Glossary of Terms and Definitions

Fundamental definitions

Zero Harm: A safe road system in which no one is killed or seriously injured.

Serious Injury: An injury that threatens life and/or causes permanent or long-term impairment.

Network Safety Plan: Practical guidance for the design and implementation of a Zero Harm road transport system. It describes how to transform the road network and infrastructure to achieve Zero Harm while maintaining the essential functions of the road network. The plan considers speed limit setting and management, vehicle safety and technology developments, and road user behaviour.

NB: In the Austroads stakeholders survey carried out as part of the Charting a Path to Zero project, there was strong support for each definition, with 85% agreement on Zero Harm, 74% agreement on Serious Injury, and 72% agreement on Network Safety Plan.

Other definitions

Backcasting: A planning and modelling method that begins with the desired future safe road system (e.g. a 2050 Safe System end state) and works backwards to define the intermediate system states, countermeasures, investments and timelines (e.g. an Interim 2030 Safe System and the steps from today), rather than projecting current trends forward.

Blockers: Factors that constrain or delay progress towards Zero Harm —that is, eliminating road deaths and serious injuries. Examples include limited capacity and capability (particularly in local government), absence of clear frameworks or guidance, funding and resourcing constraints, weak public or political support for measures such as speed management, and practical challenges in implementing and maintaining Safe System-compatible designs.

Boundary Conditions: The critical operating conditions that must be satisfied for a countermeasure or system design to achieve its intended Safe System performance. These are typically expressed as limits on travel or impact speed, road layout, traffic composition, or user characteristics (e.g. excluding impaired drivers) and are derived from human biomechanical tolerance and vehicle performance.

Crash types: Standard categories used to describe common crash configurations (i.e., how a crash occurs). The examples below are included because these terms can be unclear to readers who are new to road safety terminology:

- Head-on: A collision where the front of one vehicle strikes the front of another vehicle travelling in the opposite direction (including partial overlap).
- Run-off-road: A crash where a vehicle leaves the carriageway and strikes an object (e.g., tree, pole, barrier) or terrain (e.g., embankment, ditch), or rolls over after departing the roadway.
- Rollover: A crash in which a vehicle overturns onto its side or roof, either as the primary event (e.g., loss of control) or following another impact (e.g., run-off-road or collision).
- Sideswipe: A collision where the sides of two vehicles make contact while travelling in the same direction or opposite directions, typically during lane changes, merging, overtaking, or passing.

Enablers: Institutional, regulatory, financial, technical, or cultural conditions that support the implementation of Safe System-aligned interventions and strategies/action plans. Examples include clear frameworks and standards, dedicated and sustained funding, practitioner guidance and tools (such as Network Safety Plans), and targeted capacity-building for state and local government.

Human Biomechanical Tolerance: The level of crash force or impact speed that the human body can withstand without incurring fatal or serious injury. This is typically expressed through injury risk curves (e.g. impact speeds at which the risk of Maximum Abbreviated Injury Score (MAIS) 2+ or 3+ injury stays below about 10%) and used as the scientific basis for defining Safe System End State (SSES) speed limits, infrastructure standards and vehicle performance requirements.

Injury Risk Curves (Injury Risk Functions): Quantitative relationships, derived from crash and biomechanical data, linking impact speed or delta-v for specific crash types to the probability of different injury severities (e.g. a 10% risk of MAIS2+ or MAIS3+ injury). These curves are used to set Safe System-consistent speed limits and infrastructure/vehicle requirements for Ultimate and Interim Safe Systems.

Institutional Management Functions: The core organisational functions – coordination, legislation, funding and resource allocation, promotion, monitoring and evaluation, road design and knowledge transfer – that underpin effective road-safety management. These ensure strategies, Network Safety Plans, and road safety action plans are implemented coherently, sustained over time, and continuously improved.

Maximum Abbreviated Injury Score (MAIS): A standard scale for classifying injury severity in road crashes, ranging from 0 (uninjured) to 6 (maximal, usually fatal). References to MAIS2+ and MAIS3+ denote injuries with a score of 2 or greater (moderate to maximal) and 3 or greater (serious/life-threatening to maximal), respectively.

Movement and Place framework: A transport-planning framework that recognises the dual role of roads and streets: to support transport network operations for both people and goods (movement), and as public spaces with their own activity, built form and meaning (place). It clarifies modal priorities and strategic roles, enabling Safe System and Vision Zero solutions to manage crash energies within human tolerance across vehicle-, mixed-traffic, and pedestrian-priority areas.

Planning for Zero Framework: An Austroads guidance framework that helps jurisdictions:

1. Define their Safe System End States and zero-harm target date.
2. Validate the end state and analyse residual risk.
3. Identify systemic risks and safety gaps.
4. Develop a long-term strategic response and associated monitoring.
5. Assess and strengthen road-safety management functions needed to deliver zero road trauma.

Residual Risk: The expected remaining deaths and serious injuries during the transition to the Safe System End State (SSES), reflecting that system change is incremental and takes time. It includes crashes not yet addressed by the combined effect of infrastructure treatments, speed limits and vehicle technologies specified in the SSES, and is used to test whether the proposed end state and transition pathway are sufficient and to identify additional actions needed to reduce trauma further.

Road Safety Management: The enabling component of the Planning for Zero Framework encompasses institutional management functions, governance processes, data systems, and the capability required to plan, coordinate, fund, implement and adapt effective road safety strategies and action plans. This ensures Safe System-aligned interventions are delivered at sufficient scale and quality over time.

Road Stereotypes (Road Types): Standardised categories of roads and streets – derived from frameworks such as Movement and Place – that combine movement role, place function, typical

cross-sections, and design speeds (e.g. high-speed divided rural corridors, undivided arterials, mixed-use urban streets, pedestrian-priority areas). These are used to define SSES requirements, analyse systemic risks, and identify safety gaps consistently across the network.

Safe System Approach: A systems-based road-safety paradigm recognising that people will make mistakes and have limited biomechanical tolerance to crash forces. The road transport system—roads and roadsides, vehicles, speeds, road use and enforcement, and post-crash care—must be designed and managed together so that every day, non-extreme errors in road-user performance do not result in death or long-term serious injury.

Safe System End State (SSES): The desired future state designed to achieve zero or near-zero road fatalities and serious injuries. It specifies a combination of vehicle and compatible road infrastructure features, along with maximum allowable travel speeds, to ensure any crash forces generated do not exceed human biomechanical tolerance, while supporting the desired movement function of the road network.

Safety Gap: A deficiency where the current or planned network does not meet the SSES requirements for a given road stereotype or movement/place function (e.g. high-speed undivided roads lacking median and roadside barriers, or speed limits exceeding Safe System-compatible levels), exposing users to preventable high crash forces.

Safety Performance Indicators (SPIs): Operational conditions of the road traffic system that influence its safety performance (e.g. the percentage of vehicles travelling within the speed limit, the share of travel occurring on 3-star-plus roads, rates of seat-belt or helmet use, the share of traffic on roads above a defined safety rating, or emergency response times).

Systemic Risk: A crash type or configuration that accounts for a substantial share of fatalities and serious injuries (working threshold ~ 5% of FSI in a given road stereotype or movement/place category), signalling an underlying, repeatable system design problem that must be addressed across the network rather than at isolated sites.

Vision Zero: An ethically based road-safety policy framework (originating in Sweden) that regards any death or long-term health loss in road traffic as unacceptable. It requires the road transport system to be planned and operated so that mobility is a function of safety, ultimately eliminating fatalities and serious injuries.

Zero Pathways (Pathway to Zero): A jurisdiction-specific—that is, tailored to an individual Australian state/territory, New Zealand, or another Austroads member agency area of responsibility—sequence of actions, developed using the Planning for Zero Framework, that:

- responds to identified systemic risks and safety gaps
- builds the capacity and capability needed to develop and implement effective road safety strategies and action plans.

It integrates programs, policies, infrastructure upgrades, speed management, vehicle and behaviour initiatives, and supporting institutional changes into a coherent plan from today to around 2050, so that the road transport system progressively converges on its Safe System End State and achieves zero deaths and serious injuries.