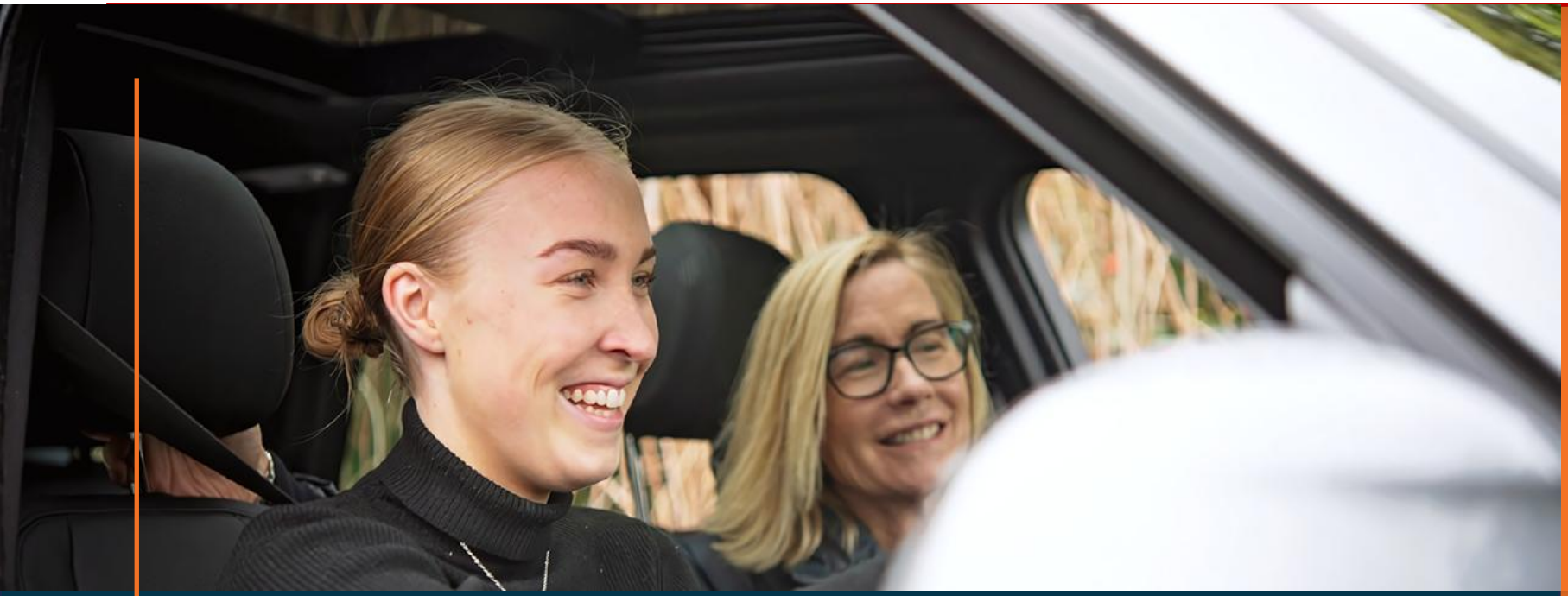
57th CIECA CONGRESS
PORTO
27 – 30 May 2025

CIECA The International Commission for Driver Testing

ANIECA



THE CHANGING ROLE OF THE DRIVER ON THE PATH TO ZERO

Austroads

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Australia

Austroads

The Association of Australian and New Zealand Transport Agencies

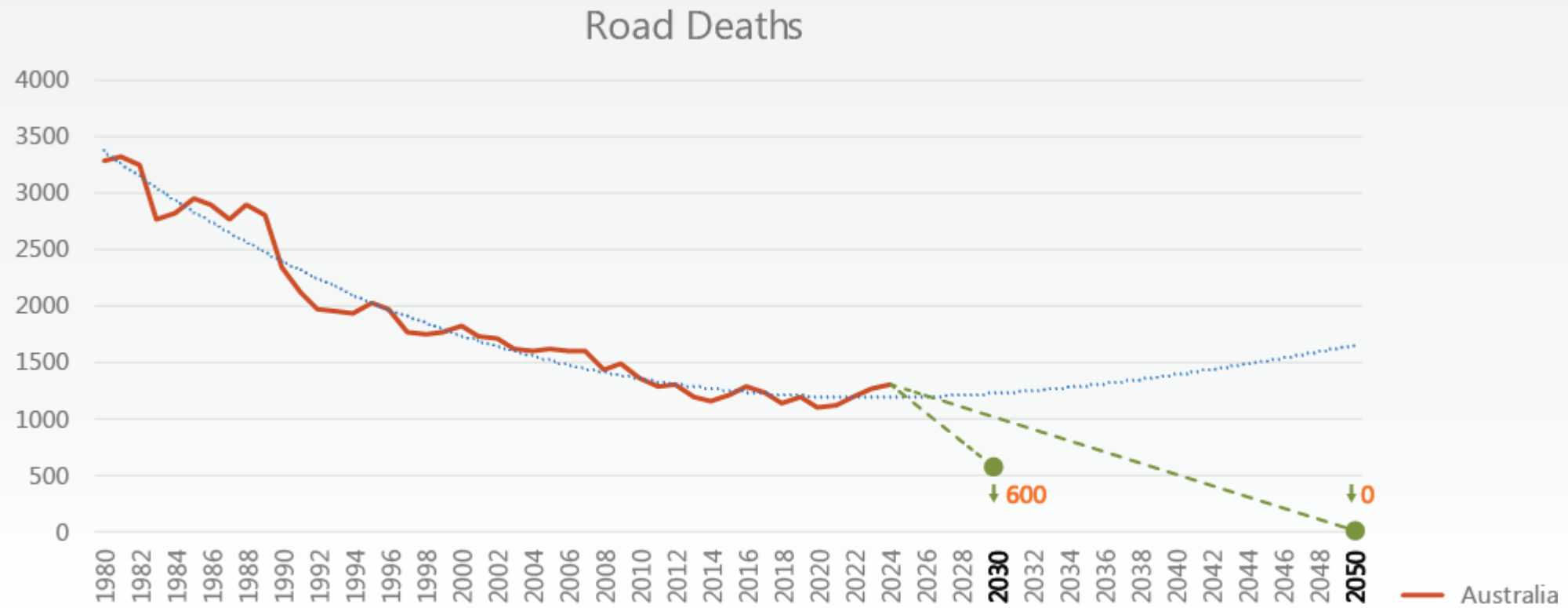
PURPOSE: Contribute to development and delivery of the Australasian transport vision by:

- **Includes** all state and territory transport agencies, the Australian federal government, the New Zealand transport agency, and the Australian Local Government Association (ALGA).
- **Developing** and Promoting National Practices.
- **Supporting** safe and effective management and use of the road system, and providing professional advice to member organisations and national and international bodies.

Austroads

- **Supporting** road agencies to deliver national outcomes for 90 years.

How Are We Travelling Against Our Aim?
50% Reduction in Deaths By 2030



Problem Definition

A

+1,300
of **Deaths**

and roughly

42,000
Serious Injuries

annually across Australia

B

Traditional incremental improvements insufficient to reach Vision Zero

C

Growing complexity

- Aging Population
- New Vehicle Technologies
- Rising Active Transport
- Micromobility…

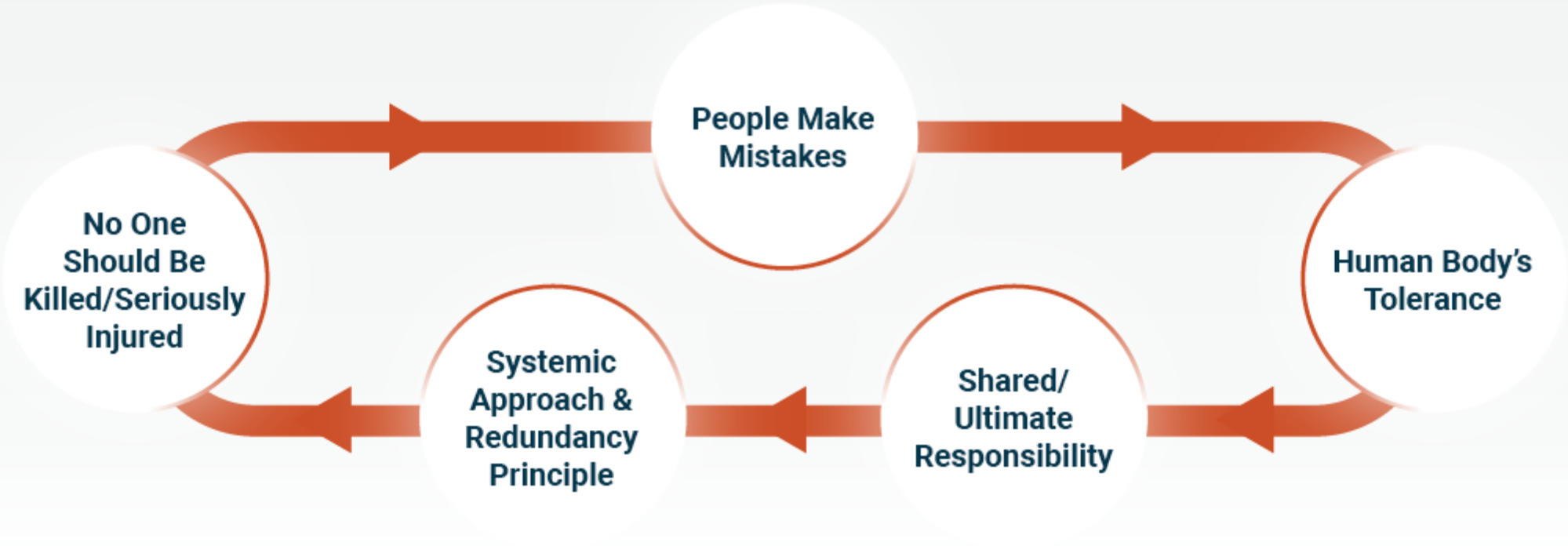
D

Evolving role of human in the system

(e.g., as

- Driver
- Rider
- Passenger
- Pedestrian)

Vision Zero
Safe System Principles



Safe System & Road Safety Management

- **Safe System**
- **Road Safety Management**

(Informed by Global Road Safety Facility, 2013)

Charting a Path to Zero
Vision

Practical Guidance to Help Progress the All-Government-Levels Leadership Needed to Fully Implement the Necessary Actions to Reduce Fatalities and Serious Injuries to Zero by 2050.

Charting a Path to Zero
Streams of Work

STREAM 1 ✓

Planning for Zero Framework

- Key Definitions
- Road Safety Assessments
- Planning for Zero Framework (Blueprint)

STREAM 2 ✓

Zero Pathways

- Turning the PfZF Blueprint into tailored Zero Pathways
- Communication and Engagement Plans
- Change Management Approach
- Training Concepts to Guide Practitioners

STREAM 3 ✓

Further Research Gaps

- Collate Research Gaps Identified in the Project and Similar Projects
- Develop a Pipeline of Research Projects for the Next 5-10 years

Charting a Path to Zero
Planning for Zero Framework (PfZF)

TECHNICAL ASPECTS (Guides)

Step 1	Step 2	Step 3	Step 4	Step 5
Define Safe System End State (SSES)	Validate SSES & Analyse Residual Risk	Analyse Systemic Risks & Safety Gaps	Develop a Strategic Response	Monitor Your Performance

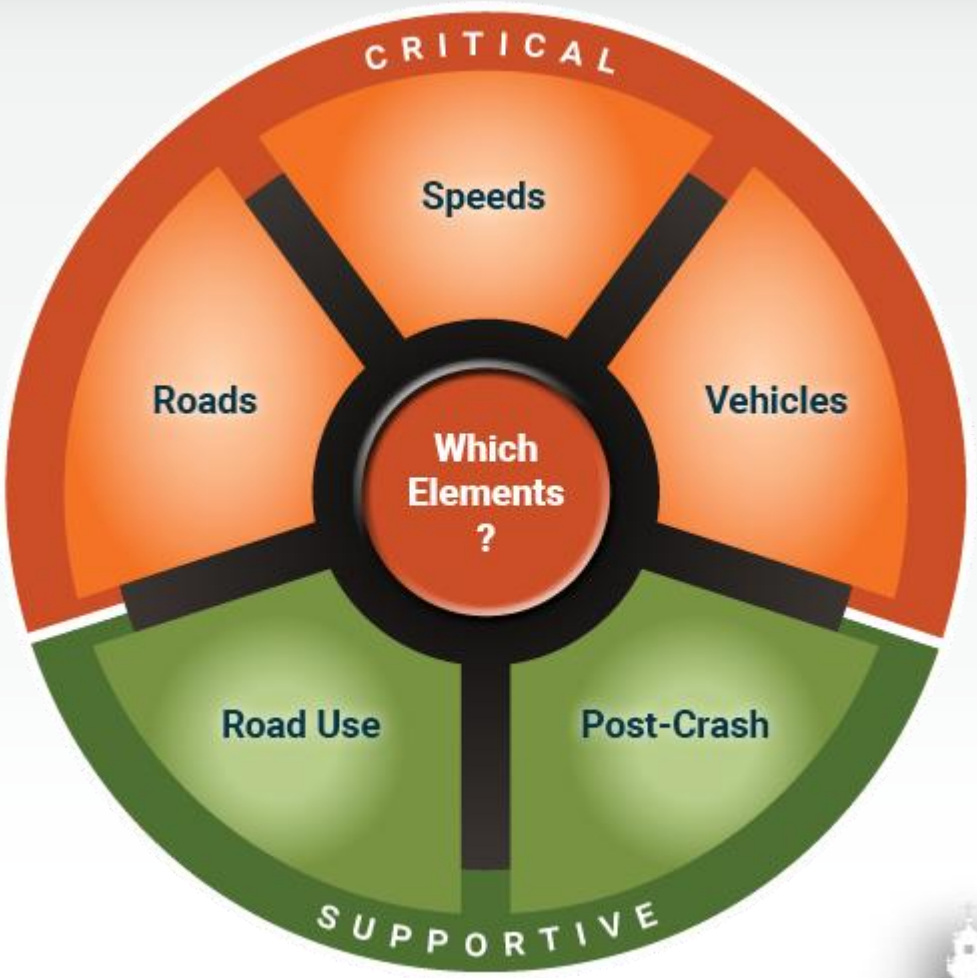
PLANNING for ZERO FRAMEWORK (PfZF)

Road Safety Management	Identify Pathway Enablers & Blockers	Monitoring for Success
A	B	C

ENABLING ASPECTS (Supports)

Safe System End States

What is a **Safe System End State** (SSES)?



Defining a Safe Road System

One Network Framework (ONF) Factsheet 2025

(New Zealand Transport Agency)

SSES – An Example
Activity Streets

Requirements	Vehicles	Infrastructure	Maximum Travel Speed
Mix of road users No motocycles or heavy vehicles	☑ AEB bicyclist ☑ AEB pedestrian ☑ AEB rear-end ☑ AEB intersection ☑ AEB head-on ☑ ISA limiting or geofencing ☑ Seatbelt interlock ☑ Front, side and rear underrun protection for heavy vehicles	☑ Off road separated lanes not in pedestrian areas for bicycles and micro-mobility devices ☑ Pedestrian crossing with 10km/h speed zone ☑ Frangible narrow roadside objects/and or removal of hazardous narrow roadside objects ☑ 5 m distance from sidewalk to road lane/ or pedestrian fencing	☑ 40 km/h BUT ☑ 10 km/h at pedestrian crossings ☑ 20 km/h at intersections

(Truong et. al., 2022)

Achieving Vision Zero In 3 Stages

The transition to Vision Zero involves three stages:

Current
Stage (2020 ~ 2030)

- Focus on cost-effective improvements
- Uses traditional methods like enforcement, driver training, speed control, and better infrastructure.

Transitional
Stage (2025 ~ 2045)

- Shifts toward Vision Zero goals
- Emphasises safer vehicles (5-star rated), Safe System speeds, and compliant infrastructure.

Vision Zero
Stage (~ 2050+)

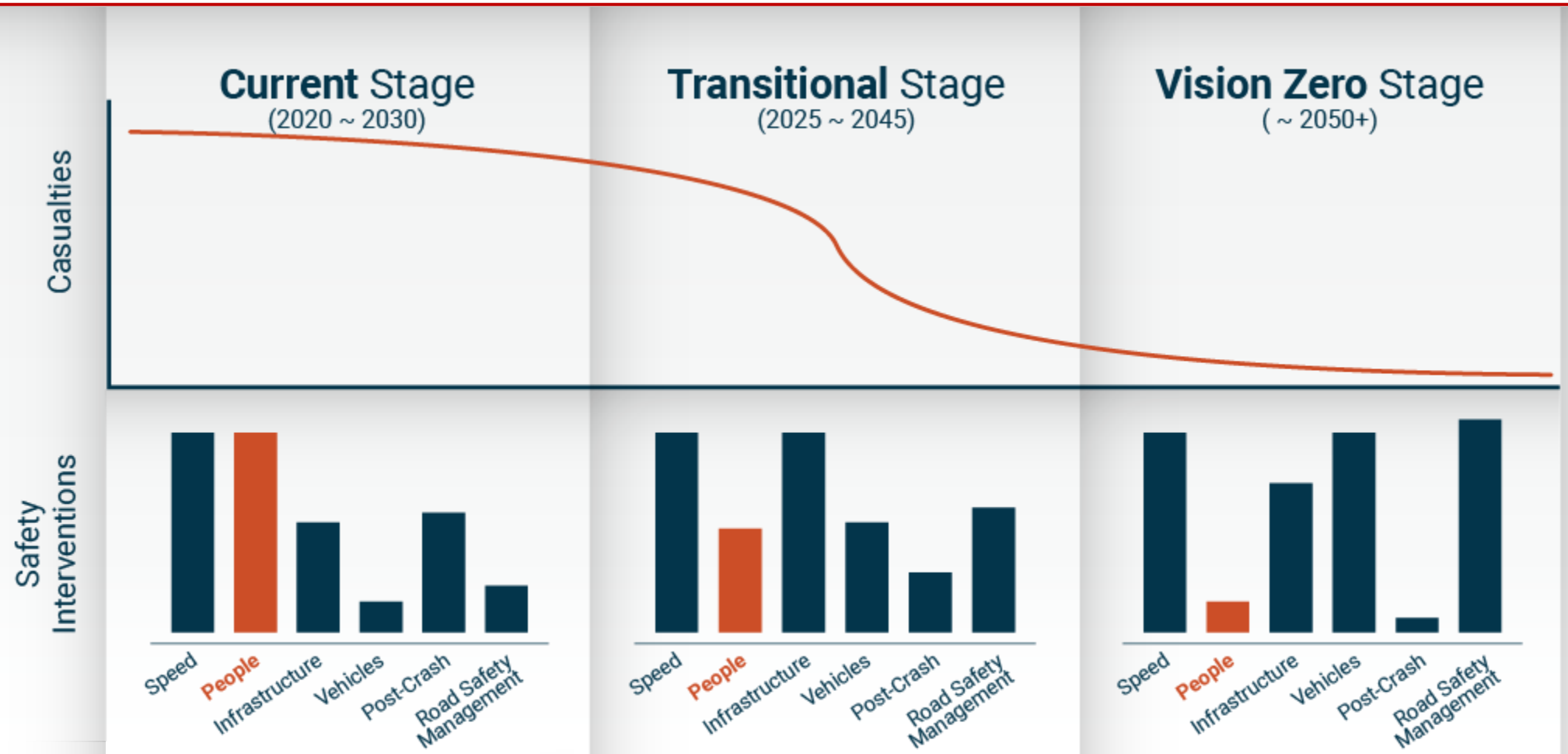
- Road system fully designed to manage human errors
- Aims to eliminate deaths and serious injuries on the road.

Role of Human Factors and Error In Road Safety

Human Factors ensures that system design aligns with real human capabilities and limitations.

Human Error is often a symptom of "bad" or mismatched design rather than the root cause of crashes.

Evolution of the Role of “Safe People” In Vision Zero



Safe People Intervention

1

Changing Role of Driver

Current ▶ Transitional ▶ Vision Zero Stage

2

Licensing

Training, Testing, Monitoring, Fitness to Drive

3

Registration

Vehicle Safety Compliance

4

Vehicle Technology

ADAS, Connectivity

Safe People Intervention

1 Changing Role of the Driver

Current
Stage (2020 ~ 2030)

Transitional
Stage (2025 ~ 2045)

Vision Zero
Stage (~ 2050+)

Active Decision-Makers → **Supervised Participants**

Safe People Intervention

1 Changing Role of the Driver

Current Stage (2020 ~ 2030)

Active Decision-Makers

Focus on competence and behaviour/ attitude through:

- ☑ Driver training
- ☑ Driver testing and assessment
- ☑ Driver education
- ☑ Fitness to drive
- ☑ Enforcement
- ☑ Penalties/infringements/restrictions

Transitional Stage (2025 ~ 2045)

Start Doing:

- ☑ Planning for Zero Framework approach
- ☑ Adopting Safe System End States
- ☑ Intelligent speed assist (advisory)
- ☑ Driver training to focus on ADAS, systems monitoring, rare events
- ☑ Differential licensing (e.g., ADAS-only licence)
- ☑ Vehicle systems monitoring
- ☑ Remote enforcement
- ☑ Re-calibrate fitness-to-drive

Stop Doing:

- ✖ Speeding tolerances & spot policing
- ✖ Approving low-spec vehicles
- ✖ Designing high risk infrastructure
- ✖ Blame-the-user crash investigations
- ✖ Others?

Vision Zero Stage (~ 2050+)

Supervised Participants

- ☑ **Safe Speeds** – Geofenced, tamper-proof limiting ISA to manage kinetic energy within human tolerance
- ☑ **Safe Vehicles** – Connected/autonomous/ ADAS-equipped
- ☑ **Safe Roads** – Self-explaining (human factors), either separate users or dissipate impact energy
- ☑ **Safe Road Use** – Continuous readiness and impairment monitoring, ensuring unfit drivers cannot take control
- ☑ **System Resilience** – Unified real-time data and shared designer/operator responsibility ensure no single failure escalates to fatal or serious harm.

Safe People Intervention

2 Licensing - *Principles*

1 Safety

Drivers/riders are skilled and approach driving/riding with attitudes that support road safety

2 Consistency

There are uniform licence rules and sanctions

3 Efficiency

Administration effort is minimised

4 Accuracy

Drivers/riders are accurately identified and fraud is minimised

5 Protection

Vulnerable and higher risk drivers/riders are supported

Scan QR code for full details (AP-G107-24/Austroads)

Safe People Intervention

2 Licensing - *Effective Interventions*

- Graduated Licensing Systems (GLS)
- Minimum Supervised Driving Hours (e.g., 120-hour log-book)
- Hazard Perception Training + Testing
- Alcohol-Ignition Interlock Programs
- Point-based Licence Sanction Systems with Swift Suspension for High-risk Offences
- Targeted Medical-fitness Screening and Shorter Renewal Cycles for High-risk Groups (older and medically at-risk drivers)
- Managing Vehicle Access Through Technology

Safe People Intervention

3 Registration - *Principles*

1. Safety Compliance
2. Accurate Identity & Traceability
3. Data Integrity & Sharing
4. National Consistency
5. Administrative Efficiency
6. Consumer Protection & Equity

Safe People Intervention

3 Registration - *Effective Interventions*

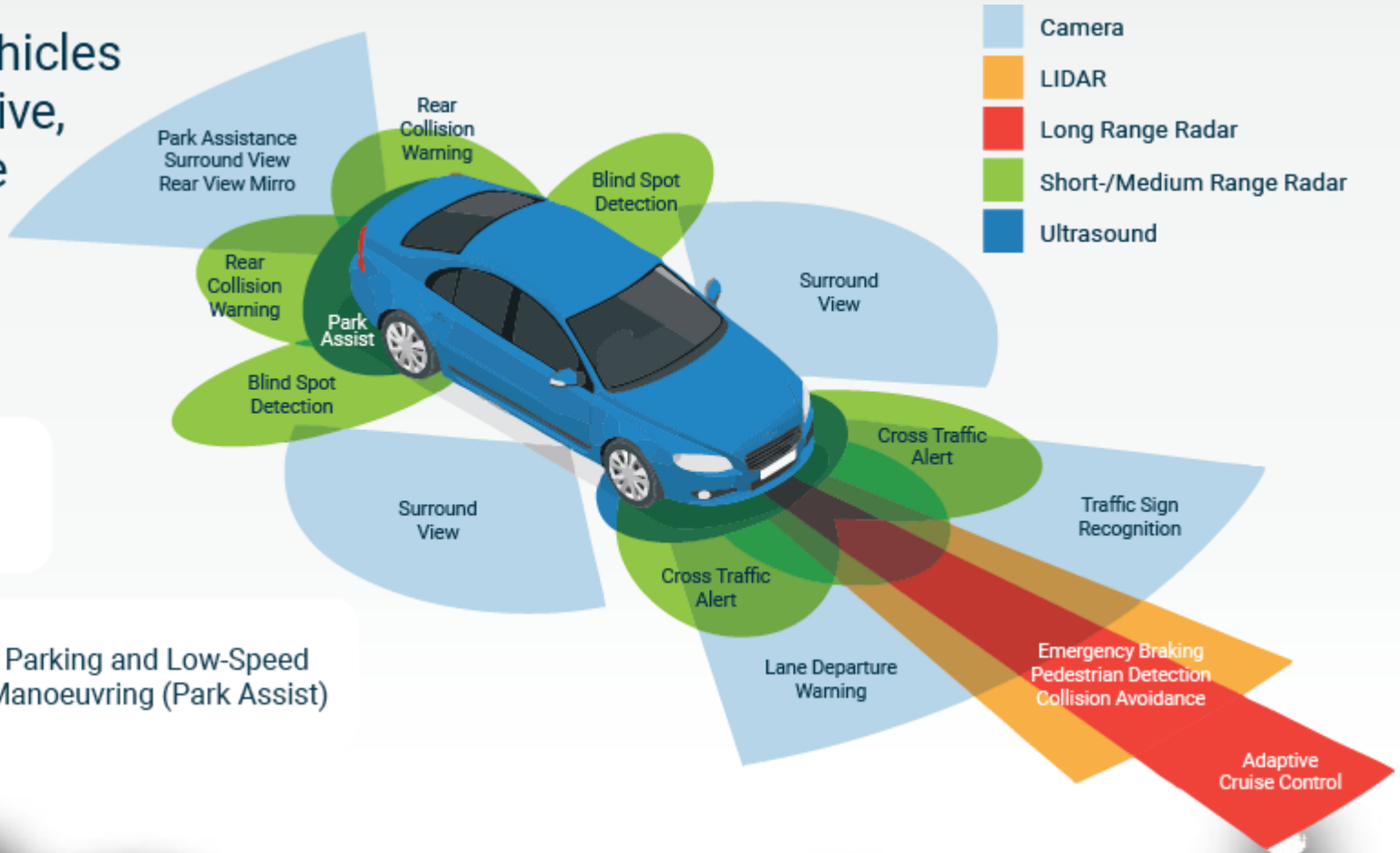
- Linking Registration Renewal to Safety Recall Closure
- Mandatory Written-Off/Salvage Branding Schemes
- Periodic Roadworthiness Inspections (PVIs) for Ageing Vehicles
- Real-Time ANPR Enforcement of Unregistered & Uninsured Vehicles
- Differential Registration Fees Based on Vehicle Safety Performance
- Shorter Renewal Cycles and Inspections for Older or High-Risk Vehicle Types
- Automated Recall Notifications at the Point of Ownership Transfer

Safe People Intervention

4 Vehicle Technology - *ADAS*

Technologies integrated into vehicles that provide automated, adaptive, or enhanced features to assist the driver in controlling the vehicle and responding to road hazards:

- Collision Avoidance and Emergency Response (AEB, FCW)
- Speed and Distance Control (ACC, ISA)
- Lane and Path Support (LDW, LKA)
- Blind Spot and Surround Awareness (BSM)
- Parking and Low-Speed Manoeuvring (Park Assist)

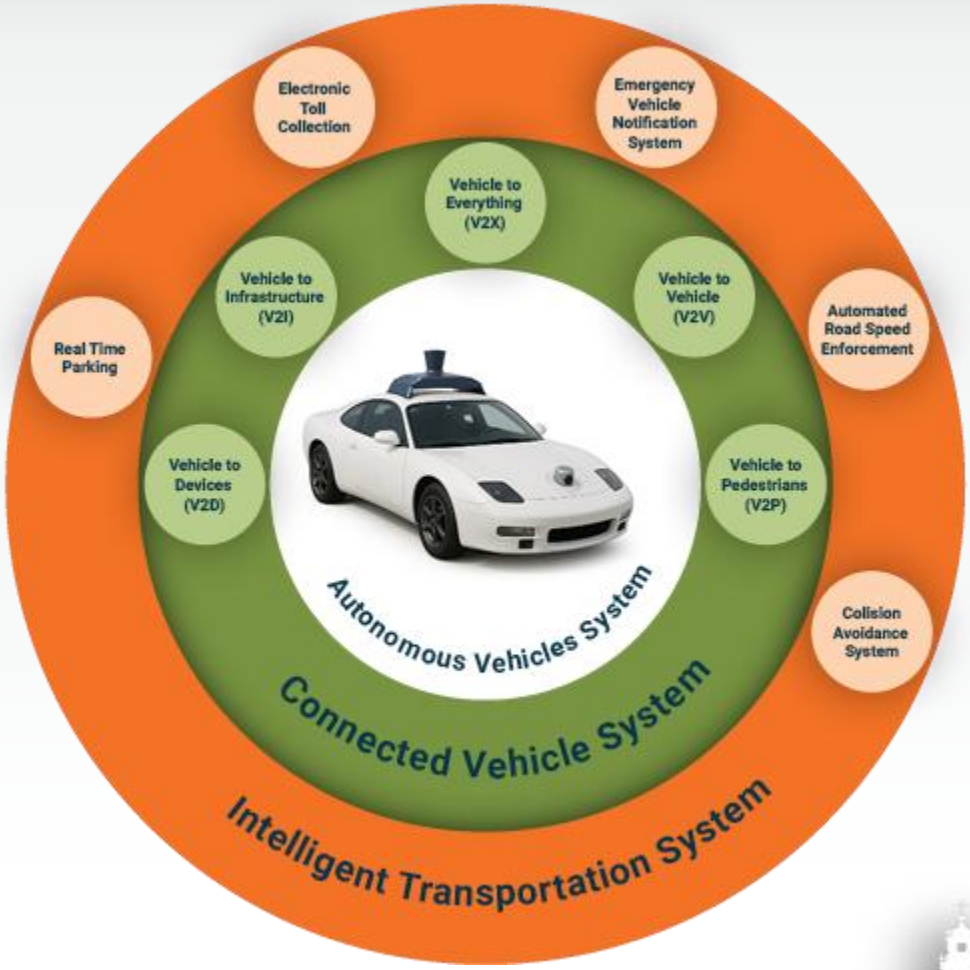


Safe People Intervention

4 Vehicle Technology - *CAV*

Vehicles equipped with automated driving functions and communication capabilities that allow them to interact with other vehicles, infrastructure, and road users – a few examples:

- Automated Driving System (ADS)
- Co-operative Adaptive Cruise Control & Platooning
- Automated Shuttle / Robo-Taxi Systems
- Vehicle-to-Everything (V2X) Connectivity
- Low- / Zero-Emission Automated Vehicles (ALZEV / CALZEV)
- Automated Freight / Truck Systems



Call to Action

- **Appropriately Include Safe People and Human Factors in Vision Zero Planning & Strategies**
- **Modernise Licensing & Registration** (Based on Principles & Effective Interventions)
- **Prepare for CAV & Accelerate ADAS Uptake**
- **Smarter Speed Management**
- **Policy & Regulation Enablers**
- **Road–Vehicle Interface Readiness**

Thank You!

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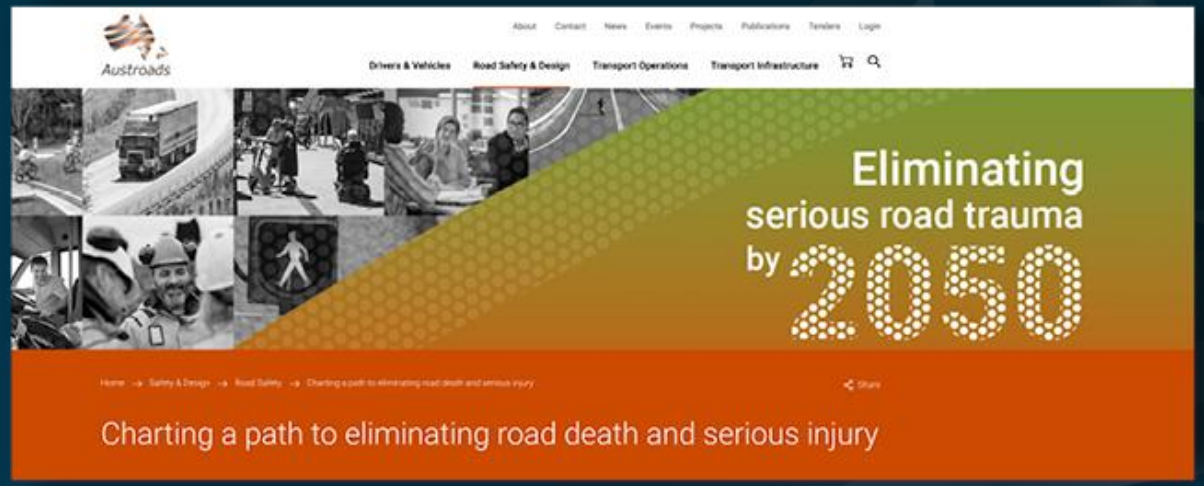

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