Title: Raising the speed limit for HGVs >7.5T on dual carriageway roads **IA No:** DfT00280 **Lead department or agency:** Department for Transport **Other departments or agencies:** None	**Impact Assessment (IA)** **Date:** 23/09/2014 **Stage:** Final **Source of intervention:** Domestic **Type of measure:** Primary legislation **Contact for enquiries:** Alanna.Barber@dft.gsi.gov.uk

Summary: Intervention and Options

RPC Opinion: EANCB Validated

Cost of Preferred (or more likely) Option				
Total Net Present Value	**Business Net Present Value**	**Net cost to business per year** (EANCB on 2009 prices)	**In scope of One-In, Two-Out?**	**Measure qualifies as**
£0m	£0m	£0m	Yes	Zero net cost

What is the problem under consideration? Why is government intervention necessary?

On dual carriageways the speed limit for HGVs>7.5T is 50 mph. The average actual speed at which these HGVs travel in free flow conditions (when they are not held up by other traffic or obstructions such as junctions, hills or bends) is about 53 mph (excludes rigid 2 axle HGVs)[1]. More than 80% of HGVs exceed 50 mph in free-flow conditions. The limit is out of date and systematically ignored by professional HGV drivers. The proposal is to raise the speed limit on dual carriageway roads for these vehicles to 60mph, which would better reflect the capabilities of modern HGVs. Government intervention is necessary because speed is regulated by government, through speed limits, in order to balance the private benefits of speed of travel with the social costs and risks (such as related to safety) of high speeds.

What are the policy objectives and the intended effects?

The intention is to modernise the speed limit, improve compliance, make the limit more credible and legitimise the behaviour of professional drivers. It would also be a deregulatory move. This measure links with the Government's decision to raise the speed limit for HGVs>7.5T on single carriageway roads from 40mph to 50mph.

What policy options have been considered, including any alternatives to regulation? Please justify preferred option (further details in Evidence Base)

Three options are considered in the consultation:
1) Do Nothing (the baseline comparison)
2) Increasing the national speed limit for HGVs>7.5t on dual carriageways from 50 to 55mph.
3) Increasing the national speed limit for HGVs>7.5t on dual carriageways from 50 to 60 mph. This is the preferred option (policy option 1 in this impact assessment).

The speed limit cannot be changed without regulation.

Will the policy be reviewed? It will be reviewed. **If applicable, set review date:** April 2020

Does implementation go beyond minimum EU requirements?			N/A		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	**Micro** Yes	**< 20** Yes	**Small** Yes	**Medium** Yes	**Large** Yes
What is the CO_2 equivalent change in greenhouse gas emissions? (Million tonnes CO_2 equivalent)			**Traded:** N/A	**Non-traded:** N/A	

I have read the Impact Assessment and I am satisfied that, given the available evidence, it represents a reasonable view of the likely costs, benefits and impact of the leading options.

Signed by the responsible Minister: ..... Date: .....

[1] See note at Annex

Summary: Analysis & Evidence

Policy Option 1

Description: Increasing the national speed limit for HGVs>7.5t on dual carriageways from 50 to 60 mph.

FULL ECONOMIC ASSESSMENT

Price Base Year	PV Base Year	Time Period Years	Net Benefit (Present Value (PV)) (£m)		
			Low: NQ	**High:** 92.04	**Best Estimate:** 0

COSTS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Cost (Present Value)
Low	NQ		NQ	**NQ**
High	0.0		0.6	**4.9**
Best Estimate	0		0	**0**

Description and scale of key monetised costs by 'main affected groups'

None, as we do not expect HGVs to increase speed as a result of this proposal. Transitional costs to Government associated with this measure would be incurred with the transitional costs from the HGV >7.5T speed limit change on single carriageways; there would not be additional costs. In our sensitivity test of a 1mph increase in actual speeds, there would be a small increase in accidents, of the order of 1 fatal accident per decade.

Other key non-monetised costs by 'main affected groups'

None

BENEFITS (£m)	Total Transition (Constant Price)	Years	Average Annual (excl. Transition) (Constant Price)	Total Benefit (Present Value)
Low	NQ		NQ	**NQ**
High	0.0		11.3	**96.9**
Best Estimate	0		0	**0**

Description and scale of key monetised benefits by 'main affected groups'

None, as we do not expect HGVs to increase speed as a result of this proposal. In our sensitivity test, employing analysis from international studies of a 1mph increase in actual speeds, would create a saving for business as a result of decreased travel times.

Other key non-monetised benefits by 'main affected groups'

Government would see a reduction in costs associated with dealing with HGV>7.5T speed limit offenders on dual carriageways, as compliance will improve substantially. A reduction in proceedings will also have benefits for businesses that currently receive a fixed penalty notice or are taken to court. However these benefits are expected to be negligible due to the current low levels of enforcement.

Key assumptions/sensitivities/risks — **Discount rate** 3.5%

We have assumed that HGV drivers will not choose to travel faster on dual carriageways than on motorways, and consequently that the average free-flow speeds on dual carriageways will not change. If this is not correct, there could be congestion, environmental, road safety and business impacts (primary journey time savings) which we have not taken into account, although some of these have been illustrated in our scenario testing.

BUSINESS ASSESSMENT (Option 1)

Direct impact on business (Equivalent Annual) £m:			In scope of OITO?	Measure qualifies as
Costs: 0	**Benefits:** 0	**Net:** 0	Yes	Zero net cost

Evidence Base (for summary sheets)

Policy Options

Policy Context

The maximum speed limit for Heavy Goods Vehicles (HGVs) over 7.5 tonnes (t) on dual carriageway roads is currently 50 mph, as prescribed in Schedule 6 of the Road Traffic Regulation Act 1984, which applies to Great Britain. Vehicle specific speed limits are devolved in Northern Ireland and in Scotland they became devolved matters in 2012 allowing the limits there to be different from the rest of Great Britain.

Dual carriageway roads cover a range of standards of roads ranging from those built to similar standards as motorways (for example the A3 between London and Portsmouth and part of the A14 between the A1 and the M1/M6) to lower standard routes with local 50 mph maximum speed limits applying to all vehicles using them. Dual carriageways in urban areas are usually covered by 40 mph or 50 mph local speed limits or the default 30 mph speed limit for lit roads in built-up areas.

On dual carriageways the actual speed at which HGVs>7.5T travel in free flow conditions (when they are not held up by other traffic or obstructions such as junctions, hills or bends) is around 53 mph[1]. More than 80% of HGVs >7.5T exceed the speed limit in free-flow conditions[2].

The systematic and rigorous enforcement of the current 50 mph speed limit is difficult and establishing a credible deterrent for the 50 mph limit would not be a reasonable call on finite police resources. It is more difficult to automate using cameras than road speed limits. If a lot more enforcement of the 50mph limit did occur it would involve the disproportionate targeting and punishment of these drivers.

The change will apply to England and Wales. HGVs will still have to obey the maximum speed for the road if it is set at a lower speed than 60 mph. Their speeds will also be determined by speed limiters which must be set at 56 mph (although the equipment does allow slightly higher speeds at times related to equipment tolerances and gradients for example).

Policy Objective

The policy objective is to modernise the speed limit for HGVs>7.5T on dual carriageways, increasing compliance, making it more credible and legitimising the current behaviour of professional drivers. It is also a deregulatory move.

Expected Impact

We do not expect that this policy will result in a change in the average speed of HGVs. This is because:

- The current average speed travelled by HGVs on dual carriageways (where the speed limit is 50 mph) is 53 mph
- On motorways, the HGV speed limit is 60 mph but the average speed travelled by HGVs is also 53 mph.
- Motorways are designed and built to a higher standard than dual carriageways; so road surface, geometry, layout and visibility are suitable for higher speeds. We believe that professional HGV drivers are likely to have the same behavioural response to road conditions as car drivers, and will drive at the same speed or more slowly on dual carriageways than on motorways[3]. It is implausible that HGVs would choose to drive faster on dual carriageways than on motorways.

[1] This is based on 2012 observed speed data. It excludes observations for 2-axle rigid HGVs, around two thirds of which weigh less than 7.5t. Please see the Annex for more detail. https://www.gov.uk/government/statistical-data-sets/spe01-vehicle-speeds SPE 0101

[2] Based on 2012 observed speed data and again excluding observations for 2-axle rigid HGVs.

[3] As in DfT's published free-flow speed statistics, car drivers drove 1 or 2mph slower on dual carriageways than on motorways 2002-2012. https://www.gov.uk/government/publications/free-flow-vehicle-speeds-in-great-britain-2012 SPE0103.

- Free flow traffic data shows that 99% of articulated lorries travel within the 60 mph speed limit on motorways. Furthermore the distribution (spread) of HGV speeds is fairly narrow compared to cars. HGVs tend to travel at broadly similar speeds to one another, so the average speed is a good indication of the speed at which most HGVs travel (for further information, see the Annex). A major reason is that their speeds are limited to 56 mph (90km/h) as required by EU legislation.

The evidence suggests that the main effect of the 50 mph dual carriageway speed limit for HGVs is to criminalise common-place driver behaviour. In doing so it risks contributing to bringing other road traffic regulations, particularly speed limits, into disrepute.

Consultation

The Department consulted on raising the HGV >7.5t speed limit on dual carriageway roads to 60mph (preferred option) or 55mph, or doing nothing. The consultation lasted for 6 weeks and closed on 5 September 2014, receiving 520 responses. 14% of respondents supported retaining the status quo, 68% supported the 60mph option, 10% supported the 55mph option and 8% offered other options. We discounted raising the speed limit to 55mph because of the lack of support this option received. A full consultation response report can be found at .gov.uk.

82% of the 468 consultees who responded considered that the consultation stage impact assessment adequately reflected their experiences or expectations of the change in speed limit. Of those who did not and stated their reasons, it is clear that they did not agree with, or did not understand, the Department's view that actual speeds of HGVs over 7.5t are unlikely to increase on dual carriageways as a result of the speed limit change, as they mentioned that road safety impacts had not been adequately considered (23 respondents), or that environmental or fuel costs had not been addressed. 31 respondents thought that road signs would need to be changed to reflect the speed limit increase and thought there would be a cost associated with that. However, there will be no need to change road signs, because the lower HGV national speed limit is not signed at present and we do not envisage this changing. A few respondents thought costs or benefits had been over or underestimated in the consultation stage IA, although no costs or benefits were estimated.

When asked specifically about the Department's analysis that HGVs are unlikely to increase their speed as a result of the speed limit increase, 63% of 429 respondents thought actual speeds were likely to increase. Many of these respondents seemed unaware of mandatory speed limiters constraining HGVs speed to 56mph, or thought that the policy would involve recalibrating them. The most common reason given for a likely increase in HGV speeds was that as HGVs over 7.5t break the speed limit at present, they would break the new limit (20 respondents). The Department considers that HGVs could not exceed a 60mph limit due to the mandatory fitment of speed limiters at 56mph on these vehicles (unless the speed limiters were tampered with, which is rare[4]). Other common reasons included commercial pressures on HGV drivers to drive faster (15 respondents), HGV drivers would drive to their speed limiter (13 respondents) or to other traffic (10 respondents.) A few respondents felt the 20% of drivers who comply with current speed limits would drive faster. Of those who felt actual speeds would not increase, 34 considered that HGVs were already driving at their speed limiter setting and would continue to do so[5], while 11 cited the Department's rationale. It was also mentioned that many vehicles' speed limiters are set lower than 56mph, at around 52mph, for fuel efficiency reasons.

The Department does not consider that an increase in actual speed is likely, as set out above, but in response to the consultation feedback we have carried out a sensitivity test of the impacts on road safety and time savings if HGVs were to increase their speed below.

69% of 452 respondents felt that the negative impacts of the status quo had been adequately covered in the consultation-stage impact assessment. Of the 31% who disagreed with this question and gave a reason, negative impacts mentioned included delays for other road users (20 respondents), and risky overtaking manoeuvres (13 respondents). The Department does not consider that these factors are likely to be significant consequences of the current dual carriageway limit, because dual carriageways tend to have two lanes, meaning slower vehicles do not constrain the speed of faster vehicles to a large extent, and the barrier between the two carriageways prevents head-on collisions as a result of risky overtaking manoeuvres. Other negative impacts mentioned included 15 respondents referring to fuel savings or

[4] From April 2010-2014, The Driver and Vehicle Standards Agency issued an average of 110 prohibitions for speed limiter offences per year.

[5] The free-flow statistics demonstrate that this is not the case – the average speed of HGVs over 7.5t is around 53/54mph, not 56mph.

greater engine efficiency (and consequently fewer emissions) at 56mph than 50mph, as well as driver fatigue at increased speeds (11 respondents.) The Department does not consider that actual HGV >7.5t speeds are likely to increase, so these effects may not be mitigated by the change.

Associated Measures

This measure forms part of a package with the decision to raise speed limits on single carriageways for HGVs>7.5T on single carriageways. Some parts of the package of measures planned to accompany the possible change in the single carriageway limit for HGVs more than 7.5t from 40 mph to 50 mph are also relevant to dual carriageways. They will be applied to dual carriageways too.

In particular the more rigorous and systematic approach to driver conduct proceedings would be applied to offenders breaking a revised 60 mph limit. In practice this would be likely to involve very few cases, as there is a 98% compliance rate[6] with the equivalent 60 mph lorry speed limits on motorways.

The Department's existing circular about local speed limits advises local authorities about where local speed limits applicable to all traffic can be put in place. Limits can be used for sections of dual carriageways where there is significant development and poor design features. The circular also identified (in a departure from its predecessor) that where there is a possible risk of air quality limits being exceeded, then this itself could be an important factor in the choice of the speed limit for the road.

In practice because we do not believe raising the speed limit to 60mph would result in actual changes in HGV speeds, it is unlikely to affect local speed limit decisions. But the ability to use them is available to local authorities if they wish. 59% of 446 respondents to the consultation felt that local authorities would not put in place lower local speed limits, including the majority of local authority respondents. The following answer was representative:

> *"No. In Hampshire dual carriageway roads that are subject to the national speed limit are either A or B-class roads. In line with previous DfT guidance we have recently assessed speed limits on all these roads taking into account all road users, and changes to limits are being made where it has been deemed appropriate. We do not, therefore, anticipate introducing local speed limits on dual carriageways if the HGV speed limit is increased."*

Those who did think local authorities would lower speed limits thought that they would be under pressure to do so if actual HGV speeds increased.

Monetised and Non-Monetised Costs and Benefits

We do not predict a change in HGV speeds as a result of the change in maximum speed limits. The only change that we expect is that this deregulatory move would legitimise the behaviour of drivers who are currently breaking the speed limit. Proceedings against these drivers would be avoided, which would result in a cost saving for business and for government.

Cost Saving for Government

Government and the police incur costs from handling speed limit offences. These include: police costs (collecting and documenting evidence, administrative costs if a Fixed Penalty Notice is issued); Crown Prosecution Service (CPS) costs if the case is referred to them for consideration; and if it goes to court, further CPS and court costs.

As a result of this measure, these costs would be avoided for all HGVs currently proceeded against for breaking the vehicle specific speed limit of 50 mph on dual carriageways.

We have not quantified this benefit. However, we estimate that the benefits would be small because there is little specific enforcement of this speed limit and where sanctions are imposed fixed penalty notices are available.

Cost Saving for Business

[6] SPE0105 https://www.gov.uk/government/statistical-data-sets/spe01-vehicle-speeds

There would be some small saving to business by avoiding any costs associated with either receiving a Fixed Penalty Notice or being taken to court. In line with the Better Regulation Framework Manual section 1.9.42 we have not quantified this benefit[7].

Costs and benefits to wider society

Since we do not anticipate any change in speed of travel, there will be no monetised costs or benefits incurred to wider society (such as for example road safety implications or environmental implications). We also do not consider that HGV drivers will be more likely to use dual carriageways as a result of the speed change, as they tend to take the most direct route to their destination, and the speed limit change will not change this. 76% of 464 consultees agreed that HGVs were not more likely to use dual carriageways as a result of the change, with the most common reason cited being that HGVs already take the most direct and fastest route to their destination, which will involve dual carriageways where motorways are not available. Of the 24% who disagreed, the most common reason cited was that the speed limit change will make dual carriageways more attractive than single carriageways which have a lower speed limit. The Department does not consider that this is a likely effect, because there will be a 10mph difference between HGV >7.5t speed limits on single and dual carriageways both before and after the planned changes in speed limits – the relative attractiveness of the two types of road will not change.

A non-monetised benefit will be greater compliance with the speed limit by HGV drivers and a more credible speed limit.

Implementation Costs for Business

In the consultation we asked if organisations would incur any publicity or conversion costs as a result of this change. 16 of 251 respondents felt their organisations would incur costs, but only 4 identified such costs, which related to changes on websites to reflect the speed change. As this change will occur at the same time as the single carriageway speed limit change for these vehicles, the additional cost of this will be very small. We do not have data to monetise these costs. The remaining 12 respondents either did not identify costs, or mentioned costs of recalibrating speed limiters, which will not be permitted as a result of this policy, so no cost has been quantified.

Implementation Costs for Government

There would be no additional cost to reprint The Highway Code, as this is reprinted at regular intervals and should the decision be made to proceed, we would liaise with the Driver and Vehicle Standards Agency regarding stock levels and new editions of the Code. However there would be some transitional/implementation costs accruing to government as a result of a speed limit change, as government would need to raise awareness of the new limits, both to HGV drivers themselves and all other motorists - and this is expected to cost central government £50,000. Motorists are generally unaware of the lower, differential speed limits for HGVs and other vehicles. There could also be costs associated with erecting signs at the border between England and Scotland, reminding drivers of the different limits.

However, we have not included these costs in the summary tables above, because these changes would occur simultaneously with changing the speed limit for these vehicles on single carriageway roads – and so the same highway code changes, awareness campaigns and sign changes would cover both. The cost of these additional signs has been included in the final stage impact assessment for the speed limit change on single carriageway roads.

Direct Costs and Benefits to Business

If we counted savings from people presently exceeding the current speed limit then this measure would qualify as an OUT, as that would amount to a reduction in the degree of regulation on drivers during their employment on business. Any cost savings to business from a reduction in proceedings would fall on HGV drivers who are currently breaking the law. In accordance with Ministry of Justice guidance, it is standard to exclude benefits falling to those operating outside the law. Therefore, there are no quantified costs or benefits to business as a result of this measure, but we think any impacts would be small as there are few prosecutions taken in relation to the current law.

[7] "When calculating the EANCB, you should not include any costs (fines and penalties) incurred by companies for non-compliance with the regulation."

Sensitivity test – implications of a small increase in speeds

The Department does not consider that HGVs are likely to increase their speeds on dual carriageways as a result of this change for the reasons stated above. We note that 63% of respondents to the consultation disagreed with this assessment. We have therefore carried out a sensitivity test as to the potential road safety impacts and journey time savings to hauliers if HGVs over 7.5t were to respond to the speed limit change by driving 1mph faster. This analysis is included in the summary sheets as a high estimate of impacts, but our best estimate remains that this speed limit change will generate no additional costs or benefits.

1mph speed increase

Although the speed limit for HGVS over 7.5t will increase to 60mph from 50mph, EU-mandated speed limiters will still be required to be fitted to these vehicles, preventing their maximum powered speed from increasing beyond 56mph. The effective speed limit change is therefore 50-56mph. An analysis of different international studies on the effect of changing road speed limits (but not vehicle specific speed limits) showed that on average, across all vehicle types and on different types of roads, a 10 mph change in speed limit led to a 2.4 mph average change in free-flow speed[8]. With an effective 6mph increase in speed a 1.44mph increase in actual free-flow speeds could therefore be anticipated.

In our analysis looking at the impact of the speed limit change for HGVs over 7.5t on single carriageways, we used the National Transport Model[9] to model the anticipated actual average speed change. This took into account the impacts of congestion and road geometry, finding that the average speed of HGVs would be likely to increase by a smaller amount than the free-flow assumption, by less than 1mph after a projected free-flow speed increase of 2-3mph. We have not run the National Transport Model again to look at similar effects on dual carriageways (and the impact of congestion and poor road geometry is likely to be lower on dual carriageways than single carriageways), but can assume that the actual average speed increase would be significantly lower than 1.44mph.As HGVs over 7.5t already have a free flow speed of 53mph on dual carriageways, an extra 1mph would result in a free flow speed of 54mph – very close to the speed limiter setting of 56mph, and faster than they currently travel on motorways, which are generally better suited to higher speeds than dual carriageways.

In addition, as several consultees noted, many HGVs operating for large companies (eg Sainsbury's) have their vehicles' speed limiters set lower than 56mph, at 52mph, for fuel efficiency reasons. The effective potential speed increase will therefore be less than 6mph for some HGVs.

We have therefore decided to model the impacts of a 1mph increase as a plausible actual change in average speeds of HGVs over 7.5t on dual carriageways, as a midpoint between a 1.44mph freeflow speed increase as indicated by the literature and a less than 1mph average speed increase as modelled by the NTM, taking into account congestion.

Cost Saving for Business

The main monetised benefit of an increase in HGV over 7.5t speeds would be time savings for HGV drivers as average journey times would decrease. We assume that the time saved can be used for productive business activities and therefore value it according to the standard time value for a goods vehicle driver proposed in WebTAG[10]. Faster journeys would also result in reduced vehicle operating costs and shorter time spent travelling for the goods being transported. However, for this simple analysis we have only monetised benefits from reduced driver time spent travelling, and ignored any other benefits related to the vehicle or payload.

[8] Finch, D., Kompfner, P., Lockwood, C., Maycock, G. (1994) *Speed, Speed limits and accidents*, TRL Project Report 58, Transport Research laboratory.

[9] https://www.gov.uk/transport-appraisal-and-modelling-tools

[10] The value of time for an 'OGV occupant' in 2014 is £14.47 in 2010 prices. Uprated to 2014 prices using Treasury GDP deflators, this gives a figure of £15.71 per hour. The value of time increases through time in line with expected growth in GDP per capita. Values are sourced from the WebTAG data book. Note that 'OGV' stands for 'Other Goods Vehicle', and there is no separate entry for Heavy Good Vehicles. https://www.gov.uk/transport-analysis-guidance-webtag#webtag-data-book

HGVs over 7.5t drove 3.04 billion kilometres on rural dual carriageway A roads in 2013[11], spending 35,608,414 hours[12]. An average speed increase of 1mph would generate a discounted time saving value of £96.9m over 10 years.

To illustrate how the 10-year figure has been calculated, we present below the calculations for the first year of the policy (2014). In subsequent years, the total distance travelled and average speed is assumed to remain constant. Values for future years are discounted at a rate of 3.5%.

		Calculation
A	35.61m hours spent travelling per year in the status quo	= 3.04 billion kilometres ÷ 85.4 kilometres per hour [85.4kph is equivalent to 53.1mph]
B	34.95m hours spent travelling per year if policy change results in average speed increase of 1mph	= 3.04 billion kilometres ÷ 87.0 kilometres per hour [87.0kph is equivalent to 54.1mph]
C	658,591 hours saved per year	= B – A
D	£10,348,855 of HGV driver time saved per year	= C x £15.71 per hour [see footnote 10, and note that this figure increases through time]

Equivalent Annual Net Cost to Business (EANCB) in the sensitivity test

For the illustrative scenario of a 1mph increase in HGV speed, the EANCB is -£8.9m (i.e. a net benefit to business of £8.9m per year), and the business net present value is £96.93m. These have been calculated by assuming all HGV journey time savings are benefits to business and accident costs do not fall to business. Values are in 2009 prices and calculated according to the Better Regulation Framework Manual guidance.

We have not considered benefits to other vehicles of an increase of 1mph average speed of HGVs over 7.5t.

Road Safety Impacts

To produce this illustrative estimate, we have used a relatively simplistic approach based on models about the effect of speed on accidents. We have assumed that speed variance has no effect (either positive or negative) on accidents. Almost all of the literature around speed and road accidents is based on a change in the speed of *all* traffic, rather than a subset of vehicles so we have adapted this, to illustrate how it could apply to a small increase in HGV speeds. This approach is similar to the approach used in the Department's analysis of the impacts of a change in speed limits on rural single carriageways for the same roads.

Accident rates for HGVs over 7.5t on dual carriageways with a 50 mph or 60 mph limit[13] are very low, with the 2012-13 average being 6 fatal accidents and 22 serious injury accidents[14]. We have assumed for the following calculations that baseline accident rates (without the speeds limit change) would have stayed at this level over the appraisal period.

M C Taylor, D A Lynam and A Baruya, *The effects of drivers' speed on the frequency of road accidents* (TRL:2000) found that the relationship between speed and accidents for road traffic in general, depends on the operational characteristics of the road[15]. On higher speed urban and rural roads they found a 1mph decrease in average speed resulted in a 3% decrease in accident frequency. If HGV >7.5t average speeds on dual carriageway roads were to increase by 1mph, we could therefore anticipate an increase of 3%, or 0.18 fatal accidents and 0.66 serious accidents per year.

[11] This is for 3, 4 and 5 axle HGVs, and does not include 2 axle rigids. Some of these will also be HGVs over 7.5t and subject to the speed limit change, but we cannot separate these out in the data. Consequently this number is an underestimate. Traffic (www.gov.uk/government/organisations/department-for-transport/series/road-traffic-statistics)

[12] Time=distance/speed

[13] This is not exactly the same as 'rural dual carriageways' as used in the vehicle speed statistics, but is loosely equivalent, as most built up roads are likely to have lower local speed limits set in accordance with DfT's Speed Limit Circular.

[14] Based on analysis of the 'STATS19' Road Accident Statistics Data

[15] This is an update to a 2004 TRL meta-analysis of international studies of the relationship between speed and accidents, and focuses on UK roads, so is more likely to hold true in the UK. They state that the broad result that 'a 5% reduction in accident frequency results per 1mile/h reduction in average speed' remains a robust general rule, a much fuller picture is now available.

However there is some doubt that this type of standard relationship between average speeds and crashes actually applies to this specialised type of speed limit restricting some vehicle types to lower speeds than those for general traffic. The Handbook of Road Safety Measures[16] cited an American study[17] of retaining a 55 mph speed limit for heavy vehicles when the general speed limit was raised to 65 mph and concluded that retention of the 55 mph limit for heavy vehicles did not improve road safety. A Swedish study[18] of 80km/h (50 mph) speed limiters for heavy vehicles came to the same conclusion.

The handbook concluded that for vehicle-related speed limits closer to the limit for general vehicles lower speed differences between vehicles would lead to less catching up and overtaking. This could counteract the effect of more risks related to higher speeds, leading to a net effect of almost zero. Whilst this may be the case for this speed limit change on dual carriageways if there were an actual speed change for lorries, the evidence is limited. It might also depend on how exactly lorry speeds changed – for example it might be helpful if it reduced the very slow overtaking on busy dual carriageways leading to traffic bottlenecks. However for the purposes of this sensitivity test we have calculated the relationship between speed and safety based on the relationships found for general, road speed limits alone. This produces figures for the risks associated with that empirical relationship, but it is possible they will not materialise at all.

As is standard in transport appraisal, we have monetised the value of these potential additional accidents if actual speeds were to increase. This is based on standard WebTAG values of a fatal and serious accident, uprated with GDP through time[19]. In 2014, the additional fatal and serious accidents occurring as a result of this policy are monetised as having a social cost of between £4.8m and £9.7m. Over the entire ten year appraisal period, the present value of the road safety cost is £5.2m.

Other impacts not quantified

We have not analysed the following potential impacts of a 1mph average speed increase accruing to society: environmental / greenhouse gas impacts (where there would be likely to be an increase in CO2, NOX and Particulate Matter – though the relationship between speed and emissions is not linear, as HGV engines are more efficient at certain speeds reducing fuel use and emissions. We do not think that the impact on emission from a 1mph increase in average speed would be likely to be large), and increased noise, where the Association of Noise Consultants responded to the consultation that:

"When calculated in accordance with the Calculation of Road Traffic Noise – Department of Transport, Welsh Office 1988, the proposed speed increase represents approximately a 1dB(A) increase in noise level." It is not clear if the ANC have assumed an increase in speed of 10mph or whether their calculations apply to all traffic speeds or only HGVs over 7.5t.

We have not analysed the potential benefits to business as a result of lower operating costs for HGVs, or faster journey times for non-HGV drivers.

The two largest quantified effects in the published final stage impact assessment of the change in the single carriageway limit were time savings and road safety effects. The net effect of all the other quantified effects was a positive value associated with the change of about thirty percent of the value of the time savings. Within this the biggest effects were a positive effect on non-fuel vehicle operating costs, more indirect tax revenues, the negative effect of higher fuel costs and more greenhouse gas emissions. The environmental effects assessed (greenhouses gases, noise and local air quality) together had a negative value less than a tenth of the positive value of the time savings. So we have concluded that for this sensitivity test, that it would be a disproportionate piece of work to quantify them.

We do not have the data to monetise the impacts of the reduction in driver fatigue or increased fuel / engine efficiency mentioned by consultees as negative impacts of the status quo.

---

[16] Elvik, R., Vaa, T., Erke, A., & Sorensen, M. (Eds.). (2009). The handbook of road safety measures. Emerald Group Publishing. 678

[17] Garber, N J and R Garadju(1992) Impact of Differential Speed Limits on the Speed of Traffic and the Rate of Accidents*, Transportation Research Record*, **1375**, 44-52

[18] Carlsson A, G Nilsson and P Wretling (1992). *Hastighetsgräns 80km/h för tunga lastbilar. Konsekvensanalys av träfik- och trafiksäkerhetseffekter.* VTI-meddelande 683. Väg- och Trafikinstitutet, Linköping.

[19] In 2010 values and prices, the total cost to society of a fatal and serious accident was £1.88m and £0.22m respectively. Uprated to 2014 values and prices, this gives the following costs: £2.18m for a fatal accident, £0.25m for a serious accident. The values includes costs such as the value of lost output from death or incapacitation of individuals involved, medical and ambulance costs, police costs and human costs (which attempt to represent the pain grief and suffering caused by the accident). See WebTAG unit 3.4.1 for further information.

Risks and Assumptions

In our sensitivity analysis, we have assumed that HGV drivers would not choose to drive faster on dual carriageways than on motorways, and consequently that there will be no change in free-flow speeds of HGVs>7.5T on dual carriageways as a result of this change. If HGVs do change their speeds, there could be congestion, environmental, road safety and business impacts as described in the sensitivity analysis.

We have assumed that HGV drivers will not be more likely to use dual carriageways than they are at present. If they do, there could be time savings and road safety benefits if they switch from single carriageway roads, and road safety costs if they switch from motorways.

In conducting the sensitivity test of analysing the impact of a 1mph increase in actual speeds, we have assumed that all miles driven on dual carriageways are at free flow speeds. This is unlikely to be the case, and consequently business benefits and safety costs are likely to be proportionally smaller.

In the sensitivity test, we have assumed that the baseline of fatal and serious accidents involving HGVs over 7.5t for 2012 and 2013 remains at the same level for the ten-year appraisal period.

Wider Impacts

Equalities

Any negative impacts on equalities have been considered. These include negative impacts on race, sexual orientation, religious belief, transgender/transsexual persons, disability, gender, age, etc. We have concluded that this measure would not have a disproportionate impact on any particular group.

Small and Microbusiness Assessment

We do not consider that there will be an impact on small and microbusinesses in our central case. In the sensitivity analysis, it has not been possible to ascertain the extent to which small and microbusinesses will be affected, however, based on our assessment of the likely impacts on business in general, we estimate that the impact would be a small net benefit or cost saving to small and microbusinesses.

Greenhouse Gas Assessment and Wider Environmental Impacts

Because we do not predict a change in free-flow speeds as a result of the change in maximum speed limits, we do not predict any change to greenhouse gases or other environmental impacts. In the sensitivity analysis we note a small possible increase in greenhouse gas emissions.

Competition Assessment

Because we do not predict a change in free-flow speeds as a result of the change in maximum speed limits, we do not predict a change in competition.

Implementation Plan and Review

This Impact Assessment accompanies a public consultation on this measure. Responses to that consultation have been taken into account in deciding the way forward.

We will now seek to make the required changes to the Road Traffic Regulation Act at the same time as the changes to effect the change in the maximum speed limit for HGVs>7.5t on single carriageways, i.e. in early 2015. This is to allow the changes to be highlighted to the public together.

The regulatory changes will include a review five years after coming into force. This will allow for examination of any changes associated with the change of maximum speed.

We have assessed the data which the Department holds, and consider that current methods of collection would enable us to analyse and make further decisions. We will note traffic volumes, freeflow speeds and accidents involving HGVs before and the change has been implemented. This data will help to inform us about what effect, if any, the maximum speed limit increase on dual carriageways has had.

Resource to monitor the impacts and analyse the data will be met by existing resource at the DfT. We envisage this requiring 3 days' work once a year, by a person at Executive Officer level.

We will use the publicity campaign planned for the rise in speed limits for HGV>7.5T on single carriageways to make drivers aware of this change, too.

Annex: HGV Free-Flow Speeds on Dual Carriageways / Motorways

Free-flow vehicle speeds on non-built-up roads by road type and vehicle type in Great Britain, 2008-2013

Miles per hour / number of vehicles

		Heavy goods vehicles				
		Rigid by number of axles			Articulated by number of axles	
		2	3	4 or more	3 & 4	5 or more
2013	**Motorway**	*61*	*54*	*53*	*54*	*53*
	Dual carriageways	*60*	*54*	*52*	*53*	*53*
2012	**Motorway**	*61*	*54*	*53*	*54*	*53*
	Dual carriageways	*60*	*54*	*53*	*53*	*53*
2011	**Motorway**	*61*	*54*	*54*	*54*	*54*
	Dual carriageways	*59*	*53*	*53*	*53*	*53*
2010	**Motorway**	*61*	*54*	*54*	*54*	*54*
	Dual carriageways	*60*	*53*	*53*	*53*	*53*
2009	**Motorway**	*62*	*54*	*54*	*54*	*54*
	Dual carriageways	*59*	*53*	*53*	*53*	*53*
2008	**Motorway**	*60*	*54*	*53*	*54*	*53*
	Dual carriageways	*60*	*53*	*53*	*53*	*54*
2007	**Motorway**	*61*	*54*	*54*	*54*	*54*
	Dual carriageways	*60*	*53*	*53*	*53*	*53*
2006	**Motorway**	*61*	*54*	*53*	*54*	*53*
	Dual carriageways	*60*	*52*	*52*	*53*	*53*
Sample size	*Motorway*	*24,725*	*2,250*	*1,329*	*5,707*	*34,550*
	Dual carriageways	*2,013*	*202*	*158*	*366*	*2,261*

1 For rigid 2-axle HGVs, speed limit depends on loading which cannot be determined.

2 Sample size is from 2012, other years are comparable.

3 Average vehicle speeds from 26 motorway sites.

4 Average vehicle speeds from 7 dual carriageway sites.

Telephone: 020 7944 3095

Email: roadtraff.stats@dft.gsi.gov.uk

Notes & definitions (https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/68718/Free

The figures in this table are National Statistics.

Speeds have been monitored at 26 motorway sites and 7 dual carriageway sites using Automatic Traffic Counters (ATC), deliberately located where external factors which might restrict driver behaviour are not present (including junctions, hills, sharp bends and speed enforcement cameras). The automatic counters identify rigid 2 axle lorries but cannot distinguish between vehicles weighing less than 7.5 tonnes gross and those weighing more. The weight of this type of vehicle determines its speed limit on non-built-up roads. Consequently, it is not possible to tell how many rigid 2 axle HGVs and total rigid HGVs are speeding. As a result, total HGV free flow speed estimates mentioned in this Impact Assessment exclude Rigid 2-axles from their calculations. Around 36% of the observations made at the

motorways sites and 40% of the observations at the dual carriageway sites were Rigid 2-axle HGVs. The speed measurement error of the Automatic Vehicle Classifier hardware used is in the region +/-1.5%.

Speed Distribution

Data collected by Automatic Traffic Counters can also be used to show the distribution of vehicle speeds at the ATC site. The graphs below show the distribution of car and HGV speeds on ATC sites at motorways and dual carriageways. The graphs show that there is less variance in HGV speeds than car speeds. This is mostly due to the effect of speed limiters, which prevent HGVs from travelling faster than 56 mph.