; Joint Select Committee on Road Safety, n.d.) as well as further explore opportunities to ensure grant funding can achieve other local government priorities including building resilience of the network, tourism benefits, improved liveability and access. This support must be accompanied by local government accountability for delivery of road safety.
2. Defined role for local government as a key partner and delivery agency: Governance structures, legislative approaches and accountability should be clearly defined to enable road safety action and recognise the critical role of local government.
3. Support for building capability, plans and strategies: This should include consideration of a broad range of support, including funding for implementation, data and analysis of trends, development of local strategies, expertise and training, networks/communities of practice, and mechanisms to share experience within local government networks, including solutions that apply specifically to local roads.

Implementation considerations

Local governments can be supported to improve road safety outcomes through a variety of mechanisms. Providing clear guidance on their role and responsibilities in road safety, along with access to grants and funding, is essential for enabling effective action. Support for building local government capabilities, such as training staff and developing strategic plans, helps ensure that road safety initiatives are well informed and well executed. Additionally, facilitating partnerships with state and federal governments, as well as other stakeholders like transport agencies and community groups, ensures a coordinated and collaborative approach. Offering technical assistance, crash data training and analysis, and best practice guidelines allows local governments to make informed decisions and implement proven road safety measures. By providing these resources and fostering strong collaboration, local governments are better equipped to create safer road environments and achieve meaningful road safety outcomes.

Local governments can improve road safety outcomes by working together through joint planning and strategy development, ensuring alignment with national and state goals. By coordinating infrastructure projects that deliver not only safety benefits, such as safer pedestrian crossings and cycle lanes, they can create more cohesive road networks across regions. Pooling resources for funding opportunities enables them to invest in critical road safety measures. Additionally, collaborating on public awareness campaigns can increase community engagement in safe road behaviours. Local governments can also work with other stakeholders, including state agencies, police, and advocacy groups, to leverage expertise and ensure a unified approach. Shared training and capacity building efforts help improve skills and the implementation of best practices, while coordinated enforcement of traffic laws can enhance safety across local areas. By joining forces in these areas, local governments can more effectively create safer, more sustainable communities.

Table 3.9: Bundaberg Regional Council – Key characteristics of the initiative

| Item | Description |
|---|--|
| Jurisdiction | Bundaberg Regional Council, Queensland |
| Pillar(s) involved | All |
| Road Safety Management aspects involved | Results focus, Coordination, Funding and Resource Allocation |
| The problem addressed | <p>Improving road safety performance requires effective strategy setting and planning, based on the Safe System approach. Strategies exist at global, national, state and local government levels. Strategies are often supported by Action Plans, which provide specific actions over a shorter period to assist in the delivery of the strategy.</p> <p>Some local governments have a road safety strategy or action plan, drawing on state-based targets, but identifying local activities that will contribute to meaningful safety improvements is critical if road safety targets are to be met.</p> |
| Action | <p>Bundaberg Regional Council in Queensland developed a Network Safety Plan (NSP) to help prioritise road safety activities across their road network (Ventor et al. 2024). NSPs were identified in the National Road Safety Strategy 2021-30 (Commonwealth of Australia 2021) and the National Road Safety Action Plan 2023-25 (Commonwealth of Australia 2023) as being a fit-for-purpose assessment tool for assessing risks on local government roads, enabling councils to contribute towards 2030 targets and the 2050 Vision. In the context of the National Road Safety Action Plan, NSPs are defined as “an assessment of the road safety risk across a road network supplemented by the assessment of benefits against the costs of specific road safety interventions to reduce that risk. The output of a network safety plan is an investment plan which can be budgeted for and implemented as funds become available”. This NSP approach is proactive, highlighting areas of highest risk, identifying interventions to address these risks, as well as prioritising these actions to fit within available budgets. This is particularly important given the limited budgets typically available to local government.</p> <p>A four-step approach was undertaken involving the following:</p> <ul style="list-style-type: none"> • Assessment of the network to provide council with information on the existing level of safety • Communication of councils desired future level of safety for the network, including the commitment to a vision of zero deaths and serious injuries by 2050 • Identification of gaps between the current state and the future state • Prioritisation of investment in road infrastructure to close these gaps. <p>A Movement and Place assessment and a review of Council’s road hierarchy were undertaken to identify current and future road use for all road users. Like many councils, a traditional road hierarchy existed, but to align to modern urban planning and design approaches, and to meet safety objectives, the Movement and Place framework was applied. Extensive data was also available on risks, with the recent completion of AusRAP (Australian Road Assessment Program) and ANRAM (Australian National Risk Assessment Model) assessments of Council roads giving good evidence on risk locations, and the road elements underlying these risks. A review was also undertaken of Council’s standard road cross sections to ensure that any new roads would achieve a minimum 3-Star rating. With the help of the National Transport Research Organisation (NTRO), a framework was developed to identify risks, gaps and then treatments, and produce a plan for improvements. The assessment helped identify gaps between current infrastructure standards and the desired end state. The benefits of Council’s NSP were measured using several key road safety metrics including fatal and serious injury crashes saved over the life of the treatment. The final output was a plan that allows the council to maximise safety benefits from road infrastructure investments under various funding scenarios</p> <p>Typical treatment costs were used to develop and cost a mass action programs of work. These included:</p> <ul style="list-style-type: none"> • Delineation (including lines, lane markers, hazard markers, guideposts, delineators, road studs and road signage) • Shoulder sealing/widening, lane widening • Roadside clearing/protection • Speed management (for low volume roads or roads where the posted speed limit is higher than the aspirational speed limit). • Intersection upgrades. |

| Item | Description |
|----------|--|
| | <p>A program was developed that could be adjusted based on funding and reprioritised by Council based on risk reduction and Benefit Cost Ratio (BCR). A sample of this Plan is provided in Figure 3.13. In this case, the plan is ranked by sections, with lowest cost per fatal and serious injury saved provided first. The program of works can be adjusted based on budget using this prioritised list.</p> <p>The stakeholders for Bundaberg Regional Council in the development of their NSP were primarily internal, and it was critical to build consensus and support for action.</p> |
| Outcomes | <p>It is still early in the implementation of the action plan from Bundaberg. However, in 2024, Bundaberg Regional Council was awarded the inaugural Yellow Ribbon Excellence Award for this work. Presented by the National Transport Research Organisation (NTRO) and Safer Australian Roads and Highways (SARAH) Group, the award recognises organisations that demonstrate excellence in road safety.</p> |

Figure 3.13: Sample Network Safety Plan, Bundaberg Regional Council

| Works program | Smoothed Section ID | Road Name | Length (km) | AusRAP Star Rating - Vehicle Occupants | ANRAM Fatal and Serious Injury Crash Rating | Length treated | Treatment cost | Treated AusRAP Star Rating | Change in AusRAP Star Rating Score | FSI crashes saved over life of treatment | Cost per FSI crash saved over life of treatment | Cumulative investment | Cumulative FSI crashes saved over life of treatment |
|------------------|---------------------|---------------|-------------|--|---|----------------|----------------|----------------------------|------------------------------------|--|---|-----------------------|---|
| Speed management | 557 | Sample road A | 0.9 | 1 star | Very High | 0.80 | \$ 800 | 3 stars | -15.86 | 3.09 | \$ 259 | \$ 800 | 3.1 |
| Speed management | 278 | Sample road B | 1.9 | 3 stars | Very High | 0.40 | \$ 400 | 3 stars | -0.92 | 1.13 | \$ 353 | \$ 1,200 | 4.2 |
| Speed management | 2514 | Sample road C | 1.9 | 1 star | Very High | 1.90 | \$ 1,900 | 2 stars | -16.09 | 3.88 | \$ 490 | \$ 3,100 | 8.1 |
| Speed management | 603 | Sample road D | 0.8 | 1 star | Moderate | 0.80 | \$ 800 | 4 stars | -24.59 | 0.78 | \$ 1,031 | \$ 3,900 | 8.9 |
| Roadside hazards | 144 | Sample road E | 1.1 | 1 star | Very High | 0.90 | \$ 203,000 | 1 star | -26.30 | 4.11 | \$ 49,385 | \$ 206,900 | 13.0 |
| Delineation | 143 | Sample road E | 1.1 | 1 star | Very High | 1.30 | \$ 51,800 | 1 star | -15.66 | 0.57 | \$ 91,222 | \$ 258,700 | 13.6 |
| Roadside hazards | 930 | Sample road F | 1.2 | 2 stars | Very High | 0.70 | \$ 104,000 | 2 stars | -4.88 | 0.71 | \$ 146,096 | \$ 362,700 | 14.3 |
| Delineation | 557 | Sample road G | 0.9 | 1 star | Very High | 0.90 | \$ 60,000 | 2 stars | -7.22 | 0.26 | \$ 230,417 | \$ 422,700 | 14.5 |
| Roadside hazards | 2514 | Sample road C | 1.9 | 1 star | Very High | 0.70 | \$ 258,000 | 1 star | -6.80 | 1.09 | \$ 237,349 | \$ 680,700 | 15.6 |
| Widening | 2462 | Sample road H | 0.2 | 1 star | Moderate | 0.60 | \$ 148,800 | 1 star | -37.52 | 0.33 | \$ 446,408 | \$ 829,500 | 15.9 |
| Delineation | 1993 | Sample road H | 0.8 | 1 star | Moderate | 0.90 | \$ 24,800 | 1 star | -20.56 | 0.05 | \$ 454,539 | \$ 854,300 | 16.0 |
| Intersections | 2610 | Sample road I | 3.1 | 2 stars | Very High | 0.10 | \$ 150,000 | 2 stars | -0.42 | 0.33 | \$ 454,931 | \$ 1,004,300 | 16.3 |
| Delineation | 2258 | Sample road J | 1.5 | 2 stars | Very High | 0.90 | \$ 36,600 | 2 stars | -3.03 | 0.08 | \$ 465,120 | \$ 1,040,900 | 16.4 |

Source: National Transport Research Organisation (2024).

3.8 Proven initiative 8: Evidence based road safety strategies and action plans

Brief description of the initiative

Strategy development is required for effective implementation and achievement of Safe System outcomes. Strategies need to be supported by Action Plans that outline the tasks required to meet strategic goals, and those responsible for these actions, while funding and coordination with key stakeholders, including members of the community, are required for implementation.

Benefits of the initiative

The delivery of significantly improved road safety performance, like any service being delivered, requires effective strategy setting and planning. Preparation of a road safety strategy and an action plan are a key recommendations of the expert World Report on Road Traffic Injury Prevention (Peden et al. 2004) and the World Bank Global Road Safety Facility (Bliss and Breen 2013). Strategies need to be supported by action plans that outline the tasks required to meet strategic goals, and those responsible for these actions, while funding and coordination with key stakeholders, including members of the community, are required for implementation. Strategies and action plans are required for all levels of government, and where possible should align across jurisdictions and avoid duplication.

In addition, evidence points to the value of setting Safe System based strategies to drive road safety management, accountability, and delivery (Elvik and Nævestad 2023; Mooren et al. 2011). Since the World Report on Road Traffic Injury Prevention, appreciation of the role of road safety strategies has grown, along with the value of targets, visions, and funding for strategies. In addition, strategies provide important opportunities for scoping and defining new policy and/or investment decisions in either technical safety interventions or wider system improvements. Development and implementation of strategies provide a valuable opportunity to bring key stakeholders together and reach joint agreement on desired outcomes and effective actions to achieve these. These also provide a time to engage with key decision makers within organisations and with elected officials on these objectives and actions. Community and advocacy group engagement is critical in building support for strategies and policy reform. Finally, strategies, plans, and their targets provide the base for the required results focus including required interventions and milestones for transparent measurement of progress and accountability.

Core requirements for effective strategy development and action plans

Effective road safety funding and resource allocation require the following features

1. Strategies and action plans must align: Action plans should align with strategies, covering 10-year strategies and 3- to 5-year action plans to reach Vision Zero.
2. Effective targets: Targets must be based on the Safe System approach, measurable, and include milestones, with global alignment to reduce deaths and serious injuries by 50%.
3. Evidence-based planning: Interventions should be selected based on effectiveness and data-driven analysis of existing challenges. Pilot testing and evaluation of developing opportunities is also useful where a robust evidence base has yet to be fully established.
4. Mid-term and final evaluations: Regular evaluations of strategies are crucial to assess road safety management and performance. Independent evaluations also build credibility, transparency and impartial reporting of performance.
5. Clear communication and engagement: Strategies must be communicated simply and deliberately and extensive engagement conducted with both key delivery partner, stakeholders and the community. This builds support for action and ownership of the road safety strategy and action plan.

Implementation considerations

Smaller jurisdictions often face resource limitations that can hinder the development and implementation of road safety strategies and action plans. These jurisdictions may have limited financial budgets, which makes it difficult to invest in critical infrastructure improvements, enforcement, or public education campaigns. The ability to access to large scale funding sources means that these jurisdictions may be limited in the ability to secure the necessary resources for road safety interventions. Furthermore, there may be a lack of specialised personnel or expertise in road safety planning, making it harder to design data driven strategies or evaluate the effectiveness of implemented measures.

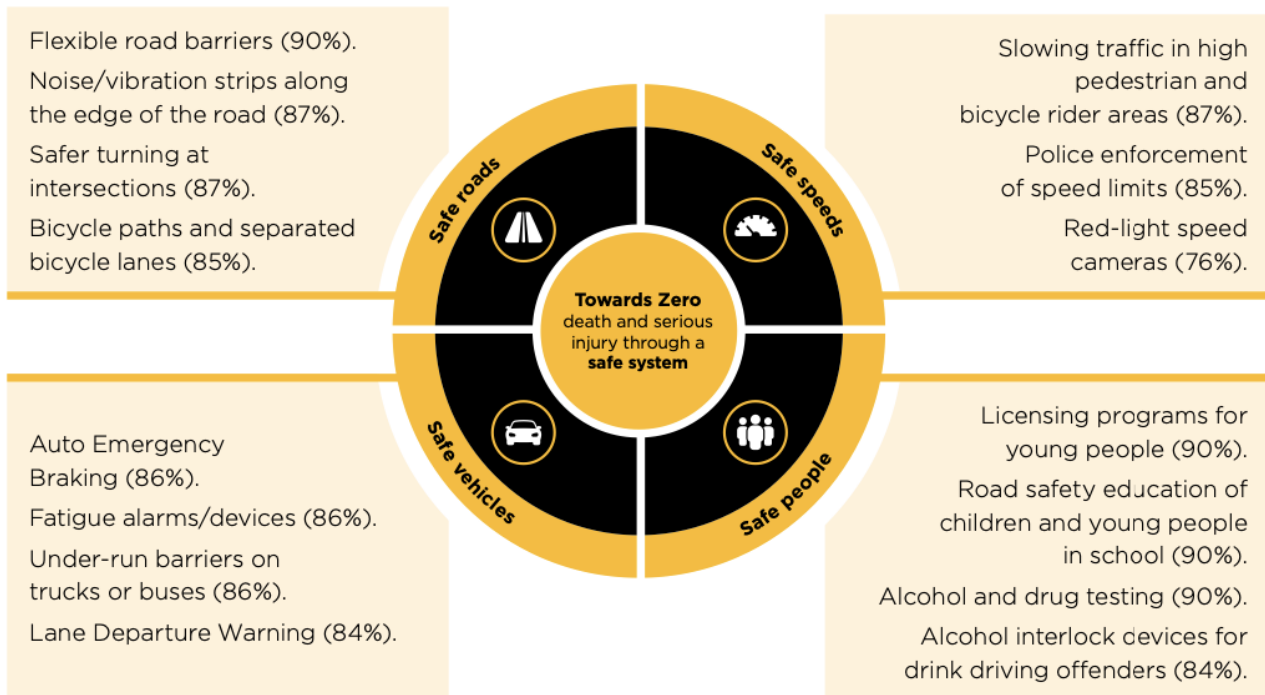
Smaller jurisdictions in Australia and New Zealand can leverage the expertise and processes of larger jurisdictions by adapting proven strategies and action plans tailored to their unique context. They can collaborate with national bodies and existing governance mechanisms such as Austroads and the Road Safety Task Force to access best practice guidelines, data analysis tools, and policy frameworks. Smaller jurisdictions and local government can also participate in cross-jurisdictional networks or forums where experiences and challenges are shared, such as the National Road Safety Partnership Program in Australia. Additionally, they can draw on successful road safety programs from larger jurisdictions, using scalable approaches that fit their size and resources, while seeking guidance on implementing measures like speed management, improved road design, and public awareness campaigns. By building partnerships and utilising shared knowledge, smaller jurisdictions can enhance their road safety strategies without having to reinvent the wheel.

Table 3.10: Evidence-based strategies and action plans – Key characteristics of the initiative

| Item | Description |
|---|---|
| Jurisdiction | New South Wales |
| Pillar(s) involved | All |
| Road Safety Management aspects involved | Results focus, Coordination, Funding and Resource Allocation |
| The problem addressed | <p>Improving road safety performance requires effective strategy setting and planning, based on the Safe System approach. Strategies exist at global, national, state and local government levels. Strategies are often supported by Action Plans, which provide specific actions over a shorter period of time to assist in the delivery of the strategy.</p> <p>The Global Road Safety Plan, developed by the World Health Organisation in partnership with other key stakeholders, calls for a 50% reduction in the number of road deaths and serious injuries by 2030. This outlines high level activity to help achieve this goal, including increased multimodal transport and improved land-use planning; improvements in road infrastructure and vehicle safety; measures for road user safety; and post-crash care. The plan also reiterates previously agreed voluntary performance targets.</p> <p>Australia has a national road safety strategy for 2021-2030 which commits to reducing the annual number of fatalities by at least 50 per cent by 2030, and to reduce the annual number of serious injuries by at least 30 per cent by 2030. These objectives align with a vision of zero deaths and serious injuries by 2050. The strategy is supported by Action Plans which span a shorter period (e.g. 2023-25). New Zealand's previous strategy, Road to Zero, set a vision where no one is killed or seriously injured in road crashes. In order to meet this objective, the strategy set a target to reduce deaths and serious injuries by 40 percent over the next decade.</p> |
| Action | <p>This case study highlights the approach used in NSW to develop the Road Safety Plan 2021. Importantly lessons learnt from the development of the Victorian Road Safety Action Plan were replicated in this approach highlighting the importance of knowledge sharing across jurisdictions</p> <p>In 2016 the Centre for Road Safety undertook the task of developing a new 5-year road safety action plan for NSW. Building on the methodology undertaken in the development of the Victorian Road Safety Action Plan (demonstrating on the importance of knowledge sharing across jurisdictions) a number of actions contributed to a stronger emphasis on a results focus and ultimately achieving the target set by the Plan.</p> <p>Development of the plan included modelling trauma reductions of proven road safety countermeasures across the Safe System pillars. This identified a suite of initiatives to engage with elected officials on proven countermeasures that were underpinned by a strong and robust evidence base. Regular (weekly) briefings with ministerial officers with direct access to ministerial advisers across the roads (both regional and urban) and transport portfolios ensured that there was accountability and transparency on the required actions to meet trauma reductions targets.</p> <p>For the first time this Plan also aligned the Towards Zero vision with Future Transport 2056, which set the goal of a NSW transport network with zero trauma by 2056. This was made possible by building capability of staff within the Centre for Road Safety on the backcasting approach and Safe System end states. This involved training/mentoring from experts in leading road safety jurisdictions in this process; building close partnerships between the Centre for Road Safety and the Chief Transport Planner, Transport for NSW; and the embedding of road safety staff in the development of the long-term transport master plan, Future Transport 2056.</p> <p>Extensive consultation occurred with a diverse range of stakeholders and the community ensuring that input and support was built for the suite of initiatives proposed. Stakeholder consultation included ongoing consultation with the NSW Government's Road Safety Advisory Council, 10 technical workshops with road safety researchers, experts and practitioners, consultation with local council representatives and the community through a series of community forums. A survey of over 2,800 people asking them which measures they felt were important in achieving the goal and vision. Community support for the initiatives was consistently high.</p> <p>The draft Road Safety Plan was released for comment in conjunction with Future Transport 2056. The long-term target was championed by the lead agency for road safety, Transport for NSW, with regular briefings with senior government officials, Ministerial advisers and Ministers about the approach to road safety strategy development and the results achieved by leading road safety jurisdictions using this approach.</p> <p>The development of the Plan was supported by a sustained and well-funded public education approach and the establishment of the Towards Zero brand campaign. This repositioned the NSW approach to road safety public education and included TV, radio, social media executions of the human impact of road trauma and the 'Man on the Street' campaign.</p> |

| | |
|-----------------|---|
| | <p>Development and implementation of the plan for NSW involved many stakeholders, including the Centre for Road Safety, NSW Government’s Road Safety Advisory Council, ministerial officers and advisers, road safety researchers, experts and practitioners, local council and the community, amongst others.</p> <p>The plan also involved the development and independent assurance of the Towards Zero Infrastructure Business Case requesting additional investment for proven infrastructure treatments. This included detailed modelling and cost benefit analysis for additional funding for road safety infrastructure treatments and consideration by Expenditure Review Committee. As a result, the budget for road safety was increased to \$1.1 billion for the life of the Plan, an increase of \$600 million, and with a benefit to cost ratio (BCR) of over 5:1.</p> <p>The Plan was launched by the Premier of NSW in partnership with the Minister for Roads, demonstrating political commitment to road safety and supported by extensive community and stakeholder support.</p> <p>Lastly, the Plan and its initiatives were implemented with strong governance arrangements put in place with key delivery partners responsible for delivering critical components of the Plan including Roads and Maritime Services, Local Government, the NSW Police Force and other key delivery partners. This included a commitment to annually report progress of the priorities in the Plan through the Annual Road Safety Progress Report which is a legislated requirement of the Community Road Safety Fund and is tabled in Parliament. These progress reports are made publicly available.</p> |
| <p>Outcomes</p> | <p>In 2021, NSW achieved the lowest road toll in 100 years, 275 fatalities which was 13 below the target set by the Plan. Community attitudinal surveys also showed that support for the adoption of vision zero had increased from 38% in 2016 to 83% in 2022, this has been attributed to a multi-phased large scale public education approach.</p> |

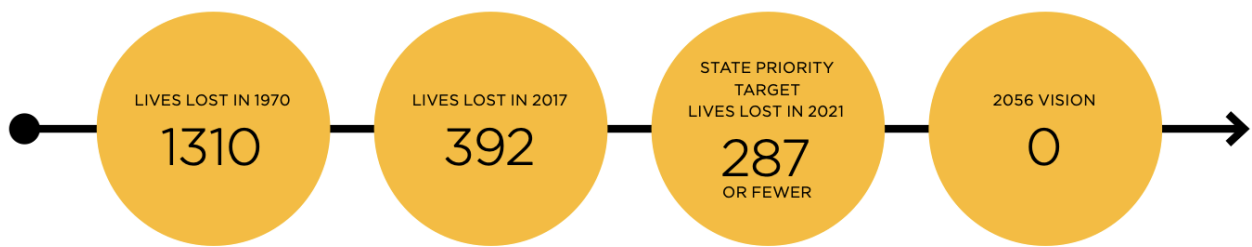
Figure 3.14: Level of support for different initiatives, NSW



In total, more than 4,000 people helped to develop the Plan, and a further 16,000 were engaged online

Source: Transport for NSW (2018).

Figure 3.15: NSW Road Safety Plan, 2021



Source: Transport for NSW (2018).

3.9 Proven initiative 9: Resource allocation and funding

Brief description of the initiative

Access to adequate funding is a critical part of managing effective road safety outcomes. Different models exist for road safety funding, but greater efforts are needed to increase this funding given road safety needs, and the highly cost-effective outcomes that can be achieved. Examples exist of substantive benefits that can be achieved through scaled up funding activity.

Benefits of the initiative

Funding of road safety is well recognised in global guidance documents as fundamental to success (Bliss and Breen 2013; International Transport Forum 2022; Peden et al. 2004), and in local documents ((Joint Select Committee on Road Safety 2025). Road safety interventions must be funded for delivery, as must the road safety management functions which ensure the selection and application of effective interventions. Funding must be sustainable and must be sufficient. Sufficient means enough to fund the interventions and processes they require to the level of delivery which will contribute to interim and Vision Zero targets by 2050.

Effective resource allocation involves employing a rational evaluation and programming framework to allocate resources to achieve the desired results focused actions. Resource allocation involves the development of a strong business case for road safety investments based on the evidence: cost-effectiveness and cost-benefit analyses (Bliss and Breen 2013; Infrastructure NSW 2018). It also involves the allocation of road safety resources across the lead agency and delivery partners based on the interventions required, and the level of them needed to meet the targets, with the lead agency playing a key role in funding and resource allocation (Hoey 2024). This requires detailed planning, costing, management and monitoring of expenditure, outputs and outcomes. Independent assurance of road safety business cases such as the NSW Towards Zero Infrastructure Program can also assist with building support for additional investment in road safety beyond existing levels of funding (Infrastructure NSW 2018).

Increasingly, as advanced countries progress towards embedding the Safe System approach and Vision Zero planning, models for predicting the required actions for funding become more important, including back casting processes (Hurtig et al. 2023; Truong et al. 2022, Austroads 2024d). This process in itself requires funding and capability building to implement.

Finally, possible sources of funding are relevant. Many sources of funding or financing for road safety have been identified (Austroads 2021; Wetteland and Lundebye 1997; Czapski et al. 2013). Some may have advantages beyond simply providing funding. For example, hypothecation of speed camera revenue to road safety funding has created the added benefit of less media objections to speed cameras as purely for government revenue. This is not unique to road safety – similar policies exist in other areas, such as addressing harm from gambling. However, this benefit may not be reliably delivered in all instances of hypothecation: strong communications and sound policies specifying road safety expenditure are required. No particular sources of funding are singled out as best practice. Rather, the key is sustainable sufficient funding for road safety.

Core requirements for funding and resource allocation

Effective road safety funding and resource allocation require the following features:

1. Funding model: Long-term, sustainable funding is necessary for continuous improvement in road safety, though government concerns about long term commitment are acknowledged.
2. Sufficient funding allocation: Funding must be sufficient to implement the required interventions and management functions to meet decade and Vision Zero targets.
3. Transparent investment model: A documented and described road safety funding and investment model is needed.
4. Informed allocation of resources: Formal resource allocation procedures should be in place to ensure adequate funding for interventions, considering the unique risks of rural versus metropolitan roads.
5. Clearly defined resource allocation: Resource allocation should define core road safety delivery by partner agencies. Formal resource allocation must include the ability to develop and communicate the business case for road safety, including cost-benefit analysis process, statistical values related to deaths and injuries, analysis to maximise total benefits, prioritise effective interventions and quantify co-benefits.
6. Quantifying co-benefits: The business case for road safety should highlight co-benefits of interventions, such as impacts on climate change, fuel use, air pollution, quality of life, noise, and social cohesion.

Implementation considerations

When allocating resources and funding to road safety, several implementation issues need to be carefully considered. First, ensuring long term, sustainable funding is crucial for maintaining and continuously improving road safety initiatives. Governments often face concerns about the long-term commitment of resources, which can hinder consistent progress. It is essential that the funding provided is sufficient to deliver the required interventions and institutional management functions, aligning with interim and Vision Zero targets while recognising the caution of central government treasury departments that can assign funds to sub optimal solutions and can be politically hard to reset.

A clear and documented road safety funding and investment model should be established to guide resource allocation effectively. Formal resource allocation procedures must also be in place to ensure funds are distributed appropriately, taking into account specific risks in rural areas compared to urban environments. This requires a comprehensive understanding of the core interventions necessary for road safety, as well as the capacity to build and communicate the business case for such investments. The business case should be based on sound evidence, such as cost-benefit and cost-effectiveness analyses, and should consider the broader impacts of road safety measures, including co-benefits like reductions in climate change, air pollution, and improvements in public health.

Maintenance funding for investment, particularly infrastructure investment, should be considered and quantified to ensure investments have enduring benefits. This will require transparent reporting of asset maintenance requirements of interventions.

The funding allocation process should be flexible enough to prioritise high impact interventions, ensuring that resources are targeted toward the most effective strategies to reduce road trauma and improve safety outcomes this could include specific criteria for funding programs to address specific crash problems (e.g. 80% regional, 20% urban investment).

Table 3.11: Resource allocation and funding – Key characteristics of the initiative

| Item | Description |
|---|---|
| Jurisdiction | Victoria |
| Pillar(s) involved | All |
| Road Safety Management aspects involved | Funding, Coordination |
| The problem addressed | <p>Road injury results in a significant societal cost, amounting to many billions of dollars per year globally. The most recent figures for Australia are that these costs equate to AUD27 billion per year (Steinhauser et al. 2022), while for New Zealand, the figure is estimated to be \$10 billion annually (MOT 2023). The funding requirements to achieve road safety outcomes are significant, and current investments are not adequate to address the issue. Increased funding is required by all jurisdictions, and given the significant benefits compared to costs, this additional funding can be highly cost effective. Various models exist for how road safety activity can be funded, including revenue from transport-related activity (traffic fines, levies on vehicle registration) or dedicated government funding.</p> <p>Not all investments in road safety activity are equal. In many cases, the returns on investment are highly beneficial, while in other cases, the benefits can be marginal, or there may even be no benefit at all. In order to ensure that limited available funding is expended in the most effective way possible, action plans need to be developed based on the evidence (see Turner et al. 2021), so that they maximise the investment across different road safety activities, including for road improvements, enforcement, communications and others. It is good practice to develop a business plan for specific investments, highlighting the cost as well as the benefit.</p> |
| Action | <p>The Victorian Transport Accident Commission (TAC) is a Government-owned entity, established under the Transport Accident Act 1986. Its role is to promote road safety, and to support those who have been injured on Victorian roads. TAC is funded through a charge which is part of the payment made by motorists when they register their vehicles each year and through investment income generated on reserves.</p> <p>In 2024 the annual component of vehicle registration for a passenger vehicle in a 'high risk' post code was \$573.10, down to \$446.60 in a 'low risk' post code. The cost for motorcycles was \$95.70 for less than 61cc engine capacity (regardless of post code) and up to \$686.40 for more than 500 cc in a high-risk postcode. Other costs apply for goods vehicles and other special vehicle types. Costs are automatically indexed by inflation (CPI) each year. Discounts of 50 percent apply for eligible pensioners, and there was no cost for eligible apprentices in 2024.</p> <p>The TAC operates under a 'no-fault' scheme, paying medical benefits and support services to anyone who is injured, regardless of who caused a crash. This includes all injuries that are the direct result of the driving of a car, motorcycle, bus, train or tram. This includes support for those injured in a transport incident as a driver, passenger, pedestrian, motorcyclist, or cyclist.</p> <p>Payments include income support while recovering, and a lump sum payment for serious and permanent injury. According to TAC (2025), an average of \$170,000 is paid out for each road death and an average of \$2.25 million for each serious injury such as traumatic brain and spinal injuries. The total cost to the Victorian community is significant, with compensation paid to over 43,000 people in the 2021/22 financial year, costing \$1.54 billion.</p> <p>The TAC has identified that improvements in road safety are a critical way of reducing the cost of compensation made to the Victorian community. The TAC works closely with key stakeholder partners including Victoria Police, the Department of Justice and roads agencies to achieve this outcome. Initiatives include campaigns to increase awareness of road safety issues, change behaviour and ultimately reduce the incidence of road trauma. They also include investments in road infrastructure improvements, and to support enforcement.</p> <p>The TAC has stringent criteria around the expenditure of funding to ensure the investments made are highly beneficial. These investments cover a variety of programs, including providing safe infrastructure, enforcement and education.</p> |

| | |
|----------|---|
| | <p>One substantial investment is a program of work to address regional road safety issues, and particularly lane departure crashes in high-speed environments. These involve head-on crashes, and vehicles running off the road, both of which can be of high severity, and were identified as a significant burden to TAC clients (McIntyre et al. 2023). To address this problem, investment was made under the TAC-funded Safe System Road Infrastructure Program (SSRIP), a partnership between the TAC and VicRoads. The TAC committed \$1 billion to the program over 10 years, with the objective of delivering safer roads infrastructure throughout Victoria, with VicRoads responsible for managing the projects. The SSRIP 'Top 20' Program provided safety barrier (roadside and median) or wide-centreline treatments on high-speed routes. Commencing in 2017, the program was undertaken by the Victorian Department of Transport and Planning and was completed in October 2022. The project was initially costed at \$340 million, with individual projects endorsed by a joint committee of VicRoads and TAC employees. The interventions were selected based on evidence of effectiveness. The business case identified likely benefits of up to 85 percent reductions in serious injury crashes, although this estimate of effectiveness varied by project. This and other investments substantially reduce the burden on the community from road trauma, and so investments create a positive cycle with lower costs to pay for injury and death, and so greater amounts of funding available for other activities.</p> <p>The TAC funding model was established with bipartisan support and with strong collaboration with delivery partners. The ongoing delivery of programs involves key stakeholders, including Police, Department of Justice, road agencies (VicRoads, Department of Transport and Planning) and others.</p> |
| Outcomes | <p>An evaluation of the flexible road infrastructure barrier program (McIntyre et al. 2023) identified significant benefits comparing the pre- and post- periods, with 77% fewer fatalities, 94% fewer serious injury claims (MAIS 3+1) and 74% fewer hospital bed days occupied.</p> <p>MAIS3+ refer to a 'Maximum Abbreviated Injury Score' of 3, on a scale of 0 to 6, where 0 equates to no risk to life, while 6 indicates almost certain death.</p> |

3.10 Proven initiative 10: Road safety is managed by both private and public sector organisations

Brief description of the initiative

The private sector, and in particular the management of safe work-related road use, represent vital opportunities for significant road safety improvements.

Road crashes are the single largest component of work related serious and fatal injury in Australia, New Zealand, and in many countries (including both private and public sector work). Even traditionally risky work environments such as mining have improved safety to the point that mining companies in Australia are addressing miners crashing on the drive to or from work, because this causes more deaths and serious injuries than the work at the mines themselves. Safe Work Australia data show that the road transport industry has the highest death rate per 100,000 of any industry in the country - higher than agriculture, construction or mining (Safe Work Australia 2021). Within the freight industry, a large majority of fatalities in Australia occur as a result of a crash, and most of these are single vehicle crashes (Safe Work Australia 2013, 2021).

Much of the commentary in this section may be applied to both public and private sector organisations. However, it is worthwhile to recognise the importance of the private sector in particular. The private sector represents a major component of business, life, and transport use in Australia, New Zealand, and globally. It can be powerful in enhancing road safety. The private sector is extremely diverse, with relevant roles in road safety varying greatly, as shown in the case study provided below.

Benefits of the initiative

Corporate sector roles in creating safe work-related road use

Managing heavy or light vehicle fleets – Safety is an increasing area of vehicle fleet management with various light and heavy vehicle companies real-time remotely monitoring with real-time interventions on vehicle speeds, fitness to drive, driver behaviour, and fatigue. For example, see the In-Vehicle Monitoring Systems (IVMS) for the Queensland's Coal Seam Gas industry (NRSPP 2018). However, some companies and heavy vehicle drivers also exceed maximum driving hours, and maximum weights, and according to BITRE (Bureau of Infrastructure, Transport, and Regional Economics) data for Australia, heavy vehicles are substantially over-represented in fatal crashes even on a distance travelled basis. Light vehicle fleet management is also increasing considering safety with developments such as policies banning any mobile phone use while driving, and consideration of safety ratings in fleet purchase policies (such as selecting the safest vehicle in its class, which may be 5-star NCAP rated vehicles with additional safety technologies that are known to bring safety benefits).

Influencing the manner of road use by employees while commuting, as well as during work – Relevant policies include selection of the safest routes and subsidised public transport for employees. Influencing the extent of road use by employees: Policies such as supporting on-line rather than in-person meetings, facilitating or allowing regular work-from-home arrangements, and the location of offices and other work near public transport are ways to reduce private motorised transport demand. Some private sector operators are leading strongly on organisational safety to a level beyond what is mandated, beyond ISO 39001, and beyond public sector operator practices. The National Road Safety Partnership Program website (<https://www.nrspp.org.au/>) provides additional case studies to review.

Private sector roles in provision of safer road systems

Vehicle safety design and manufacture – This encompasses features to meet mandatory Design Rules, to address ANCAP star ratings of safety, as well as ancillary features. Opportunities exist for vehicle manufacturers to provide as standard proven safety technologies (such as speed limiting ISA). The substantial purchasing power of companies also means that safety focused purchase policies by companies may also influence the safety features included by manufacturers.

The manufacture of safer roadside furniture – This is an increasingly important area of manufacture with standards set by governments.

The manufacture of effective enforcement equipment – The private sector is a key stakeholder in enforcement practices, including in the manufacture of various forms of speed camera, cameras for detection of other offences (non-seatbelt use, mobile phone use), breath alcohol screening devices, drug testing in saliva, etc.) Maximum reliability, ease of use, and efficiency in these devices are all important.

Government regulation, motivation, and monitoring of improved road safety delivery by organisations

Governments, and increasingly the private sector itself, have vital roles in improving safety in both the private and public sectors. There are 3 systemic mechanisms for motivating improved road safety by organisations. Regulations or laws which set road safety requirements for organisations, accreditation schemes, and incentives for improved safety. Voluntary Codes of practice also exist, though these have been strongly criticised (Driver 2015; Mooren 2016) and are not considered further.

Regulations or laws setting requirements for organisations on work related road use – Work, Health and Safety (WHS) regulations in Australia and New Zealand increasingly recognise the majority contribution of road crashes to work-related deaths and trauma across a broad range of industries. Transport regulations and acts are also important opportunities. WHS and transport regulations must directly address work-related road use (Mooren et al. 2014). Chain of responsibility legislation and specific regulations (Queensland Government 2008) are examples of effective legislative initiatives. Breaches of chain of responsibility duties in the Heavy Vehicle National Law in Australia have increased the focus of organisations on occupational road-use, including better management of driver fatigue (Ratu and Hetherington 2020).

Road safety accreditation schemes – Guidance and accreditation schemes for road safety management in companies may motivate as well as guide companies to improve their road safety management. Examples include the well-recognised ISO 39001 (the International Standards Organisation standard for road traffic safety: ISO 2012), and the FIA Road Safety Index (FIA n.d.). Many major global companies have ISO 39001 certification (for example Apple, Google, Spotify).

The FIA Road Safety Index is a rating system which guides organisations as well as providing a rating of their road safety management, again providing potential savings and promotional opportunities. It is based on ISO 39001 and requires organisations to provide evidence of high-level management engagement as well as demonstrating that they adopt evidence-based policies and practices. The FIA index has been applied by major companies, such as Total Energies which has a 3-star road safety rating.

Though less powerful than regulation, accreditation can provide guidance and incentives. Strong safety performance is good for business. There are motivations for companies to achieve these certifications, including helping the organisation to manage road safety risks, reducing operating costs and reducing insurance costs. Certification also has reputational value.

Providing direct incentives for improved safety. Incentives are feasible through government policies (as well as through policies by private sector clients), such as road safety requirements to be eligible for contract work, and increased registration costs based on crash history.

An additional issue for organisations and regulators is the use of private vehicles for the gig economy, especially for passenger and goods delivery services. This includes personal micromobility devices such as e-scooters and electric bicycles, though even if these are company supplied, they present growing safety challenges. The road freight industry has been characterised by high proportions of contractor work by owner-drivers, along with challenges of low pay, incentives to miss rest breaks and speed, driver fatigue, drugs and stimulants to stay awake, overloading, and long working hours (Mooren 2016; Peetz 2022).

Core requirements for improving engagement and participation of the private sector

1. Companies should improve the management of vehicle fleet safety for employees, drivers, passengers, and subcontractors: Key opportunities for improvement include real-time remote monitoring of vehicle speeds, risky driver behaviours, and driver fatigue.
2. Improved compliance: Stronger management should ensure compliance with seatbelt and helmet use, mobile phone restrictions, and driving/work hour limits. Fleet purchase policies should prioritize vehicles with high ANCAP safety ratings or include specific safety features like side under-run protection and blind-spot mitigation.
3. Mode shift policy: Companies can influence employee road behaviour through commuting policies and business travel practices. Sustainable travel policies, such as promoting online meetings and work-from-home arrangements, can reduce motorized transport demand.
4. Adoption of SPIs: Companies should monitor and be accountable for road safety progress using safety performance indicators.
5. Incentives, road safety accreditation schemes, and policies: Should be implemented to encourage businesses to improve road safety.

Implementation considerations

The private sector and businesses of all types are key stakeholders when addressing road safety risks. Work-related injuries represent a considerable burden for business and have a significant impact on communities. There are key actions that can be undertaken by the private sector and employers to help manage road safety outcomes.

Table 3.12: The role of the private sector, business and industry – Key characteristics of the initiative

| Item | Description |
|---|---|
| Jurisdiction | United Kingdom |
| Pillar(s) involved | Safer people, Safer vehicles |
| Road Safety Management aspects involved | Results Focus, Coordination, Legislation, Monitoring and Evaluation, Research and Development, Knowledge Transfer |
| The problem addressed | <p>Work-related road crashes account for about 40% of all occupational fatalities in Australia (Safe Work Australia 2024), and around 30% in New Zealand (Newton et al. 2013). This may well be an underestimate, as many incidents occur while driving for work in private vehicles (the ‘grey fleet’ and the gig economy) and so may not be recorded as workplace crashes. Work-related road crashes not only have a negative impact on those directly involved, but they also have a financial and reputational impact on organisations. Even a minor incident can prevent a company from operating effectively, with damage to vehicles and injury to those who operate them. Incidents can be highly disruptive to other road users, causing delays and substantial damage to infrastructure.</p> <p>The Stockholm Declaration 2020 called upon business and industry to:</p> <p><i>‘contribute to the attainment of the road safety related SDGs by applying safe system principles to their entire value chain including internal practices throughout their procurement, production and distribution process, and to include reporting of safety performance in their sustainability reports.’</i></p> <p>This declaration was endorsed by resolution of the UN General Assembly in August 2020 (UN Resolution A/RES/74/299 August 2020).</p> <p>Governments can take an active role in working with the private sector, including through regulatory requirements (e.g. vehicle standards, driver provision), providing guidance (including on safety management, vehicle fleet purchasing and operation etc.), and through their own purchasing power (contractual arrangements). Even local government with often more limited resources can help implement some of these approaches.</p> <p>Many larger companies have significant management processes in place to proactively address road safety as part of workplace health and safety obligations and activity. Some of these processes are highly developed, exceeding regulatory requirements because it is recognised that road safety is good for business. Private sector sometimes has a role in improving broader community safety through corporate social responsibility, funding initiatives such as road safety programs or even localised infrastructure improvements. Other companies, and especially smaller ones may be unaware of the risks from road transport activity or even their responsibilities.</p> |
| Action | <p>Between 2008 and 2013, 55% of cyclist fatalities in London involved a heavy goods vehicle, with a disproportionate number of these involving construction vehicles. In 2012 Transport for London (TfL) commissioned an independent review of the construction sector’s transport activities to understand the causes of these collisions and how they might be prevented. In response to significant safety issues identified in this report (Helman et al. 2013), TfL worked with industry to fund and develop a code of practice to improve road safety. As the owner of the €50 billion Cross-Rail project, TfL recognised it could use its contracts and purchasing power to ensure safety was embedded in project activity, but also to create a conversation between the various stakeholders affected. A key element of success were the connections formed between heavy vehicle operators, contractors, government and vulnerable road user groups.</p> <p>The construction logistics industry demonstrated clear commitment to change with support of this single common standard, ‘Construction Logistics and Community Safety’ (CLOCS; https://clocs.org.uk/wp-content/uploads/2024/11/CLOCS-Standard-v5.pdf). CLOCS is industry-led with the intent of changing how the construction industry manages road safety. This change occurs through specification of vehicle operation (including systems and vehicle routing), vehicle safety equipment and driver training, all developed in consultation with industry and vulnerable user representative groups. All of the activities were founded upon evidence and research.</p> <p>CLOCS includes an entire road safety management package, targeted at construction vehicle safety. This includes:</p> <ul style="list-style-type: none"> • Logistic operations requirements, including (CLOCS 2014): • Quality operations (demonstrated compliance), Collision reporting to reduce the likelihood of collisions, Traffic routing <p>Vehicle requirements, including:</p> <ul style="list-style-type: none"> • Warning signage, Side under-run protection, Blindspot minimisation, Vehicle manoeuvring warnings • Driver requirements: • Training and development, Driver licensing |

| | |
|----------|--|
| | <p>Construction client requirements:</p> <ul style="list-style-type: none"> • Construction logistics plan, Suitability of site for vehicles fitted with safety equipment, Site access and egress, vehicle loading and unloading, Traffic routing, Control of site traffic, Supply chain compliance • Each element of the program is supported by evidence and documentation, and the standard can continually evolve and improve based on new evidence. Following the initial investment by TfL to develop CLOCs, the program became self-sustaining in 2019. |
| Outcomes | <p>The success of CLOCs is that it is based collaboration. It was instigated by government (TfL) and championed by the London Mayor. During its development and implementation, it involved conversations between stakeholders, including heavy vehicle operators, contractors, government and vulnerable road user groups. Lastly, it was evidence-based, with support from a reputable third-party agency (Transport Research Laboratory, or TRL).</p> <p>Evaluations have identified the safety benefits of CLOCS, including a case study in Camden in London where there was a 47% reduction in fatal and serious injuries between HGVs and vulnerable road users in the first 2 years following the implementation of CLOCS (CLOCS 2019). The program has been identified as a world leading approach and has expanded beyond London due to its benefits, becoming the national standard in the UK. The program has expanded to other parts of Europe and now been adopted in Australia through the CLOCS-A program which follows the same model.</p> <p>There are many other examples of good management practice for private sector, including internationally, and in Australia and New Zealand. In many cases, industry is already self-regulating, with companies seeing the commercial and broader benefits from managing their safety outcomes. Further details of good practice examples can be found on the National Road Safety Partnership Program website (NRSPP.org.au).</p> |

4. Conclusion

Road Safety Management comprises a combination of functions, systems and processes designed to significantly reduce road deaths and serious injuries. It is the engine room of sustained improvement in road safety performance. The quality of management systems and processes in place – relating to accountability, governance, leadership, implementation and monitoring – determines the level of results which can be achieved in the short, medium and long term.

A systematic analysis of the literature in Workstream 1 of this project (summarised in Section 2 of this report) has largely validated what were regarded as best practice road safety management frameworks and principles over the last 20 to 30 years. These include the ethical and systematic based approaches articulated through Vision Zero, the Safe System approach and the road safety management framework prepared by the World Bank's Global Road Safety Facility.

This Austroads project aims to define how road safety management systems and processes need to be developed, implemented and improved as Austroads members and their key delivery partners take up the challenge of 4 years of consecutive increases in road fatalities and continue towards a safe road transport system. A foundational idea is that sustained improvement rests firstly on the quality of institutional management functions which design and develop and oversight delivery of interventions, and lead to the achievement of results. Critically an effective lead agency for road safety coordinates these functions and provides accountability and oversight of road safety management functions and processes.

The systematic review conducted in this project illustrates key research findings and practices for any organisation seeking to systematically increase the quality of its road safety contribution. These range from initiatives such as strengthening governance and coordination mechanisms through to developing, publishing and monitoring safety performance indicators and convening annual public forums to drive accountability and responsibility. The 10 proven initiatives and case study examples provide Austroads members with the opportunity to assess the quality of their road safety management systems and systematically improve them.

It is important to recognise that jurisdictions are at various levels of road safety management maturity and have different levels of resources and capacity to undertake the road safety task. One option could be to assess a jurisdiction's road safety management functions against the initiatives in this report and identify gaps, rectifying actions and prioritise them based on needs and resources. Similarly, Austroads members can utilise the actions in **Error! Reference source not found.** to identify where their jurisdiction would benefit from additional effort in strengthening their institutional management functions.

Road Safety Management is challenging and does not sit in isolation of other government priorities. Almost universally, road safety interventions produce other benefits for customers, the community and the private sector. A comprehensive and coordinated response is needed to bring about mutual benefits across policy areas. It is recognised that transacting road safety reform is a complex task, and there is not one formula for achieving results, but there are critical and proven management initiatives that will lay the foundations for success. It is important to remember that significant gains have been made in reducing road trauma in Australia and New Zealand. Today's challenge is to ensure that road safety efforts include a greater focus on the management systems and institutional settings required to drive high quality interventions. This will require key decision makers to understand and show leadership to generate much greater accountability for results. It is evident that an understanding of, and commitment to, a results focus is critical for Austroads member agencies in achieving improvements in road safety performance.

References

- Abley (2022), [*Safe Speeds Phase 1: 24 Month Interim Evaluation*](#), report to Auckland Transport, Abley Limited, Christchurch.
- Abley (2024), [*Safe Speeds Phase 1, Phase 2 and Phase 3 Interim Evaluation period ending December 2023*](#), Abley Limited, Christchurch.
- Agilysis (2023) [*Wales 20mph Impact Analysis: Independent analysis of vehicle speeds in the first week after the implementation of 20mph speed limits in Wales*](#), Agilysis, Windsor.
- Asia Development Bank (2023) [*Assessing the maturity of national road safety management systems*](#), Asia Development Bank, Manila.
- Asia Development Bank (2024) [*CAREC Road Safety Engineering Manual 7: Why and How to Manage Speed*](#), Asia Development Bank, Manila.
- Auckland Transport (2022a) [*Safe Speeds FAQ*](#), Auckland Transport website, accessed 10 July 2025.
- Auckland Transport (2022b) [*Auckland Transport Speed Management Plan: High Level Economic Assessment*](#), Auckland Transport website, accessed 10 July 2025.
- Austrroads (2010), [*Road Safety on Local Government Roads*](#), AP-R359-10, Austrroads, Sydney.
- Austrroads (2015) [*Safety Management Systems for Road Agencies ISO 39001 and the Next Step Towards a Safe Road Transport System*](#), AP-R496-15, Austrroads, Sydney.
- Austrroads (2019a) [*A National Approach to Measuring Non-fatal Crash Outcomes*](#), AP-R599-19, Austrroads, Sydney.
- Austrroads (2019b) [*National View on Regional and Remote Road Safety*](#), AP-R603-19, Austrroads, Sydney
- Austrroads (2020a) [*Integrating Safe System with Movement and Place for Vulnerable Road Users*](#), AP-R611-20. Austrroads, Sydney.
- Austrroads (2020b) [*Local Government Road Safety Management Guidance*](#), AP-R612-20, Austrroads, Sydney.
- Austrroads (2021) [*Guide to Road Safety Part 1: Introduction and The Safe System*](#), AGRS01-21. Austrroads, Sydney.
- Austrroads (2024a) [*Guide to Road Design Part 6: Roadside Design, Safety and Barriers*](#), AGRD06-24. Austrroads, Sydney.
- Austrroads (2024b) [*Guide to Road Safety Part 7: Road Safety Strategy and Management*](#). Austrroads, Sydney.
- Austrroads (2024c) [*Australian Road Assessment Program \(AusRAP\)*](#), Austrroads website, accessed 10 July 2025.
- Austrroads (2025a) [*Charting a Path to Eliminating Road Death and Serious Injury: Stream 2 - Zero Pathways*](#), AP-R743-25, Austrroads, Sydney.
- Austrroads (2025b) [*Facilitating Speed Management Change: Example Case Studies from Australia and New Zealand, AP-T381-25*](#), Austrroads, Sydney.

- Austrroads (2024d) [Guide to Road Safety Part 3: Safe Speed](#), AGRS03-24, Austrroads, Sydney.
- BITRE (Bureau of Infrastructure and Transport Research Economics) (2023) [Economics International road safety comparisons 2022](#), BITRE, Canberra.
- Bliss T and Breen J (2013) [Road Safety Management Capacity Reviews and Safe System Projects Guidelines](#), Global Road Safety Facility, Washington, DC.
- Commonwealth of Australia (2021) [National Road Safety Strategy 2021–30](#), Commonwealth of Australia, Canberra, accessed 7 July 2022.
- Cutello C A, Walsh C, Hanoch Y and Hellier E (2021) 'Reducing optimism bias in the driver's seat: Comparing two interventions', *Transportation research part F: traffic psychology and behaviour*, 78:207–217.
- Czapski R, Job RFS, McMahon K and Giemza J (2013) [Country report on Poland: Road Safety Management Capacity Review](#), World Bank, accessed 7 July 2025.
- Department of Transport (2019) [National Travel Attitudes Study: 2019 Wave 1](#), UK Department of Transport, London.
- Department of Transport (2024) [Call for submissions: Review of Road Safety Authority Consultation Response Document](#), Department of Transport, Dublin.
- Elvik R (2022) 'Vision Zero in Norway', in Edvardsson_Björnberg K, Hansson S O, Belin M-Å, and Tingvall C (eds), [The Vision Zero Handbook](#), 295–306, Springer, Cham.
- Elvik R and Nævestad T O (2023) '[Does empirical evidence support the effectiveness of the Safe System approach to road safety management?](#)', *Accident Analysis and Prevention*, 191:107227.
- Elvik R, Nævestad T O, Milch V, Bugge M, Endresen Normann H and Skogli E (2023) '[Innovation and long-term planning in public policy: the case of national road safety plans in Norway](#)', *Traffic Safety Research*, 5, e00030.
- EU (European Commission) (2020) [Decision makers summary for developing and implementing a Sustainable Urban Mobility Plan](#), European Union, accessed 7 July 2025.
- EU (European Commission) (2022) [SUMP for the city of Utrecht](#), European Union Urban Mobility Observatory, accessed 7 July 2025.
- Faulks I and Irwin J (2009) 'The Graduated Driver Licensing System in New South Wales', *Journal of the Australasian College of Road Safety*.
- Vigers B (15 November 2024), [Road accidents remain world's top perceived safety risk](#), *Gallup*, accessed 17 July 2025.
- GRSF (Global Road Safety Facility) (2020) [Global Road Safety Facility: Leveraging Global Road Safety Success Stories Vol 2](#), GRSF, World Bank, accessed 7 July 2025.
- GRSF (Global Road Safety Facility) (2025) [Speed management hub - FAQs](#), GRSF, World Bank, accessed 7 July 2025.
- Government of Wales (2020) [Welsh 20mph Task Force Group final report](#), Government of Wales, accessed 7 July 2025.
- Hayward W (18 November, 2024) '[Wales's 20mph speed limit saves lives and money. So why has it become a culture-war battlefield?](#)', *The Guardian*, accessed 7 July 2025.

- Healthy Auckland Together (2023) [Safe Speeds Scorecard Report](#), Healthy Auckland Together, accessed 7 July 2025.
- Hoey C (2024) [Eliminating Road Trauma. 2020 Churchill Fellowship to investigate how Sweden and leading European countries are eliminating road trauma](#), Winston Churchill Trust, accessed 7 July 2025.
- Hurtig P, Larsson P, Lindholm M, Rizzi M, Sternlund S, Elmqvist A L and Amin K (2023) [Analysis of road safety trends 2022: Management by objectives for road safety work towards the 2030 interim targets](#), Swedish Transport Administration, accessed 7 July 2025.
- Indecon (2024) [Review of the Road Safety Authority](#), report to Department of Transport, Indecon International Consultations, Dublin.
- Infrastructure NSW (2018) [Towards Zero Infrastructure Program Business Case Summary](#), Infrastructure NSW, accessed 7 July 2025.
- ISO (International Organization for Standardization) (2012) ISO 39001:2012, [Road traffic safety \(RTS\) management systems: requirements with guidance for use](#). ISO, Brussels.
- ITF (International Transport Forum) ITF (2022) [The Safe System Approach in Action](#), International Transport Forum, Paris.
- Job RFS (25 June 2020) '[Policies and interventions to provide safety for pedestrians and overcome the systematic biases underlying these failures](#)', *Frontiers in Sustainable Cities*, accessed 9 October 2025.
- Job RFS and Wambulwa WM (2020) '[Features of Low-Income and Middle-Income Countries making Road Safety more Challenging](#)', *Journal of Road Safety*, 31(3):79–84.
- Job RFS and Brodie C (2022) '[Understanding the role of speeding and speed in serious crash trauma: a case study of New Zealand](#)', *Journal of road safety*, 33(1):5–25.
- Job RFS, Truong J and Sakashita C (2022) '[The Ultimate Safe System: Redefining the Safe System Approach for Road Safety](#)', *Sustainability*, 14(5):2978, <https://doi.org/10.3390/su14052978>.
- Job S (2024) *Speed management in New Zealand: What works and what does not work*, Sydney, Global Road Safety Solutions Pty Ltd.
- Joint Select Committee on Road Safety (n.d.) [Driving Reform: final report for the Inquiry into Road Safety](#). Commonwealth Of Australia, Canberra.
- Jones S J and Brunt H (2017) '[Twenty miles per hour speed limits: a sustainable solution to public health problems in Wales](#)', *Journal of Epidemiological and Community Health*, 0:1–8. doi:10.1136/jech-2016-208859.
- Keall M D, Povey L J, and Frith W J (2001) '[The relative effectiveness of a hidden versus a visible speed camera programme](#)', *Accident Analysis and Prevention*, 33(2):277–284.
- Metcalf J (2023) [Effect of speed on emissions and air quality](#). Report prepared by Emission Impossible Ltd for Waka Kotahi NZ Transport Agency and Auckland Transport, May 2023. Revised September 2023.
- Ministry of Transport (2021) [Annual Monitoring Report 2020](#), New Zealand Ministry of Transport, Wellington.
- Ministry of Transport (2023) [Briefing to the incoming Minister \(Strategic\)](#), NZ Ministry of Transport, Wellington.
- Martensen H, Duchamp G, Feypell V, Raffo V, Burlacu FA, Turner B and Paala M (2021) [Guidelines for Conducting Road Safety Data Reviews](#), World Bank, Washington, DC.

- McIntyre A, Cavallo A, Arundell TP, Hattam R, Tredinnick C, Teal-Ireland R, and Schuster R (19–21 September 2023) '[TAC Clients' Injury Severity and Safe System Road Infrastructure Program](#)', [extended Abstract] *Australasian Road Safety Conference*, Cairns.
- McQuinn M and Whitwam B (October 2024) '[Safer Speeds on Rural Roads – A Systemic Approach](#)', [extended Abstract] *Australasian Road Safety Conference*, Hobart.
- McTiernan D (2019) '[Road safety-Is it a local government priority?: what does the experience suggest?](#)', *Journal of the Australasian College of Road Safety*, 30(1):46–53.
- Mitra S, Neki K, Mbugua LW, et al. (2021) '[Availability of population-level data sources for tracking the incidence of deaths and injuries from road traffic crashes in low-income and middle-income countries](#)', *BMJ Glob Health*, 6:e007296. doi:10.1136/bmjgh-2021-007296.
- Mitra S, Turner B, Mbugua LW, Neki K, Barrell J, Wambulwa W and Job S (2021) '[Guide to Integrating Safety into Road Design](#)', World Bank, Washington, DC.
- Mooren L, Grzebieta R, Job RFS and Williamson A (September 2011) '[Safe System – International Comparisons of this Approach](#)', *Australasian College of road Safety Conference*, Melbourne.
- Moyses, D (1-3 October 2024) '[Reducing WA's rural unzoned speed limit to achieve 2030 target](#)', [conference paper] *Australasian Road Safety Conference*, Hobart.
- New Zealand Government (2019) '[Road to Zero: New Zealand's Road Safety Strategy 2020–2030](#)', New Zealand Government, accessed 7 July 2022.
- New Zealand Government (2021) '[Road to Zero Annual Monitoring Report 2020](#)', Ministry of Transport, Wellington.
- Norwegian Public Roads Administration (2018) '[National Plan of Action for Road Safety 2018–2021: Short Version](#)', Statens vegvesen: The Norwegian Public Roads Administration, Oslo.
- NRSP (2018) '[In-Vehicle Monitoring Systems – Specification Standard](#)', National Road Safety Partnership Program website, accessed 9 October 2025.
- NRSP (n.d) '[Knowledge centre](#)', National Road Safety Partnership Program website, accessed 9 October 2025.
- NSW Public Service Commission (2020) '[The NSW Public Sector Capability Framework Version 2](#)', *NSW Public Service Commission*, Sydney.
- Peden M, Scurfield R, Sleet D, Mohan D, Hyder A, Jarawan E and Mathers C (Eds.) (2004) '[World Report on Road Traffic Injury Prevention](#)', World Health Organization, Geneva, and World Bank, Washington, DC.
- Peden M M and Puvanachandra P (2019) '[Looking back on 10 years of global road safety](#)', *International health*, 11(5):327–330.
- Phillips RO, Ulleberg P and Vaa T (2011) '[Meta-analysis of the effect of road safety campaigns on accidents](#)', *Accident Analysis and Prevention*, 43:1204–1218.
- Roberts IG and Kwan I (2001) '[School-based driver education for the prevention of traffic crashes](#)', *Cochrane Database of Systematic Reviews*, 3(CD003201). doi: 10.1002/14651858.CD003201.
- RSA (2021) '[Our Journey Towards Vision Zero Ireland's Government Road Safety Strategy 2021–2030](#)', Road Safety Authority, Ballina.
- RSA (2024) '[Road Safety Authority: Corporate Governance Board Manual](#)', Road Safety Authority, Ballina.

- Sakashita C and Job RFS (2015) '[Employing refined licensing conditions to reduce the serious crashes of young drivers](#)', *Journal of Local and Global Health Science*, 2015(2), 43.
- Sakashita C, Job RFS and Belin M-A (2022) '[Miscommunications based on different meanings of "Safe" and their implications for the meaning of Safe System](#)', Chapter in *The Vision Zero Handbook*, Bjornberg K E, Belin M-A, Hansson S O and Tingvall C (eds). Springer Link. [Springer MRW: \[AU:., IDX:\].](#)
- Sim P and Sherritt B (2019) [Vision Zero for Tāmaki Makaurau – A transport safety strategy and action plan to 2030](#), Auckland Transport.
- Small M, Jordan P, Anyala M, Shelton D and Stapleton R (2023) [Assessing the maturity of national road safety management systems](#), Asia Development Bank, Manila.
- Steinhauser R, Lancsar E, Bourke S, Munira L, Breunig R, Gruen R and Cox J A (2022) [Social Cost of Road Crashes](#), Report for the Bureau of Infrastructure and Transport Research Economics.
- Stipdonk H, Turner B and Job S (2022) [The Safe System Approach in Action](#). International Transport Forum, Paris.
- Swedish Transport Administration (2019a) [Action Plan for Safe Road Traffic 2019-22](#), Swedish Transport Administration, Borlänge.
- Swedish Transport Administration (2019b) [Analysis of Road Safety Trends 2018: Management by objectives for road safety work towards the 2020 interim targets](#), Swedish Transport Administration, Borlänge.
- Swedish Transport Administration (2021) [Analysis of Road Safety Trends 2020: Management by objectives for road safety work towards the 2020 interim targets](#), Swedish Transport Administration, Borlänge.
- The Lancet Voice (13 December 2024) Dr Sarah Jones, '[20mph speed limits and public health in Wales](#)' [podcast], The Lancet Group, Season 5, Episode 24, accessed 9 October 2025.
- Transport for NSW (2014) [Australian graduated licensing scheme policy framework](#), Transport for NSW, Sydney.
- Transport for NSW (2018) [Road Safety Plan 2021](#), Transport for NSW, Sydney.
- Transport for NSW (2022) [2026 Road Safety Action Plan: towards zero trauma on NSW roads](#), Transport for NSW, Sydney.
- Truong J, Strandroth J, Logan DB, Job RFS and Newstead S (2022) '[Utilising Human Crash Tolerance to Design an Interim and Ultimate Safe System for Road Safety](#)', *Sustainability*, 14, 3491.
- Turner B, Job S and Mitra S (2021) [Guide for road safety interventions: evidence of what works and what does not work](#), World Bank, Washington, DC.
- Venter M, Fulton D, McTiernan D and McLean E (30 September–3 October 2024) '[Network Safety Plan Process – Bundaberg Regional Council](#)' [conference paper], *Australasian Road Safety Conference*, Hobart.
- Victorian Department of Transport (2022) [Mornington Peninsula Safer Speed Trial Evaluation: Evaluation Summary Report](#) June 2022. Department of Transport, Melbourne.
- Wambulwa, WM and Job S (2019) [Guide for Road Safety Opportunities and Challenges: Low- and Middle-Income Countries Country Profiles](#), World Bank, Washington, DC.
- Waters L (25 September 2024) [Putting saving lives ahead of politics](#), [amanwy.blogspot.com](#) [blog], accessed 9 October 2025.
- Waters L (10 August 2024) [Rewire](#), [amanwy.blogspot.com](#) [blog], accessed 9 October 2025.

- Watson A, Watson B and Vallmuur K (2015) '[Estimating under-reporting of road crash injuries to police using multiple linked data collections](#)', *Accident Analysis and Prevention*, 83:18–25.
- White M J, Cunningham L C and Titchener K (2011) '[Young drivers' optimism bias for accident risk and driving skill: Accountability and insight experience manipulations](#)', *Accident Analysis and Prevention*, 43(4):1309–1315.
- World Health Organization (WHO) (2011) [Global Plan for the Decade of Action for Road Safety](#), World Health Organization, Geneva.
- World Health Organization (WHO) (2018) [Global status report on road safety](#). World Health Organization, Geneva.
- World Health Organization (WHO) (2004) [World Report on Road Traffic Injury Prevention](#), World Health Organization, Geneva.
- World Health Organization (WHO) (2024) [Global Status Report on Road Safety 2023](#), World Health Organization, Geneva.
- World Health Organization (WHO) and the United Nations Regional Commissions (2021) [Global Plan for the Second Decade of Action for Road Safety](#). World Health Organization, Geneva.
- World Road Association (PIARC) (2012) [Comparison of national road safety policies and plans](#), World Road Association (PIARC), Paris.
- World Road Association (PIARC) (2025) [Road Safety Manual](#), World Road Association (PIARC), Paris, France.
- Wilson C, Willis C, Hendrikz JK, Le Brocque R and Bellamy N (2010) '[Speed cameras for the prevention of road traffic injuries and deaths](#)', *Cochrane Database of Systematic Reviews* 2, 11(CD004607). doi: 10.1002/14651858.CD004607.pub4.
- York J (20 September 2021) '[Has reducing the French speed limit to 80km/h saved lives?](#)', *The Connexion*, accessed 9 October 2025.



Austroads

Level 9, 570 George Street
Sydney NSW 2000 Australia

Phone: +61 2 8265 3300

austroads@austrroads.gov.au
www.austrroads.gov.au