

Celebrating success

UN Decade of Action for Road Safety
Case Study 1

Making Safety a Global Standard



Reviewing road design standards, implementing road safety audits, specifying minimum star ratings and applying safe system principles are some proven ways to save lives.

Roads around the world have typically been built to a standard - a national or state-level standard that defines the standard cross-section of a road, the design of curves, the provision of facilities for vulnerable road users, pavement design and intersection design. These standards have typically focused on maximizing mobility, speed and volume of traffic.

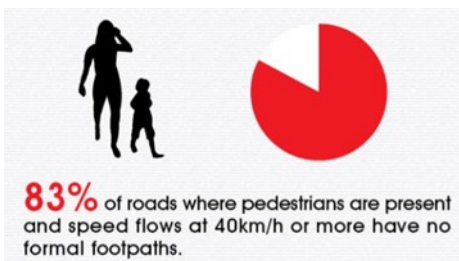
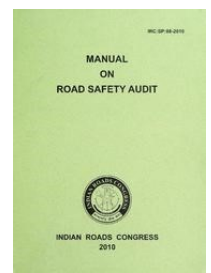
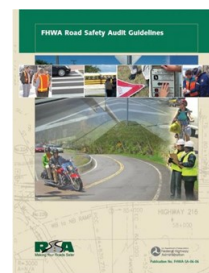
With those design standards in place, global road networks have been established and expanded over the years providing the foundation on which all road users interact. Trucks, cars, pedestrians, cyclists, buses and motorcyclists all interacting in the road space based on the road designs that have been provided for them. 1.2 million people were killed on the world's roads in 2013 and an estimated 30-50 million injured.

From a pure safety perspective the historical design of roads has built in many deficiencies that lead to negative safety outcomes. The primary crashes that kill and injure are head-on crashes, run-off road crashes, intersection crashes and pedestrians and cyclists hit while moving along or crossing a road. An analysis of iRAP assessments from around the world provide the following snapshot of road condition. New and upgraded roads continue to build in these deficiencies.

The [PIARC Road Safety Manual](#) provides detailed advice on the key elements of safe road design, the systems to support safer roads, targeting of action and proven infrastructure treatments. The Manual highlights the need to link [Policy with Standards and Guidelines](#) to ensure effective implementation. The UN Decade of Action for Road Safety Global Plan highlights the need to raise the inherent safety and protective quality of road networks for the benefit of all road users.



Road Safety Audits provide an independent review of road designs by trained road safety auditors. The process involves a systematic and qualitative review of the design and can be undertaken at different stages of a project (e.g. concept, draft and detailed design). National road safety audit guidelines exist in many countries and a checklist approach helps guide auditors through the essential road safety needs of all road users.

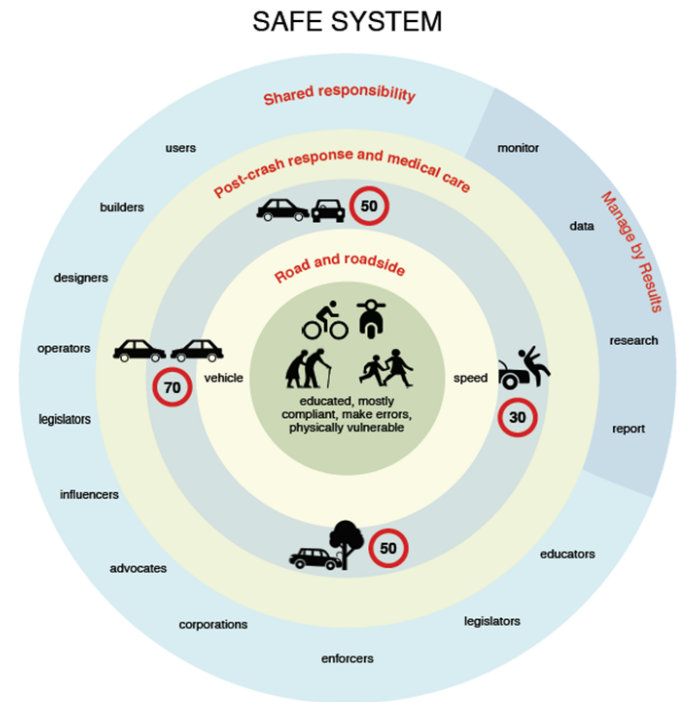
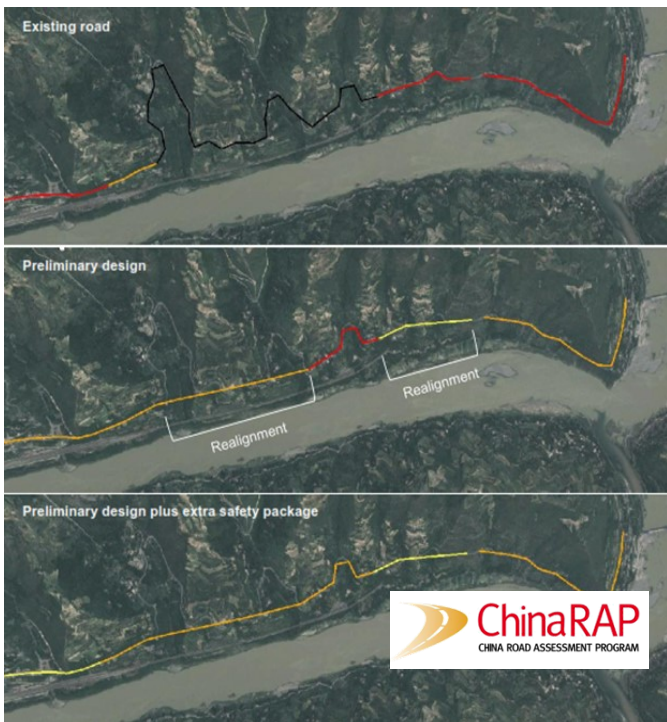


Source: iRAP (2015) Vaccines for Roads (3rd Edition).



The use of minimum star rating targets for new road projects (e.g. minimum 3 or 4-star standard for all road users) is also providing countries with the ability to provide an immediate and objective, evidence-based global standard for specifying minimum safety performance (refer Celebrating Success Case Study 6 - El Salvador). The star rating of designs enables an immediate confirmation of the safety of the road prior to approval and prior to construction. The star rating also allows the road safety outcomes to be incentivized during road project tender stage where the final star rating of the road (and associated expected crash costs) is included in the tender evaluation process.

Leading countries are now also adopting a Safe System approach to designing new roads. The premise is that humans make mistakes, the human body has a limited physical ability to tolerate crash forces and that the system designers have a shared responsibility to design a system that prevents crashes that kill and injure and all parts of the system must be strengthened such that if one part fails, road users are still protected (OECD, 2016).



Source: OECD (2016). Zero Road Deaths and Serious Injuries – Leading a Paradigm Shift to a Safe System

CASE STUDY: 5-Star Safety Features on the Bruce Highway, Queensland, Australia

Bruce Highway, QLD

Vehicles: ★★★★★

- 100 km/h
- Divided carriageway
- No intersection or property access
- Straight horizontal curvature
- Wide lane widths
- Roadside safety barriers
- Wide paved shoulder
- Adequate delineation
- Good road surface condition

For more information on iRAP Star Rating Designs, visit <http://irap.org/en/>

