



Road Safety Markings: Improving the driver experience and making roads safer?

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About



- Established in 1976, the RSMA represents & supports its members and the industry, promoting the importance of road markings for a safe and effective road network
- Discussion base for training and standards, including health & safety of operatives, and training operatives through the Pavement Marking Apprenticeship
- Represents circa 90% of the road marking industry by volume
- Largest specialist trade association in the highways sector
- Home of the Road Safety Surfacing Association, and the National Highways Academy



The APSE Highways, Street Lighting and Winter Maintenance Services Seminar 2017



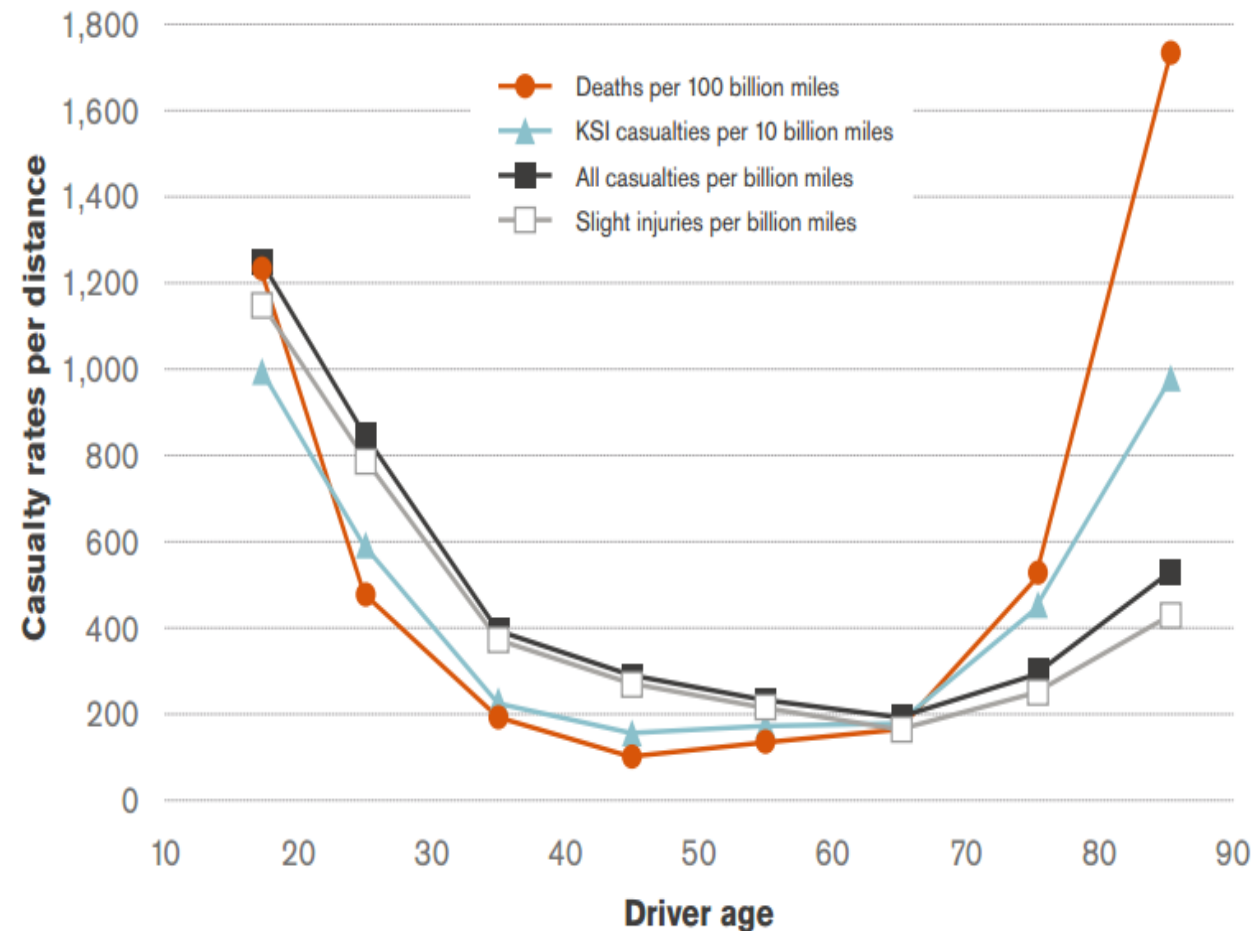
Developments in Road Markings?

Emerging risks across the Highways Sector?

Reviewing road markings through the prism of the new highways infrastructure code of practice



Older Drivers



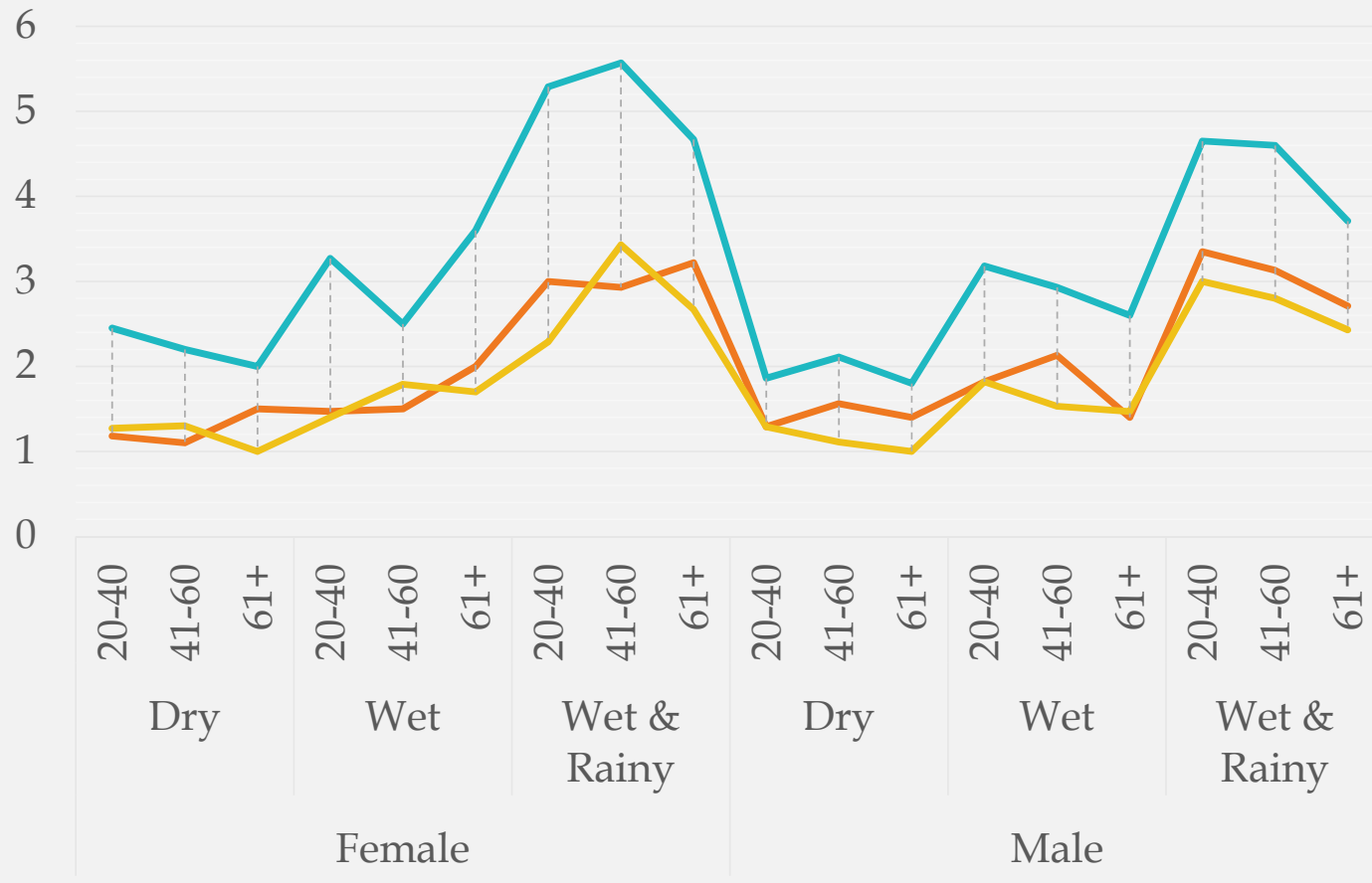
- Drivers aged 85+ expected to surpass 1 million by 2025
- Difficulty navigating complex driving situations, reduced ability to judge and adapt to speed
- Vision, reaction times and skills in executing manoeuvres decline with age
- Eye conditions/diseases, such as cataracts or glaucoma more common as age increases above 70
- Less likely to adopt and embrace new technology, e.g. autonomy



Older Drivers



— Non-Reflective — Standard Reflective — Profiled Reflective



How can road markings aid older drivers?

- Highly visible and reflective markings ensure road users stay on the correct course - improved preview time, less stressful
- Particularly beneficial in dark/wet conditions
- Ensures smooth running of traffic



Autonomy

History of Autonomous Vehicles

1948 Modern cruise control invented

1966 Mechanical antilock braking installed in a standard production car, the British Jensen FF

1968 Electronic cruise control invented

1987 Electronic stability control invented by BMW, Bosch, and Mercedes

1995 Mitsubishi Diamante introduces laser-based adaptive cruise control

2012 Nevada offers licenses for autonomous cars

2010 Google Car debuts. It takes a blind man for tacos

2007 DARPA's third driverless-car competition, the DARPA Urban Challenge

2001 Nissan Cima introduces lane-departure warning system

2014 NHTSA issues draft of proposed rule making for autonomous driving

2018-2019 Expected launch of first vehicles with vehicle-to-vehicle and vehicle-to-infrastructure communication

2020 Limited self-driving expected to begin, starting with traffic-jam assist

2030 Fully autonomous cars (with no driver backup)

2013 Mercedes "Bertha" AG takes itself on a road trip. Mercedes S-Class gets highway autonomy (but requires attentive driver as a backup)

2025 Fully autonomous cars (with driver backup) tested

2003 Toyota Harrier comes with precrash mitigation system

2032 Half of all new cars are autonomous





Autonomy



Importance of Road Markings for autonomous vehicles:

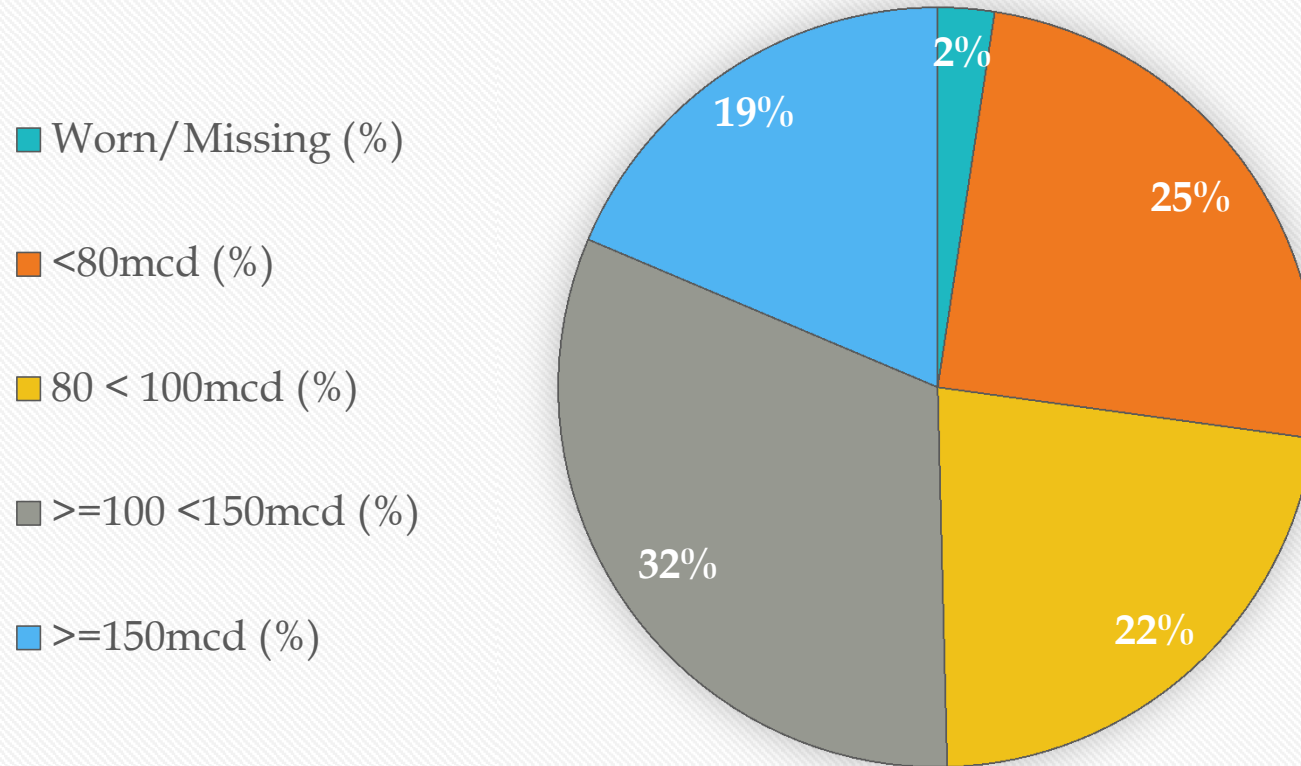
- Ensure vehicles do not drift and remain on the proper trajectory
- Cost effective to implement – no road markings mean the vehicles will cost more as more technology will need to be used
- Utilises existing road network
- Ensures road network is fit for all road users, not solely autonomous vehicles



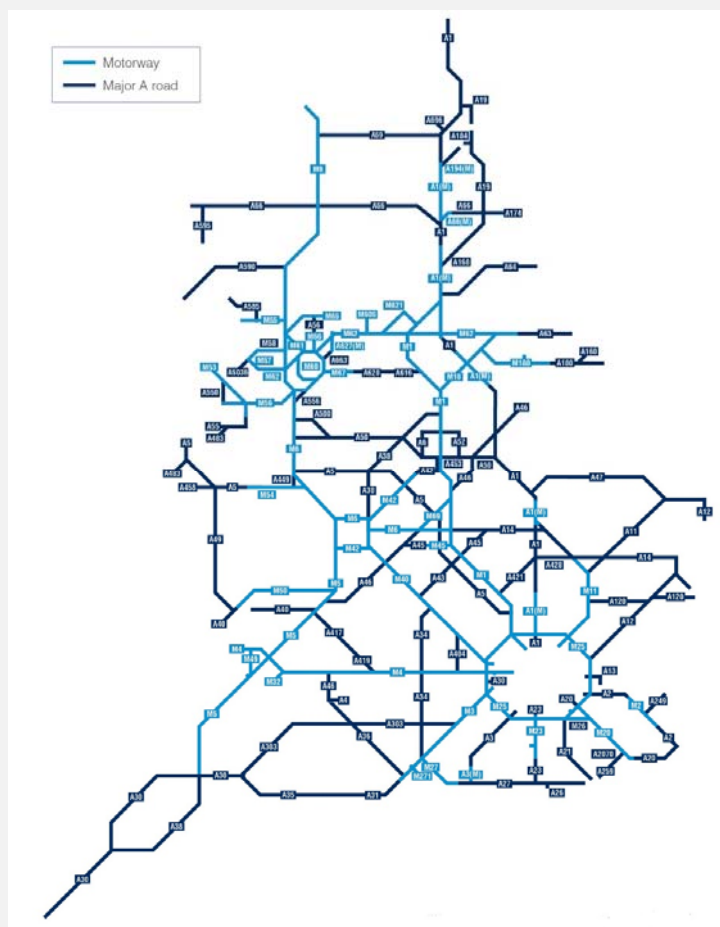
Autonomy



Summary of Lines on England's Roads



Funding



Highways England:

- Delivery of £15bn of investment on Strategic Road Network between 2015-20
- Over 100 major schemes
- Aim to prevent 2,500 deaths or serious injuries on network
- Build additional 1,300 lane miles
- By 2040, SRN aims to be “*smoother, smarter and sustainable*”



Funding



Local Authority funding:

- Disparity between HE network and LA networks
- £1.1bn to be allocated for local highway improvements
- Large Local Majors Fund
- Pothole Fund
- Local Highways Maintenance Funding
- Local Highways Maintenance Challenge Fund
- Local Highways Maintenance Incentive/Efficiency Element Funding



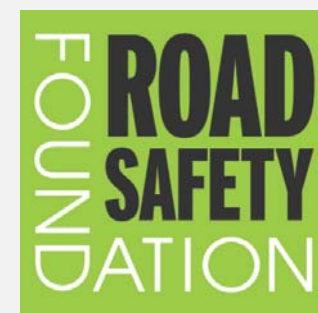
Road Safety Foundation



Making Road Travel as Safe as Rail and Air



- “Travelling on our road system could be made as safe as on rail and air within a generation.”
- Improved road markings cited in 6 out of the 10 most improved roads
- Serious crashes reduced by 68% on 10 most improved roads





Road Safety Foundation



Most Improved Road:

A227 Tonbridge to A25 (Borough Green)

Most Dangerous Road:

A285 Chichester to Petworth
£1m package of improvements
already announced for this road
alone.



50 of the most dangerous roads in England set to receive £175m upgrades



ROAD	ROUTE	REGION	LENGTH (km)	ROAD TYPE	F&S*	RISK RATING (12-14)
A285	(A27)Chichester - Petworth	SE	19	Single	23	199.6
A18	Laceby to Ludborough	EM/Y&H	16	Single	16	189.7
A588	A585 to Lancaster	NW	29	Single	28	179.2
A27	M27 J12-J11	SE	6	Mixed	22	140.0
A532	A530-A534 (Crewe)	NW	5	Single	9	134.3
A32	M27 J10-Gosport	SE	11	Mixed	33	130.1
A6	M6 J33-Lancaster	NW	9	Single	21	129.3
A361	Chipping Norton-Banbury	SE	21	Single	22	128.7
A36	M3 J2-A35	SE	7	Single	12	123.7
A643	Brighouse-Morley	Y&H	12	Single	11	117.7

*F&S - Fatal and Serious incidents

Risk Rating determined by number of F&S per billion vehicle km travelled



Highways Infrastructure Code of Practice



Key Recommendations

Inspections
Condition Surveys
Defect Repair
Network Hierarchy
Financial Plans
Lifecycle Plans
Works Programming
Minimising Clutter

END

