ISO 39001: A Comprehensive Road Safety Management Tool for Organisations

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Today's Program

8.30 pm		Tea and Coffee
9.00 am	1.	Road Safety Management Principles
	2.	Organisational Context & Leadership
10.30 am		Morning Tea Break
10.50 am	3.	Planning
12.30 am		Lunch Break
1.30 pm	4.	Implementation & Improvement
3.00 pm		Afternoon Tea Break
3.30 pm	5.	Bringing it all Together
5.00 pm		Workshop Close

Today's Goal

- Drawing on safety management principles, provide you with support to assess the preparedness of your organisation to implement a road traffic safety management system
    - Understanding their organisation's safety exposure and influence
    - Making the case for a road traffic safety management system
    - Influencing top management leadership and commitment and formulating a road safety policy
    - Understanding the key evidenced based safety performance factors and how to apply them
    - Establishing road safety objectives, plans and targets relevant to your organisation
    - Implementing plans, evaluating results and continually improving performance

Part 1 Road Safety Management Principles

- Origins of road safety management

- Key road safety management principles

- Quality management systems

- ISO 39001

- Making safety decisions

Origins of road safety management

Four phases of road safety management (Bliss & Breen, 2009)

- **1950s/60s** dispersed & uncoordinated activity, focus on human error, education & training

- **1970s/80s** move to systems base influenced by pre-in-post crash analysis with more systemic interventions

- **1990s** greater emphasis on institutional functions, leadership, coordination, allocation, monitoring, results focus

- **Today** movement towards a safe system, led by best performers challenging fundamentals of road transport system
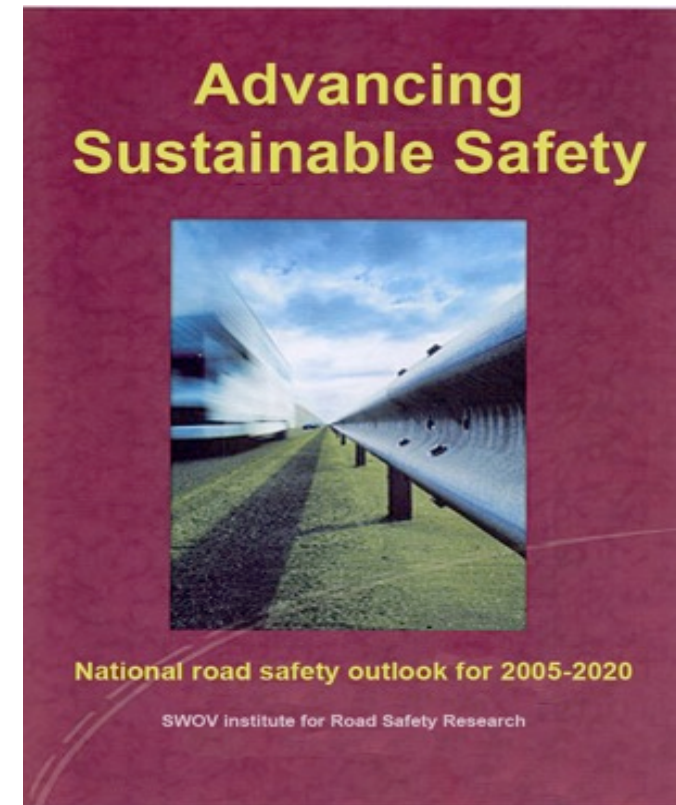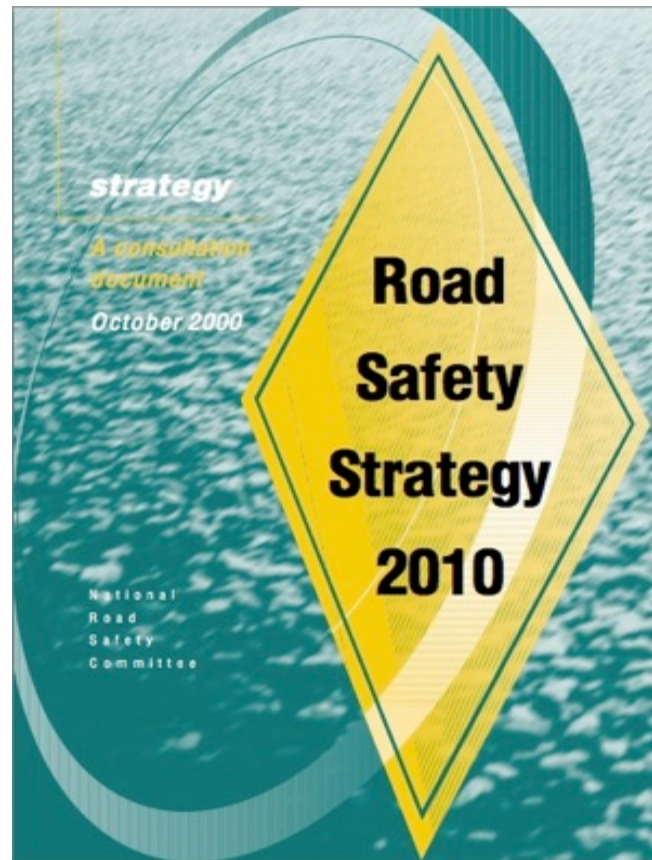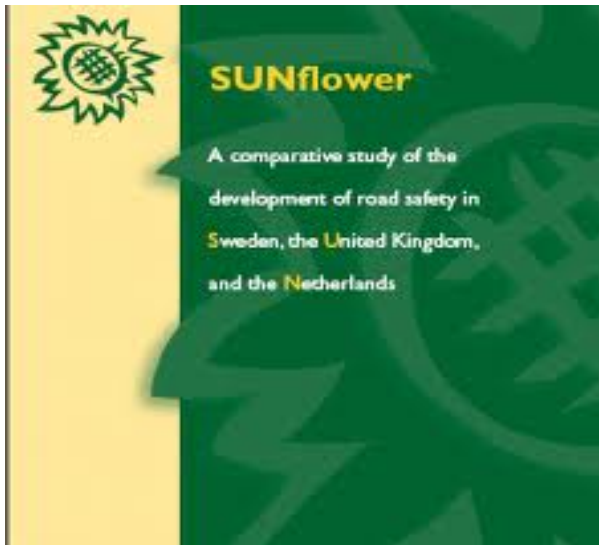
Haddon's Matrix

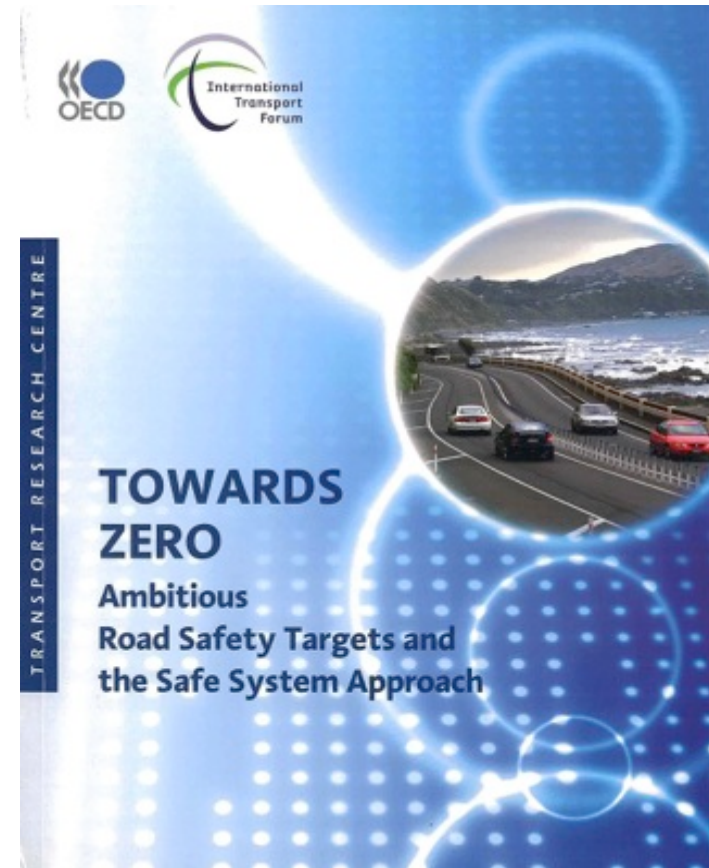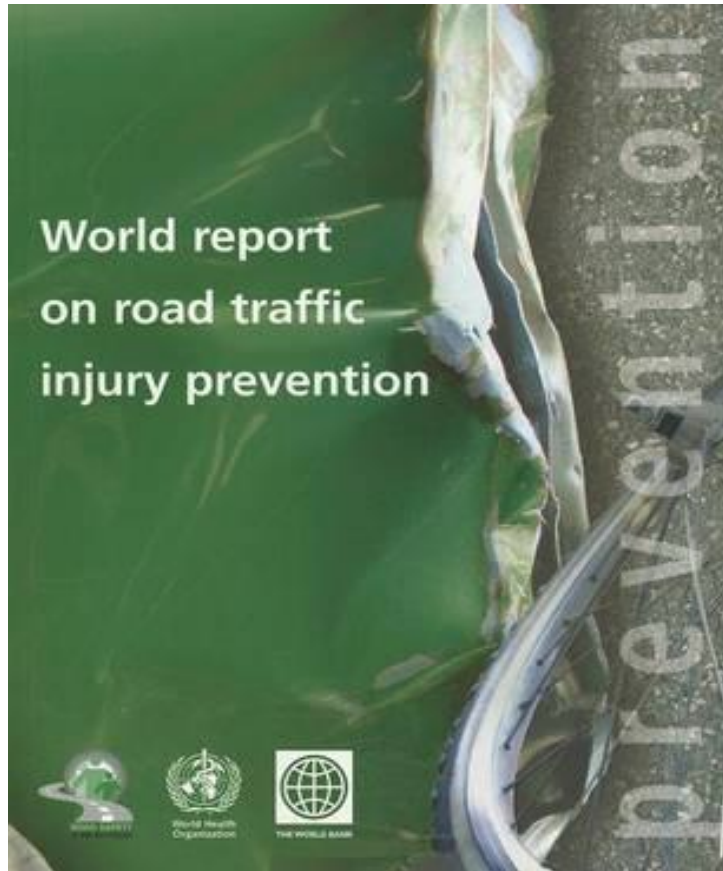| Element	Pre Crash	Crash	Post Crash
Human	Education, Licensing, Behaviour (eg, drinking, speeding), Attitudes	Restraints (eg, safety belts, helmets)	Prompt emergency medical response
Vehicle	Primary Safety (eg, autonomous emergency braking, electronic stability control, anti-lock braking systems)	Secondary Safety (eg, crumple zones, airbags)	Emergency alerts (eg, phones, black box recording, automatic signaling)
Road	Geometry, speed limit, delineation, surface condition, visibility	Roadside and median safety (eg, crash barriers, frangible poles)	Ease of access (eg freeway median breakouts and breakdown lanes)

The Vision Zero Challenge

Growing management literature

SUNflower — A comparative study of the development of road safety in Sweden, the United Kingdom, and the Netherlands

strategy — A consultation document October 2000 — Road Safety Strategy 2010 — National Road Safety Committee

Advancing Sustainable Safety — National road safety outlook for 2005-2020 — SWOV institute for Road Safety Research
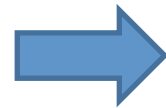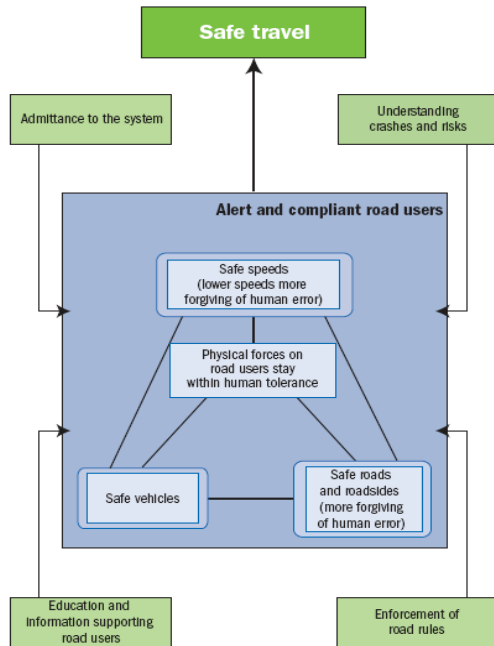
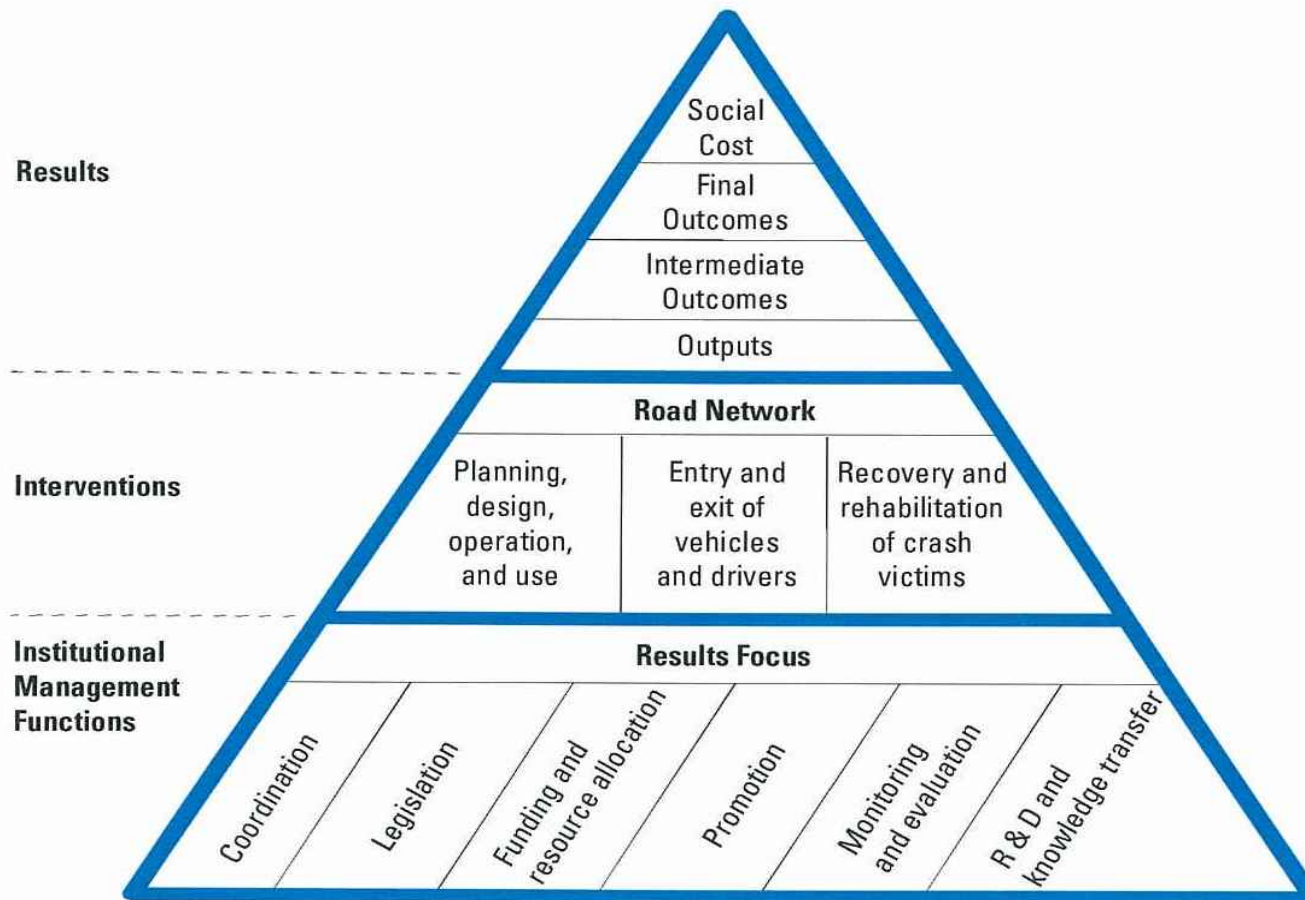# Growing international response

Safe Systems Evolution in Australasia
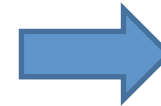
Vision, principles, interventions, management

Comprehensive management system

Source: Bliss and Breen, building on the frameworks of Land Transport Safety Authority, 2000; Wegman, 2001; Koornstra et al, 2002; Bliss, 2004.

Standardisation of Road Traffic Safety Management

Key road safety management principles

Description of "Safe System" approaches (OECD 2008)

- Aim to develop a road transport system better able to **accommodate human error**, commonly achieved through better management of crash energy, so that no individual road user is exposed to crash forces likely to result in death or serious injury.

- Incorporate many strategies for **better management of crash forces**, with a key strategy being road network improvement in conjunction with posted speed limits set in response to the level of protection offered by the road infrastructure.

- Rely on strong **economic analyses to** understand the scale of the trauma problem, and **direct investment** into those programs and locations where the greatest potential benefit to society exists.

Description of "Safe System" approaches (OECD 2008)

- Underpinned by ***comprehensive management and communication structures*** incorporating all key government agencies and other organisations which have a role in determining the safe functioning of the transport system.

- ***Align safety management decision making*** with broader economic goals and human and environmental health goals, and create a commercial environment that generates demand for and benefits the providers of safe road transport products and services.

- Embrace the ***ethos of "shared responsibility"*** for road safety among the various actors of the road transport system, such that there is a shared vision amongst citizens, public, private and not for profit organisations ***regarding the ultimate safety ambition***, and how to achieve it.

Four key principles of Safe System approach

- Human Factors

- Human Frailty

- Forgiving Systems

- Shared Responsibility

Human factors

No matter how well we are trained and educated about responsible road use people make mistakes and the road transport system needs to accommodate this.

Mistakes, inattention or common lapses of judgement (known as "system errors") are the cause of over half of all fatal crashes, and 90% of all non-fatal crashes.

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Human frailty

The finite capacity of the human body to withstand physical force before a serious injury or fatality can be expected is a core system design consideration.

Potential Crash	Safe Speed (kmh)
Pedestrian Impact	30
Side Impact	50
Head-on Impact	70

SWOV

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Forgiving systems

Roads that we travel on, vehicles we travel in, speeds we travel at, and communities we live in need to be more forgiving of human error.

A five star car and a five star road are … safer than a one star car or a one star road.

Shared responsibility

Everyone has a responsibility to use the road safely with organisations, businesses and communities taking responsibility for designing, managing and encouraging safe use of the road transport system.

All organisations ("system designers") play a critical road safety management role.

Vägverket

Swedish Road Administration

Quality management system
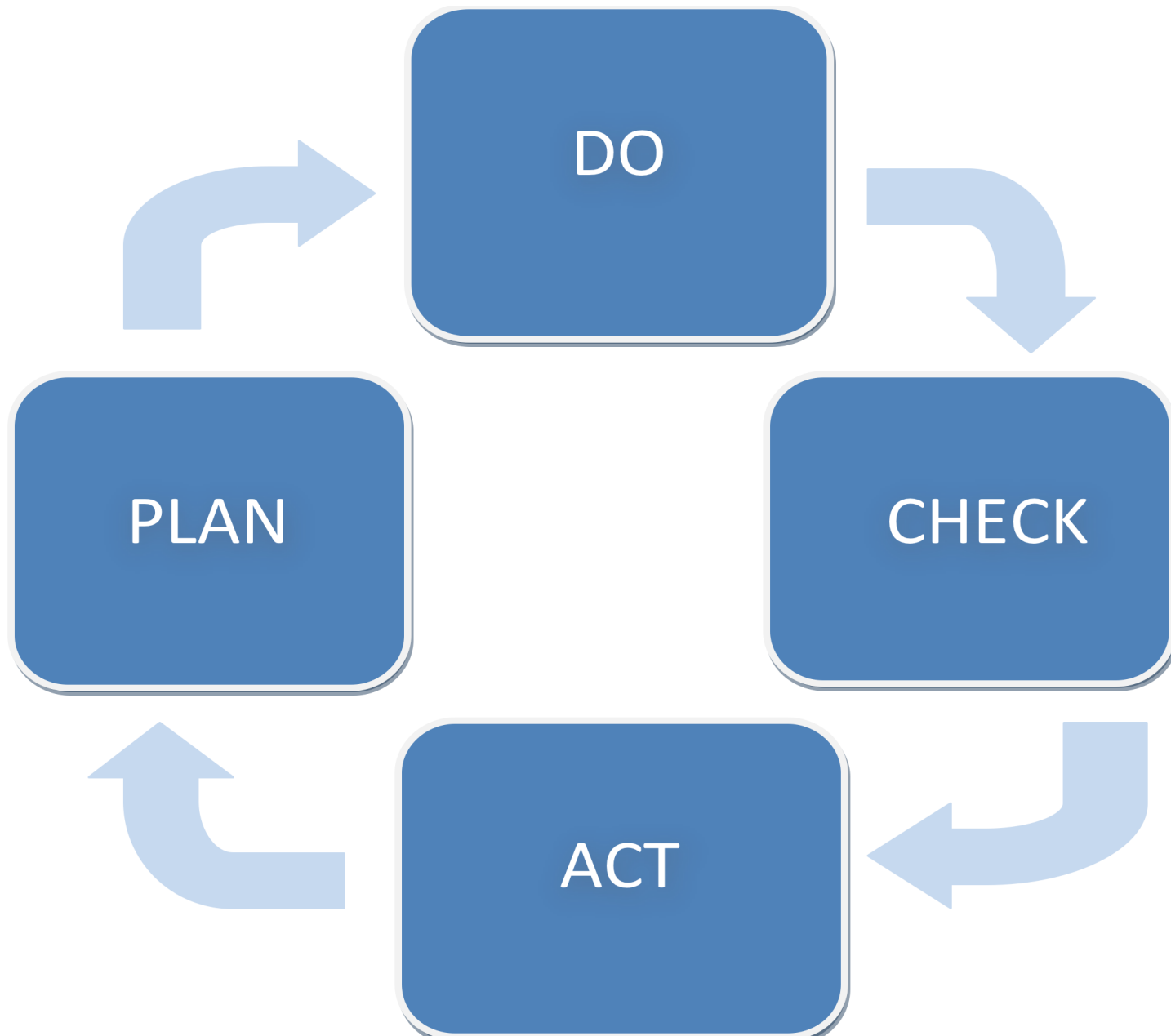
Plan

- Identify the impact the organization can have on RTS, map that impact across interested parties, and determine the scope of the RTS management system (Clause 4)

- Establish leadership commitment by, amongst other actions, adopting a long-term vision to eliminate death and serious injury. Establish and communicate RTS policy, assign organizational roles and responsibilities (Clause 5)

- Determine risks and opportunities through assessing current performance, and establish which of the RTS performance factors are relevant to the organization. Set RTS objectives and targets, and develop action plans (Clause 6)

Do

- Implement and operate the RTS management system and ensure that sufficient capacity is provided for the key system functions to allow the identified actions to be carried out and RTS objectives and RTS targets to be met (Clauses 7 and 8)

Check

- Monitor and evaluate RTS performance, conduct internal audits and periodic reviews of the RTS management system to identify opportunities for continual improvement, achieving RTS results and necessary changes in the RTS management system (Clause 9)

Act

- Improve the RTS management system following review of performance against RTS objectives and RTS targets, and identify corrective action and opportunities for preventive action aimed at reducing the incidence and risk of road traffic deaths and serious injuries (Clause 10)

ISO 39001 Road Traffic Safety Management Systems

The new standard in road safety management

- ISO 39001 combines best practice and knowledge regarding road traffic safety and quality management systems into a single safety management tool

- ISO 39001 provides organisations with the opportunity to reduce, and ultimately eliminate, the incidence and risk of death and serious injury related to road traffic crashes

Requirements of ISO 39001

- Understand road safety context and influence

- Establish top management **leadership** and commitment

- Determine road safety policy and communicate it

- Consider **safety performance factors** that positively impact on road safety in a known way

- Establish objectives and plans

- Resource plans appropriately, and support through a variety of management functions

- Measure, review and continually improve performance

Using Safe System principles to make safety decisions

Starting with key principles, four screening questions to support Safe System decisions

HUMAN FACTORS
People make mistakes

HUMAN FRAILTY
Biomechanical rules rule

FORGIVING SYSTEMS
Fix the system, not the operator

SHARED RESPONSIBILITY
Many contributions needed

Principle-based question one

SHARED RESPONSIBILITY
Many contributions needed

Is this decision consistent with an expectation of shared responsibility for safe operations?

Principle-based question two

| FORGIVING SYSTEMS
Fix the system, not the operator	Is this decision a systemic no-blame response to an injury problem or risk?

Principle-based question three

HUMAN FRAILTY **Biomechanical rules rule**	**Will this decision reduce the transfer of crash energy onto a person?**

Principle-based question four

HUMAN FACTORS
People make mistakes

Does this decision seek to accommodate human error rather than assume human perfection?

The occupational safety hierarchy of control can also be useful

- Can we *eliminate exposure* of the user to the hazard (through reducing the need for travel)?

- Can we *substitute the hazard* to the user for one with a lower risk (through shifting to a safer mode of travel)?

- Can we use technology to *safeguard the user* from the hazard (through safer road design or vehicle technology)?

- Can we put in place *training or procedures* for the user to mitigate the presence of the hazard (through setting greater expectations on behaviour)?

- Can we provide the user with *personal protective equipment* against the hazard (such as cycle helmets or motorcycle safety clothing)?