



We believe the government's proposal to increase the motorway¹ speed limit to 80mph is inhumane and environmentally irresponsible.

It has been predicted by experts it would result in more violent road deaths and serious injuries, causing unnecessary trauma and suffering among more families each year.

It would also result in increased carbon emissions, contributing to climate change, and an increased financial burden on drivers, the NHS and emergency services.

A government-commissioned report into the impact of raising the motorway speed limit tells this story clearly, and yet the government has chosen to press ahead with a pilot of 80mph limits. Given the evidence below, we call on the government to abandon its proposals for, and trial of, 80mph limits. We call on the government to instead set out how it will deliver benefits to society, the environment and our economy by better managing speeds and working to prevent needless, devastating and costly crashes and casualties on these roads.

The economic truth

We have calculated the economic costs to the public of increasing the motorway speed limit to 80mph, using academic research and publicly available statistics, as being **£1 billion**. This breaks down as follows.

Cost of reported casualties: £62.4 million

Norwegian academic Rune Elvik, known for a widely accepted statistical model charting the relationship between speeds and casualties, recently predicted that an increase in average traffic

¹Use of the term 'motorway' in this report should be understood to also apply to dual carriageways as the proposed 80mph limit may also apply to some dual carriageways.

speeds of just 3mph – a typical change for a 10mph rise in the limit – would be expected to increase deaths by more than 20%, causing more than 25 extra deaths a year and more than 100 extra serious injuries². The Department for Transport has stated this is the model they will use to predict the effect of increasing motorway speed limits³. Elvik did not publish a prediction of the number of slight injuries caused by an increase in the speed limit, but we have used his prediction for increased deaths and serious injuries.

In 2009, the Department for Transport commissioned a report by Transport Research Laboratory to look at the impact of potential policy changes, including increasing the motorway limit to 80mph⁴. Researchers worked on the assumption that the government would simultaneously implement a network of 800 average speed cameras to enforce this increased limit. Despite this assumption, it predicted a raised limit would result in an additional reported 18 deaths, 64 serious injuries, and 363 slight casualties. Their predictions of casualty increases are lower than Elvik's, because of the assumption of dramatically increased enforcement. We have used the figure for slight injuries from this report to calculate costs incurred through slight casualties, although it is likely the figure would be much higher if the government did not simultaneously create a network of average speed cameras to enforce the raised limit, which it has not announced any plans to do. The figure for slight casualties in the table below is thus a low estimate.

Using the most recent Department for Transport estimates on the value of reported road casualties⁵, we have calculated the economic cost of the proposed increase in speed limits in terms of increased casualties. These costs include costs to health and emergency services and the criminal justice system, loss of earnings, and 'human costs', which aim to quantify the terrible impact on bereaved and injured individuals.

Road casualty type	Additional annual reported casualties predicted from increase in motorway speed limit	Cost per reported casualty	Total annual cost
Fatal	25	£1,585,510	£39,637,750
Seriously	100	£178,160	£17,816,000

² Walker, P., 2011. 80mph speed limit 'would increase deaths by 20%' *The Guardian*, 25 December

³ *ibid*

⁴ Sexton, B. and Johnson, B., 2009. An evaluation of options for road safety beyond 2010, *Transport Research Laboratory* Available at:

<http://www.trl.co.uk/online_store/reports_publications/trl_reports/cat_road_user_safety/report_an_evaluation_of_options_for_road_safety_beyond_2010.htm>

⁵ Department for Transport, 2011. *Reported road casualties in Great Britain: annual report 2010*, London: Department for Transport, Available at: <<http://www.dft.gov.uk/statistics/releases/road-accidents-and-safety-annual-report-2010>>

injured			
Slightly injured	363	£13,740	£4,987,620
Total			£62,441,370

Some argue the impact on reported casualties could be mollified by introducing more variable speed limits. We argue that defending an increase in motorway speed limits by saying it could be lowered again on some sections is illogical. The cost of setting up enough variable limits to prevent an increase in casualties would also undermine the economic reasoning being used by government for raising the limit in the first place⁶.

Environmental cost: £180.4 million

When driving at faster speeds, drivers use more fuel and produce more carbon emissions. At 80mph, a petrol car emits 14% more CO₂ per kilometre than at 70mph, while diesel cars emit 25% more⁷.

A 2011 report by the Committee on Climate Change, a body with a statutory role in reporting to parliament on government progress on reducing carbon, predicted an increase in the motorway speed limit to 80mph would result in an additional 2.2m tonnes of CO₂ per year⁸.

Using a carbon cost of £82 per tonne of carbon in 2012, taken from a report by Department of Environment, Food and Rural Affairs to HM Treasury⁹, We calculate the environmental cost of raising the motorway speed limit to 80mph to be £180,400,000.

Increased carbon emissions annually	Environmental cost per tonne of carbon	Annual environmental cost of raising motorway speed limit
2,200,000 tonnes	£82	£180,400,000

Costs to drivers: £766.6 million

⁶ Variable speed limits now operate on sections of the M25, M42, M6, M1 and M20. Subject to successful completion of statutory processes the Highways Agency will commence work on 11 managed motorways schemes between 2012 and 2015 costing around £1billion. Information accessed on 9 May 2012 at:

<<http://www.highways.gov.uk/knowledge/11512.aspx>>

⁷ UK Energy Research Centre, 2006. *Quick Hits 2: limiting speed*, London: UK Energy Research Centre, Available at: <<http://www.eci.ox.ac.uk/research/energy/downloads/qh2-limitingspeed.pdf>>

⁸ Committee on Climate Change, 2011. *3rd Progress Report to Parliament*, London: Committee on Climate Change, Available at: <<http://www.theccc.org.uk/reports/3rd-progress-report>>

⁹ The most sophisticated method of calculation produces an estimate of approximately £70 per tonne of carbon for carbon emissions in the year 2000. This increases by approximately £1 per tonne per year in real terms for each subsequent year to account for the increasing damage costs over time. Department of Environment, Food and Rural Affairs, 2002. *Estimating the Social Cost of Carbon Emissions*, London: Department of Environment, Food and Rural Affairs, Available at: <<http://www.hm-treasury.gov.uk/d/SCC.pdf>>

Raising the motorway speed limit to 80mph will increase fuel consumption and therefore costs to drivers.

Using Department for Transport data on motorway speeds, consultants MTRU commissioned by Campaign for Better Transport modelled the additional fuel costs drivers could expect to pay given an increase in the motorway speed limit to 80mph¹⁰, based on an average speed increase of 7mph. Their calculation accounted for existing speeding above the 70mph limit, and only provides a figure for additional fuel costs on top of this. They found drivers can expect to pay dearly for an increase in the speed limit.

	Increased costs to drivers from move to 80mph limit (above existing costs from speeding)
Fuel resource cost	£274,780,000
Fuel duty	£364,020,000
VAT	£127,760,000
Total	£766,560,000

Potential economic benefits

The government has argued that benefits of increasing the limit outweigh costs, including human costs^{11, 12, 13}. In this section possible economic benefits are scrutinised, but we do not believe a government should ever sacrifice innocent people to a violent, unnatural death for economic benefit. The No to 80 coalition believes pursuing a policy that is expected to result in more man-made, violent and preventable deaths in search of economic gain is unjustifiable.

Time savings: estimates vary between zero and £561.9 million

The Transport Committee Report on Road Traffic Speed found higher speeds would do little to reduce journey times; on the congested motorways of England an 80mph limit might well increase them because it would create an uneven flow¹⁴.

¹⁰ Campaign for Better Transport, 2011. *Briefing on the relative impact on fuel duty and time savings with speed limits of 70mph and 80mph*, London: Campaign for Better Transport, Available at: <<http://www.bettertransport.org.uk/system/files/relative-impact-on-fuel-duty-80mph.pdf>>

¹¹ Wilson, G., 2011. Speed limit to rise to 80mph, *The Sun*, 30 September

¹² Carrington, D., 2011. Speed limit rise would increase deaths and pollution, admits government, *The Guardian*, 30 September

¹³ Brunt, M., 2011. Motorway Speed Limit Set To Rise To 80mph, Sky News 30 September

¹⁴ Transport, Local Government and the Regions Committee, 2002. *Road Traffic Speed: ninth report*, London: Transport, Local Government and the Regions Committee, Available at: <<http://www.publications.parliament.uk/pa/cm200102/cmselect/cmtlgr/557/557.pdf>>

TRL estimates an average time saving of 4.1 minutes per hour of journey, costing this at £2,159,000,000 over ten years, or around £215,900,000 annually¹⁵. However, the author added a qualification that “the value is positive due to a large off-set for the decrease in journey time even though the previous illegal journey time is not included, i.e. some previous illegal journey time becomes legal but it is not included in the estimate.” From this we can assume the true value of time savings is lower.

Campaign for Better Transport use a figure calculated from the Department for Transport WebTAG model¹⁶ using an average speed increase of 7mph, giving an economic cost saving of £561,890,000 compared to non-compliance with the 70mph limit¹⁷.

Clearly there is disagreement among researchers, so the debate would benefit from further research to clarify the impact of uneven flow, congestion and existing speeding on the potential economic benefits of time savings from an increased limit.

What is clear is that potential time savings have been overplayed. Phillip Hammond MP, former Transport Secretary, claimed ‘huge time savings’ are a principal benefit of the proposal¹⁸. Yet the increase would make no difference to haulage operators’ journey times, as most trucks are speed limited to 56mph. And to the ordinary driver time savings are negligible. A drive from London to Birmingham, which is 118 miles, of which 108 is on motorways, could potentially see a time saving of 11 minutes and 35 seconds, assuming you were able to drive at the speed limit for the entire motorway route, which is often not possible due to congestion. In reality the difference to drivers is negligible, about the time it takes to take a short break from driving to have a coffee, but the difference to families living with the devastation of losing a loved one in a motorway crash really is ‘huge’.

Cash to the treasury: £491.8 million

Campaign for Better Transport critically analysed the fuel costs that would be incurred by drivers if the speed limit increased to 80mph. It calculated that the government stands to make nearly half a

¹⁵ Sexton, B. and Johnson, B., 2009. An evaluation of options for road safety beyond 2010, *Transport Research Laboratory* Available at:

<http://www.trl.co.uk/online_store/reports_publications/trl_reports/cat_road_user_safety/report_an_evaluation_of_options_for_road_safety_beyond_2010.htm>

¹⁶ Department for Transport, 2011. Guidance documents – Expert TAG Unit, London: Department for Transport, Available at: <<http://www.dft.gov.uk/webtag/documents/expert/unit3.5.6.php#01>>

¹⁷ Campaign for Better Transport, 2011. *Briefing on the relative impact on fuel duty and time savings with speed limits of 70mph and 80mph*, London: Campaign for Better Transport, Available at:

<<http://www.bettertransport.org.uk/system/files/relative-impact-on-fuel-duty-80mph.pdf>>

¹⁸ Brunt, M., 2011. Motorway Speed Limit Set To Rise To 80mph, *Sky News* 30 September

billion pounds annually through increased fuel tax and VAT¹⁹. Clearly in a time of economic crisis every penny to help pay off public debt will be welcomed by the government, but surely not at the cost of lives?

Variable speed limits

Some politicians have argued that 80mph limits should be introduced only on sections of motorways that have variable speed limits, such as 'managed' and 'controlled' motorways with digital enforcement cameras. However, while variable limits have been shown to reduce casualties by reducing overall speeds, studies are limited, making it difficult to draw conclusions about the extent to which they would prevent casualties if rolled out more widely. We are therefore concerned there is insufficient evidence that variable limits would fully negate the additional crash risk caused by 80mph, and argue politicians shouldn't barter with policies which risk lives.

The number of motorways with variable limits is set to increase, but remains a small proportion of the network at present. Of the 2,211 miles of motorway in Great Britain, 3.5% currently have variable speed limits. By 2015, this will be extended to 8.3% and by 2020 to 12.3%. In announcements in 2010 and 2011 the government committed a total of £3.3 billion to spending on major roads through to the end of 2014/2015, a major proportion of which is being spent on 13 new sections of managed motorways.

There have been limited evaluations of controlled and managed motorways in the UK. A 2004 report²⁰ on variable speed limits on the M25 found injury crashes reduced by 10%, taking general trends into account. The only evaluation of a managed motorway in the UK is of a 12 mile stretch on the M42²¹. Although the evaluation revealed a 56% reduction in injury crashes, its conclusions were limited due to its very small dataset and because it did not take account of wider reported casualty reduction trends over the period.

Variable limits may reduce crashes by 5% - 25% by temporarily lowering speed limits in risky conditions²². Their impact varies according to how they are used and the roads they are used on, but the main safety benefits comes from lowering speeds. The longer and more frequently the limit

¹⁹ Campaign for Better Transport, 2011. *Briefing on the relative impact on fuel duty and time savings with speed limits of 70mph and 80mph*, London: Campaign for Better Transport, Available at:

<<http://www.bettertransport.org.uk/system/files/relative-impact-on-fuel-duty-80mph.pdf>>

²⁰ Highways Agency, 2004. *M25 Controlled Motorways Summary Report*, London: Highways Agency, Available at:

<http://www.dft.gov.uk/ha/standards/pilots_trials/files/ha2004.pdf>

²¹ Highways Agency, 2001. *M42 MM Monitoring and Evaluation: Three Year Safety review*, London: Highways Agency, Available at: <http://www.highways.gov.uk/knowledge_compendium/assets/documents/Portfolio/HCG-HRG_264763_001b_V2__2_.doc.pdf>

²² *ibid*

is lowered, the greater the safety benefits²³. However, the safety benefit of variable limits is less on roads that are typically congested, due to average speeds already being lower²⁴.

We are concerned that even limiting 80mph limits to managed motorways could still result in an overall increase in crashes, as there is insufficient evidence to show that variable limits would negate the additional crash risk caused by 80mph limits. Conversely, the existing planned roll-out of variable speed limits to a greater proportion of our motorway network is likely to deliver benefits to both journey times and safety (although this is difficult to quantify). If the government opted to introduce higher upper limits on these stretches of road, it would at least partially negate the safety benefits of the programme, reducing its value to the public and government in terms of human and economic costs.

The human truth

Victims of road crashes suffer horrendous trauma, because of the violent and unexpected nature of the death or injury. Bereaved relatives may have said goodbye to their loved one that morning, never to see them again and sometimes never even to see their body again because of the violence of the death. In this way, their whole future is snatched away from them in an event that is unnatural and avoidable. Serious injury victims may have their lives turned entirely upside down. They may be unable to work, have to move home, have severely impeded mobility, and may require round the clock care for the rest of their lives.

Bereaved and injured victims often suffer from psychological disorders, such as Post Traumatic Stress Disorder as a result of their ordeal. They often suffer from financial hardship due to lost earnings. Many families struggle to manage with the multiple burdens of psychological, physical and financial hardship. These difficulties are acute, long-lasting, and have profound implications on quality of life²⁵.

The government's proposal would result in 25 more families suffering the unimaginable trauma of

²³ Lee, C., Hellinga, B., Saccomanno, F., 2006. Evaluation of variable speed limits to improve traffic safety, *Transportation Research Part C: Emerging Technologies*, 14(3) pp.213-228. and Lee, C., Hellinga, B., Saccomanno, F., 2004. Assessing Safety Benefits of Variable Speed Limits, *Transportation Research Record: Journal of the Transportation Research Board*, 1897 pp.183-190.

²⁴ Abdel-Aty, M., Dilmore, J. and Dhindsa, A., 2005. Evaluation of variable speed limits for real-time freeway safety improvement, *Accident Analysis and Prevention*, 38(2), pp.335-345. and Abdel-Aty, M., Dilmore, J. and Hsia, L., 2007. Applying Variable Speed Limits and the Potential for Crash migration, *Transportation Research Record: Journal of the Transportation Research Board*, 1953 pp.21-30.

²⁵ As documented through Brake's support helpline, and shown in research such as: European Transport Safety Council, 2007. *The social and economic consequences of road traffic injury in Europe*, Brussels: European Transport Safety Council, and European Federation of Road Traffic Victims, 1995. *The impact of road death and injury*, Luxembourg: European Federation of Road Traffic Victims

their loved one being killed every year and a further 100 families coping with the ordeal of a serious injury²⁶, some of which will be life-long debilitating injuries such as brain injury, loss of limbs and paralysis.

We call on the government to abandon its proposals for, and trial of, 80mph limits. We call on the government to instead set out how it will deliver benefits to society, the environment and our economy by better managing speeds and working to prevent needless, devastating and costly crashes and casualties on these roads.

Published 18 May 2012, www.noto80.org

²⁶ Walker, P., 2011. 80mph speed limit 'would increase deaths by 20%' *The Guardian*, 25 December