

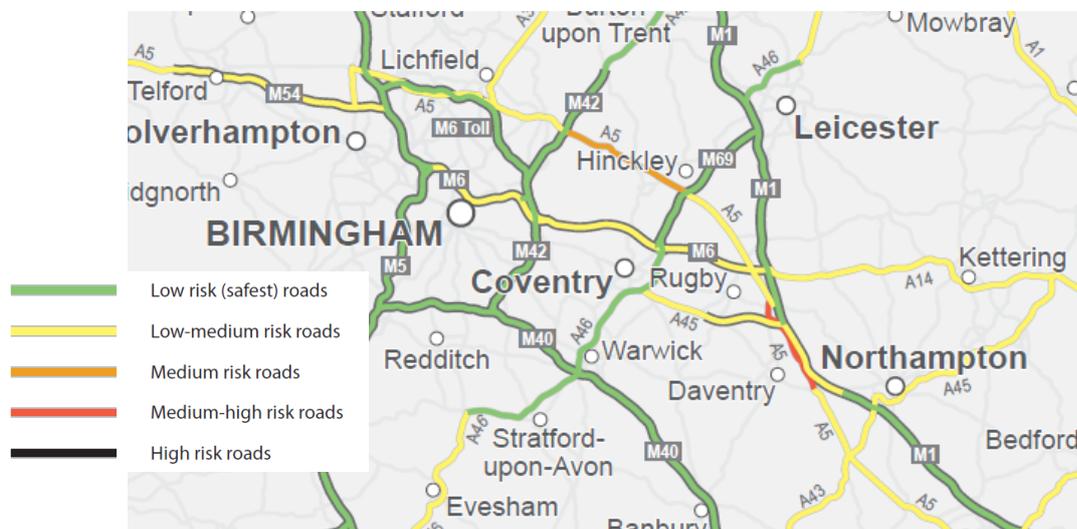
How Safe Are England's Strategic Roads?

An Assessment of the Safety of the Strategic Road Network

Measuring the Rate of Death and Serious Injury

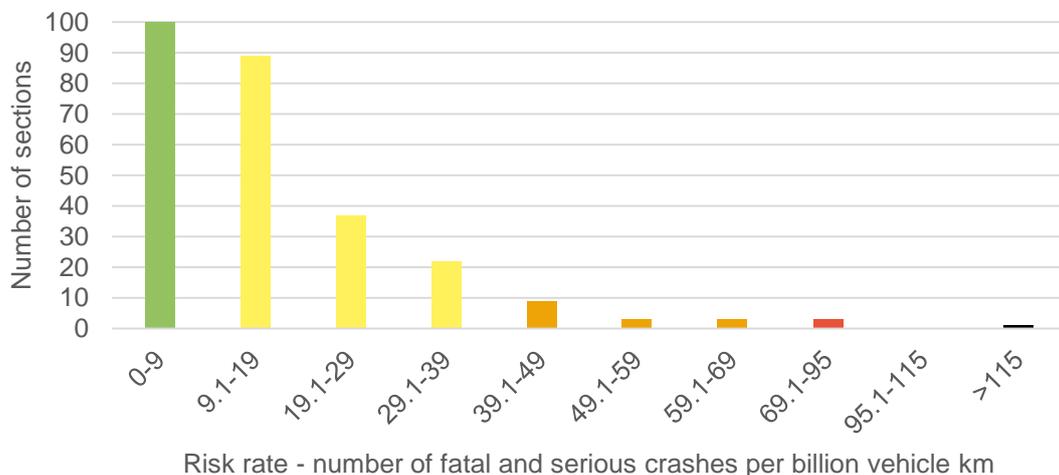
1. A Risk Map has been prepared of the Strategic Road Network to international risk bandings prepared for tracking performance during the UN Decade for Road Safety to 2020. The map showing the risk faced by a road user is attached and illustrated below.

FIGURE 1.1 SRN Risk Mapping 2008-2012 (Risk Bands₂₀₂₀)



2. The distribution of risk rates based on the new mapping shows the SRN has a long tail of higher risk routes that need addressing. The A21 in Kent is the highest risk section on the SRN and has a 'black' rating.

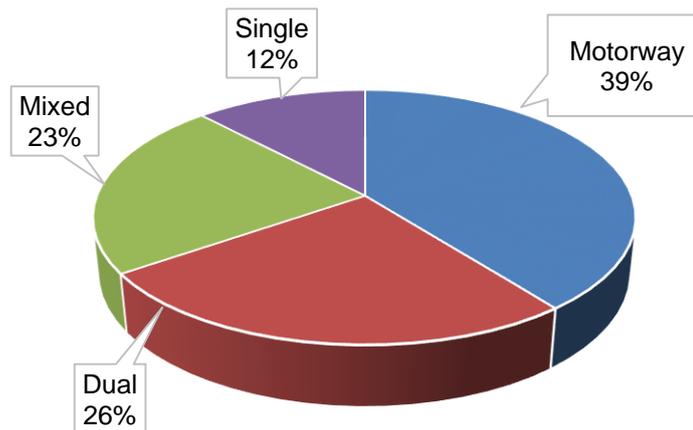
FIGURE 2.1 Distribution of SRN Risk Mapping 2008-2012



What Length of the SRN is Motorway?

- Only 39% of the length of Britain's SRN is motorway. A further 26% is dual carriageways. The chart shows 35% is either single carriageways or mixed carriageways (length of single carriageway interspersed with sections of dual).

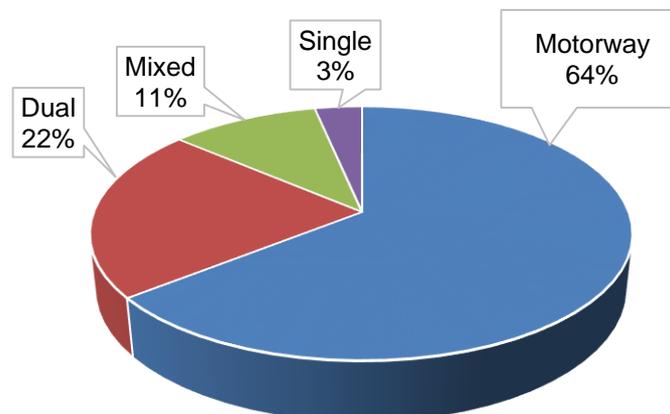
FIGURE 3.1 Distribution of Road Type across SRN



How much travel is there on each Road Type?

- Motorways are much more heavily trafficked than other road types. Typically, SRN motorways carry 5 times more traffic than single carriageway roads. That results in nearly two thirds of all travel (64%) being on motorway.

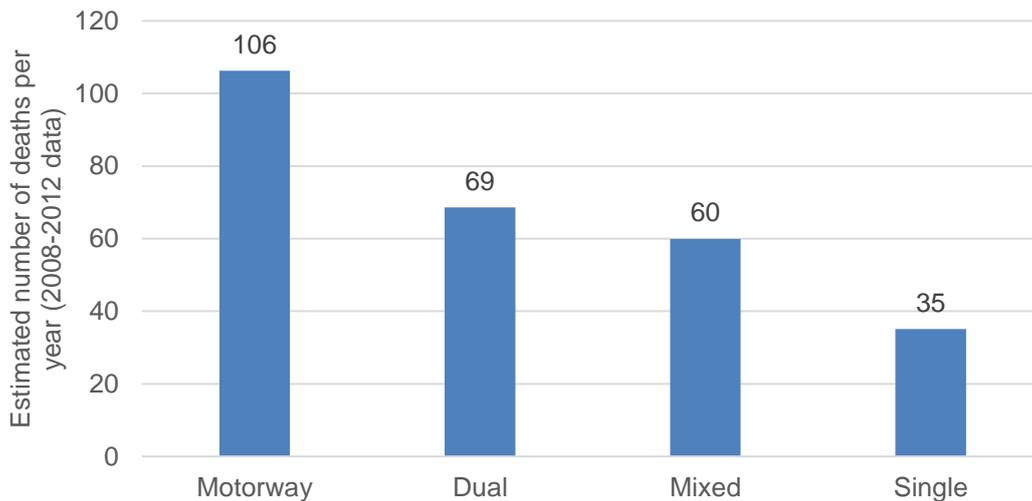
FIGURE 4.1 Distribution of traffic across SRN (2008-2012 data)



How Many Deaths are there on each Road Type?

5. The greater the traffic that a road carries, the safer it must be as any flaws result in serious consequences sooner rather than later. It is little comfort that motorways are the safest road type - more people on the SRN are killed travelling on motorways than any other road type with deaths exceeding 100 annually.

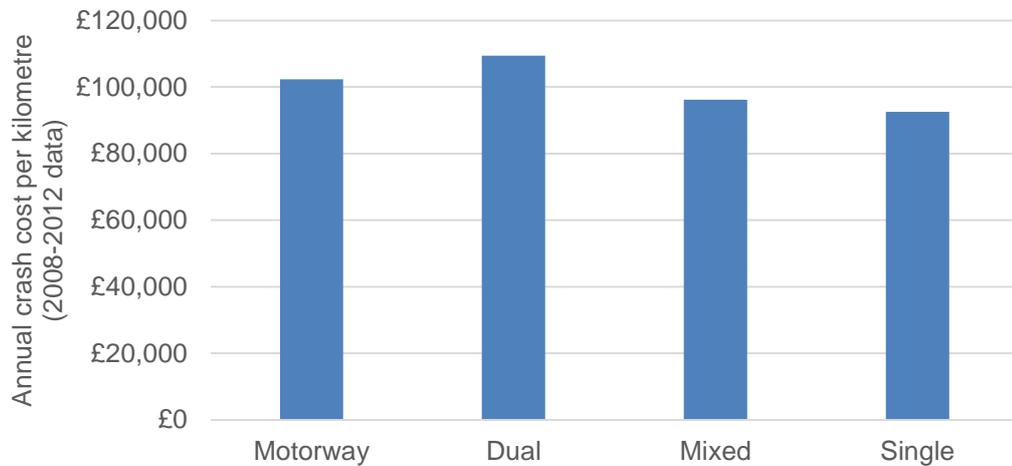
FIGURE 5.1 Average Annual Deaths across each road type 2008-2012



How Much Do Road Crashes on the SRN Cost?

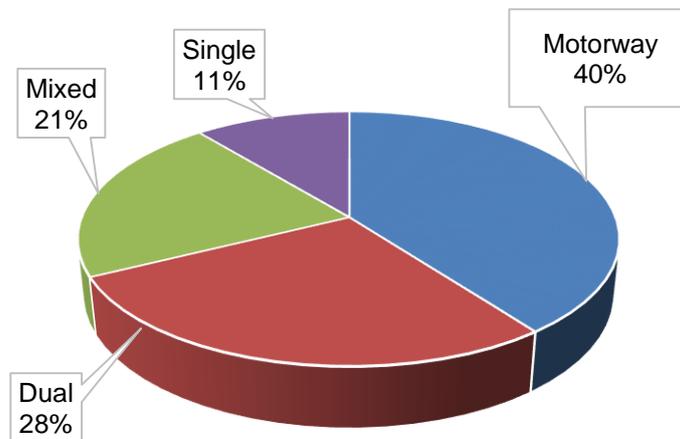
6. The RSF estimated in 2012 that around £1.2bn annually was lost in *serious* road crashes alone on the SRN as recorded by the Police (hospital records are higher) and excluding traffic delays. When a serious crash occurs on a motorway, more people are killed and serious trauma is more severe than on other road types: the cost of the consequential traffic delays is broadly as much again.
7. Dual carriageways are more than twice as risky as motorways but carry roughly half the traffic (40,000 vehicles per day); single carriageways are 5 times riskier but carry around 20% of the traffic (15,000). The economic case for action on all road types is equally compelling: the average cost of serious crashes on SRN roads of all types, excluding delays, differs little at around £100k p.a. per km as shown in Figure 7.1 below.

FIGURE 7.1 Annual Serious crash cost per km by Road Type



8. Some 40% of serious crash cost is lost on motorways, 28% on dual carriageways, 21% on mixed carriageways and 11% on singles.

FIGURE 8.1: Serious Crash Cost by Road Type



How Safe is the SRN Infrastructure?

9. The four main crash types resulting in death are:

- i) Running off the road and hitting objects (main cause of deaths)
- ii) Impacts at junctions (main cause of serious injury)
- iii) Head-on
- iv) Being hit as pedestrians or cyclists

10. Working on an international pilot exercise with the HA, the RSF inspected over 6,000km of HA network at 100 metre intervals in 2007. This work revealed:

- Around half the motorway network has issues with run-off protection
- Dual carriageways have greater problems with run-off protection and also have problems with junction layouts
- Single carriageways have widespread design problems at the traffic levels being carried

11. In 2013, the RSF assessed 300km of the 'best and worst' of the SRN to the latest widely used international benchmark (some 150,000km worldwide has been inspected and assessed with this protocol). The lessons and results of this work are currently being discussed with the Highways Agency.

12. The current work is allowing illustrative *Safer Road Investment Plans* to be generated which show how safety can be raised cost effectively across the network. International examples of raising safety to explicit safety performance include:

- the Dutch government committed in 2010 to raise all its national roads to a minimum 3-star safety level;
- the New Zealand government is targeting 4-star safety for "roads of national significance";
- the Swedish government has reported that an investment strategy that targets safety performance explicitly is far more cost effective than one which relies on general road improvement schemes delivering improved safety.
- The Swedish government also found that 1% more spent on safer design in new road schemes gave good returns. It also targets *travel* on safe roads rather than *length* of safe roads.

Road Safety Foundation
www.roadsafetyfoundation.org

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