



B2100 ROAD SAFETY

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Acknowledgements

This paper could not have been prepared without the support, advice, suggestions and critical reviews of the many friends and neighbours who have contributed.

Dedication

This paper - and the safety changes it brings (hopefully) - is dedicated to the many families and friends who have suffered tragedy and loss on the B2100.

^{'*} - biographic note on p 10.

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1.0 Introduction

The B2100 section that is currently covered by the national speed limit spans from just west of the laybys at the brow of the hill to near to the junction with Palesgate Lane. The national speed limit is 60 mph on single carriageway roads such as this. This short paper suggests there are sound reasons to reduce the speed limit from the national speed limit to a lower limit.

2.0 Background & Accident History

Many local residents have lived in Rotherfield and, specifically, along the B2100 for between 10 and 35 years and many have witnessed a catalogue of road accidents along that stretch of road.

The recent fatality on 26th September occurred at the sharp bend downhill close to the junction with Old Forest Lane. A 21 year old young man, the driver of a Ford Fiesta, sadly died at the scene, after coming off the road and hitting a tree offside of the bend. Prior to that tragic accident, there was a road traffic accident (RTA) involving the collision of 2 vehicles outside Penn Cottage on Monday 27th July 2020, with so severe an impact that both vehicles were written off.

Many accidents have occurred on this stretch of road causing slight, serious or fatal injuries as well as animal related incidents such as deer strikes. A summary is presented below:

List of Injury Accidents on B2100 West of Rotherfield



*Copyright image
(updated, but
flags are
imprecise)*

Reported 'injuries' only

- 26-09-2020 @ 18:30 - 1 vehicle 1 fatal, 1 slight
 - 15-01-2019 @ 17:53 - 4 vehicles 3 slight
 - 28-11-2014 @ 15:07 - 2 vehicles 1 slight
 - 03-10-2009 @ 23:50 - 1 vehicle 2 slight (pedestrians)
 - 25-12-2007 @ 21:15 - 2 vehicles 2 serious
 - 30-04-2007 @ 17:58 - 2 vehicles 1 serious, 1 slight
 - 06-07-2004 @ 06:06 - 1 vehicle 1 serious
 - 20-02-2003 @ 17:00 - 1 vehicle 1 slight (pedestrian)
 - 13-07-2002 @ 09:00 - 3 vehicles 1 slight
 - 18-01-2002 @ 15:53 - 3 vehicles 2 slight
 - 07-12-2001 @ 17:15 - 1 vehicle 1 slight (pedestrian)
 - 15-02-2000 @ 19:15 - 2 vehicles 1 serious, 1 slight
 - 05-02-1999 @ 19:20 - 2 vehicles 1 fatal, 2 serious
- (Reports via Police are on a [paid database](#).)

In addition to the above list of accidents resulting in injuries that are reported, there are many ‘minor’ incidents that are not ‘reported’ – these ‘non-injury’ impacts are much more frequent, as witnessed by glass and plastic debris often found on the roadside. As one example, 3 cars ‘written off’ within sight of the rightmost red flag mapped above are not listed, as there was no injury.

The road surface is now much better than in past years following road re-surfacing. However, it seems reasonable to suggest that the likely effect has been to encourage greater speeds. Without characterising or stereotyping any particular group of drivers, recent observations indicate different vehicles - cars, motorbikes and commercial vehicles – now travel at high speed (close to 60 mph and even above that level) – seemingly oblivious to the risks.

3.0 Speed Limits

This stretch of the B2100 is covered by the national speed limit (i.e. 60 mph). However, this rural road has many access points (residents’ driveways, farm access, field gate access), a marked incline, no pavements or footpaths, almost no street lighting and several bends (some of which offer no appreciable clear sight of the road ahead), an adverse camber on one bend and solid obstacles such as trees and roadside furniture (BT poles); high hedges and tree growth further hinder good views of the road ahead.

There is little more than 1 mile between the 30 mph limit section through the village of Rotherfield to the edge of Jarvis Brook with the same 30 mph limit; there is a short section with a 40 mph limit between Clackhams Lane and Mottins Hill junctions.

Extracts from the Department for Transport Circular 01/2013; ‘Setting Local Speed Limits’ present relevant facts. ‘SECTION 7: RURAL SPEED MANAGEMENT’ para 112 states:

Rural roads account for 66% of all road deaths, and 82% of car occupant deaths in particular...

Furthermore, the Department for Transport Circular 01/2013 includes useful guidance on speed limits for single carriageway roads reproduced below:

Table 2 Speed limits for single carriageway roads with a predominant motor traffic flow function

<i>Speed limit (mph)</i>	<i>Where limit should apply:</i>
60	<i>Recommended for most high quality strategic A and B roads with few bends, junctions or accesses.</i>
50	<i>Should be considered for lower quality A and B roads that may have a relatively high number of bends, junctions or accesses. Can also be considered where mean speeds are below 50 mph, so lower limit does not interfere with traffic flow.</i>
40	<i>Should be considered where there are many bends, junctions or accesses, substantial development, a strong environmental or landscape reason, or where there are considerable numbers of vulnerable road users.</i>

Applying these considerations above would suggest that a 40 mph limit would be appropriate for the B2100 given the nature of the road’s bends, junctions, accesses, development and road use.

Given that the mean speed taken from the speed monitoring period was calculated at 40 mph, the speed limit should, at least, be lowered to 50 mph, if not to the 40 mph level.

4.0 Stopping Distance

The stopping distance is (as everyone should know from their driving test and Highway Code knowledge) made up from 2 main components: (a) Thinking Distance (which includes reaction time) and (b) Braking Distance. At 70 mph, the published Highway Code stopping distance is 96m!

Whilst it could be argued that many cars today will perform better than that with ABS and modern tyres, there are also factors that adversely affect the overall stopping distance; these include driver inexperience, impairment (drink or drugs), tiredness, lack of alertness, vehicle condition (tyre pressures and treads, suspension, weight), road and weather conditions (road incline, wetness, mud, visibility, etc.).

The stopping distances for lower speeds are dramatically reduced compared to that from 70 mph:

- At 60 mph the stopping distance drops to 73m (three quarters that from stopping from 70mph)
- At 50 mph the stopping distance drops to 53m (nearly half that from stopping from 70mph)
- At 40 mph it drops to 36m (nearly a third that from stopping from 70 mph)!

The significance of driver distraction is alarming when added to the stopping distances above. Travelling at 60 mph equates to travelling 1 mile per minute or approximately 30m per second. So, if a driver is distracted by a phone, audio, looking at the view, dropping something or turning to speak to a passenger, then they can travel a considerable distance before they even start to stop!

Taking the above together, it can be seen that vehicles could travel 73m (stopping quickly from 60 mph), or 103m (stopping from 60 mph with a 1 second distraction delay) to an alarming 126m (stopping from 70 mph with a 1 second distraction delay). Given the topography of the B2100 Rotherfield to Jarvis Brook road, particularly the incline and bends in the road, there are restricted sight lines along the road's length; from map analysis and pacing the road, sight lines hardly exceed 100m (a detailed survey would corroborate this). Hence, a resident can be safely pulling out onto the B2100 with a clear road and then, if an oncoming vehicle is travelling at 60 - 70 mph, that oncoming vehicle may not stop in time and will either collide with the resident's vehicle or skid off the road into the bank, verge or field and likely overturn (as has happened in the past on this stretch of road).

The Department for Transport Circular 01/2013 includes useful guidance on speed limits for single carriageway roads, as noted previously; applying these considerations would suggest that a 40 mph limit would be appropriate (or at least lowering the limit to 50 mph).

5.0 Risk Management

Risk is widely accepted as being a combination of 2 factors: probability and severity. Applying such an approach to RTAs on the B2100, the severity of any collision could be lessened by a number of measures such as wearing crash helmets or fitting roll cages, exactly as happens in motor racing since it is expected that a collision is likely (high probability), so the precautions address the severity and aim to minimise driver injury. On the public highway, taking such precautions would be excessive. Turning to the probability factor, we know that stopping distances dramatically decrease as speeds drop (see above figures). Reducing travelling speeds from 70 to 50 mph or from 60 to 40 mph, cuts the stopping distances by about half. That makes the probability of vehicle collision very much lower.

Given both of the above perspectives suggesting good reasons for reducing the speed limit, it might prompt questions as to the frequency and severity of RTAs on this stretch of road. Whilst some RTAs involve serious injury where the police attend the scene (and these are recorded), it is suggested that many incidents are just that - 'incidents' - where no visible injury is seen. Damage to vehicles and emotional and mental stress, trauma and shock are all too real but these incidents may not be reported and therefore not registered as such in official accident statistics.

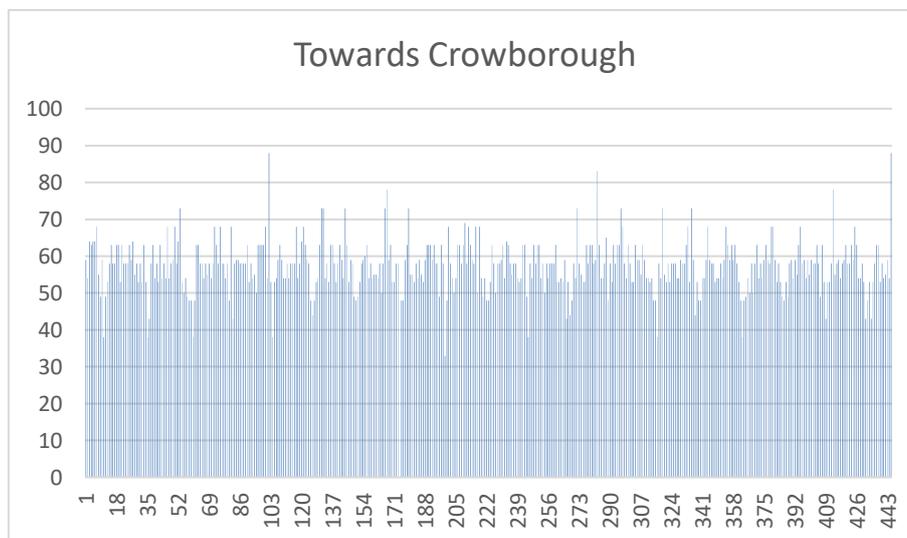
Delays caused by congestion in Rotherfield village may contribute to these high speeds westbound downhill in attempting to make up time or out of frustration; neither of which make for good road safety but just increase the risks of accident.

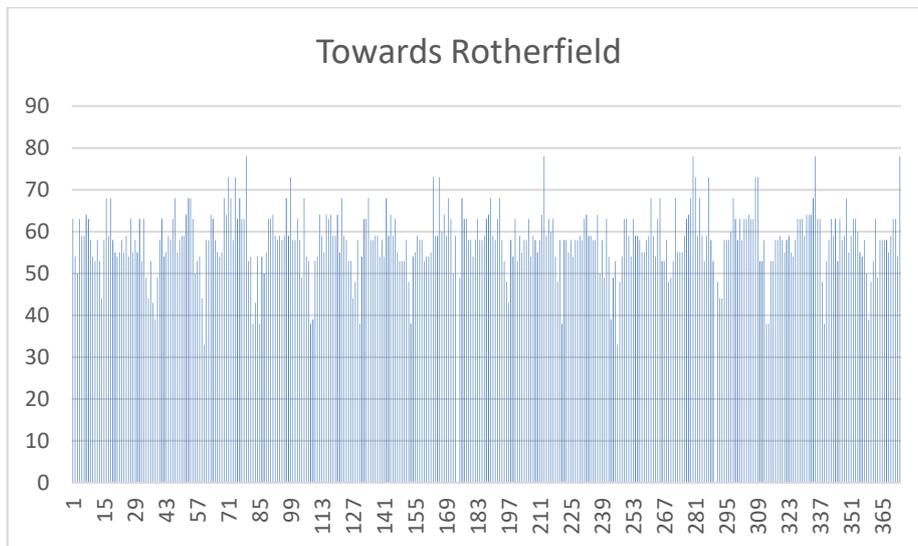
6.0 Speeding

The accident in July led to the positioning of the Speed Indicator Monitor at that location by the Parish Council; it recorded speeds from 30th July to 3rd September 2020 on the B2100 Rotherfield to Jarvis Brook road (Church Road/Rotherfield Road) detecting a total of 106,700 vehicles.

This recent speed monitoring data has been examined and a number of findings reached:

1. The vast majority – **over 99%** - of road users seem to be driving **under the national speed limit of 60 mph; only 0.3% were recorded at over 60 mph.**
2. The proportion of drivers recorded at **under 50 mph was 97% towards Crowborough and 96% towards Rotherfield;**
3. The proportion of drivers recorded at **under 40 mph was 64% towards Crowborough and 57% towards Rotherfield;**
4. The **average speed** was calculated at **40 mph** – in both directions;
5. **Maximum speeds** detected and recorded on an **hourly basis** ranged from **33 to 88 mph.** These hourly maximum speeds are charted below – towards Crowborough and towards Rotherfield: the y axis is maximum speed in each one hour period of monitoring and the x axis is the count (number of maximum speeds recorded).





6. These data present some alarming figures; looking at the distribution of **maximum speeds**, there is a significant proportion of speeds over 60 mph.
7. The highest maximum speed recorded was **88mph** – on Tuesday 4/8/20.
8. The count (number of times) that the 60 mph limit was exceeded is summarised below:

	mph 60- bands 64	65- 69	70- 74	75- 79	80- 84	85- 89	Totals
Toward Crowborough Count	100	23	10	3	1	1	138
Toward Rotherfield Count	122	26	10	4	0	0	162
							300

Although it should be acknowledged that the vast majority of road users abide by the current 60 mph limit, there are a significant number who exceed this; in the monitoring period (approx. half from Rotherfield and half into Rotherfield), there were a total of **300 instances of over 60mph!**

These data are presented graphically below:



9. Looking at each travel direction:

- In the monitoring period for outbound (30/7/20 to 18/8/20) there were **138 instances recorded of speeds of 60 mph or greater.**
- In the next period, inbound (18/8/20 to 3/9/20) there were **162 instances recorded of speeds of 60 mph or greater.**

These figures show that, on average, we are seeing **between 7 and 10 instances per day of driving speeds at 60 mph and over!**

7.0 Petition

A local petition is in progress demonstrating the level of support for positive changes to road safety on the B2100. This petition has been instigated by a local resident involved in a recent accident:

‘After yet another tragic fatal accident on the bend down the hill, and my own ‘write-off’ the month before as I pulled out of our gateway, we talked to neighbours and the Parish Council and thought a petition to the Highways Authority might be useful to promote further safety measures.’ *Jane-Ann Withers*

The petition can be found at: <http://chng.it/JYsNgCbQ>

The results of this petition will be submitted under separate cover.

8.0 Cost-Benefit

In considering a reduction to the speed limit, it is recognised that some cost is involved, specifically new road signage. However, the benefits are many-fold; clearly, from saving human trauma but also avoiding the financial costs of vehicle damage and repairs to roadside structures. Pedestrians and cyclists would also benefit from a lower speed limit offering greater safety and comfort. Any delay in journey time is miniscule (seconds) given the short distance from one 30 mph area (Rotherfield) to the next 30 mph area (Jarvis Brook).

Apart from the impacts on human life, there have been numerous accidents that have involved wildlife; from impacts with deer that have killed the animal or injured the beast so badly that it had to be put down, to the many collisions, deaths or near misses with badgers, foxes, squirrels and other small animals.

The Department for Transport Circular 01/2013 states:

Many of the costs and benefits do not have monetary values associated with them, but traffic authorities should include an assessment of the following factors:

- *collision and casualty savings*
- *conditions and facilities for vulnerable road users*
- *impacts on walking and cycling and other mode shift*
- *congestion and journey time reliability*
- *environmental, community and quality of life impact*

It is suggested that the cost-benefit is significantly weighted towards action – reducing the speed limit. It seems appropriate to extend the 40 mph limit section to cover the section currently covered by the national speed limit on the B2100.

9.0 Change Needed

The majority of road users drive within the current 60 mph limit but the few who exceed this limit do so without heeding the risks to themselves or others who may be driving, walking, cycling or just emerging from their driveway onto the road.

The recent speed monitoring data indicates that **97 % of road users already drive at under 50 mph and 60% under 40 mph**, so changing the speed limit to 50 mph, or even to 40 mph, would not impose any significant traffic flow restriction. It might, however, slow down those few who drive at excess speeds. A reduction in the speed limit alone is not enough, the speed limit must be enforced.

The recent petition calls for the relevant authorities to act.

Improvements to road safety are needed now by:

- 1. lowering the speed limit to 40 mph;**
- 2. enforcing the new speed limit** with a permanent speed monitor display and occasional speed traps; and
- 3. improving road safety** – by removing roadside obstacles and installing additional safety signage.

10.0 Conclusion:

The above review, together with the strong support of local residents and users of the B2100 as evidenced through the petition, suggest that the speed limit should be reduced to 40 mph (or at least 50 mph) and that the speed limit should be enforced.

‘’ Biographic Note:*

Dr Kempton has lived in Rotherfield for the past 12 years, returning to East Sussex since childhood when he attended Stonegate Primary School and then Mayfield College. At University, he gained his first degree in Environmental Sciences and then his PhD doctorate from Imperial College London in Public Health Engineering. He has had a broad career in environmental, safety, risk and property management consultancy advising clients in both the private and public sectors, nationally and internationally. He chaired various HAZOP Committees, acted as CDM Planning Supervisor and Technical Adviser on major healthcare schemes. He is a trained Lead Quality Auditor. He served as Main Board Director and as Director of Property, Safety, Health, Environment & Quality.

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