

<b>Title:</b> Traffic Signs Review: Traffic Signs Regulations and General Directions 2016 <b>IA No: DfT00282</b> <b>Lead department or agency:</b> Department for Transport <b>Other departments or agencies:</b>	<b>Impact Assessment (IA)</b>				
	<b>Date:</b> February 2016				
	<b>Stage:</b> Final				
	<b>Source of intervention:</b> Domestic				
	<b>Type of measure:</b> Secondary legislation				
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<b>Summary: Intervention and Options</b>	<b>RPC Opinion:</b> Not applicable
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**Cost of Preferred (or more likely) Option**

Total Net Present Value	Business Net Present Value	Net cost to business per year (EANCBon 2009 prices)	In scope of One-In, Measure qualifies as Two-Out?	
£61.1m	n/a	n/a	No	

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

The last version of the Traffic Signs Regulations and General Directions (TSRGD) was drafted in 2000 and is out of date. To ensure that we have regulations that reflect both current and future requirements, the Department undertook a stakeholder led national traffic signs review. The findings of the review were positive - TSRGD provided a nationally consistent traffic sign system but it was inflexible - resulting in substantial numbers of authorisations for non-prescribed traffic signs. The revised TSRGD is deregulatory, reduces the requirement to place traffic signs, cuts costs for local authorities and removes the need for sign authorisations. It also provides a range of new measures to promote safer cycling.

**What are the policy objectives and the intended effects?**

The changes we are making to the Traffic Signs Regulations and General Directions (TSRGD) will:

- Reduce administrative costs and regulatory barriers for local authorities when designing new traffic signs, but retain overall national consistency.
- Reduce the requirement to place as many traffic signs and as such reduce the amount of signs clutter.
- Deregulate lighting requirements for signing to help reduce energy costs and environmental impact.
- Make TSRGD more user friendly for local authorities.

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

The review process has been informed and managed by the large group of key stakeholders involved in this project, who have considered various other options and contributed to the large amount of research used to inform policy choices.

1) Do nothing.

2) Amend the Traffic Signs Regulations and General Directions

Option 2 is the preferred option as it is the only option that will address the problem and policy objectives stated above within an acceptable timeframe.

**Will the policy be reviewed? It will be reviewed. If applicable, set review date: 2021**

Does implementation go beyond minimum EU requirements?			Yes / No / N/A		
Are any of these organisations in scope? If Micros not exempted set out reason in Evidence Base.	<b>Micro</b> N/A	<b>&lt; 20</b> N/A	<b>Small</b> N/A	<b>Medium</b> N/A	<b>Large</b> N/A
What is the CO <sub>2</sub> equivalent change in greenhouse gas emissions? N/A (Million tonnes CO <sub>2</sub> equivalent)			<b>Traded:</b>		<b>Non-traded:</b>

*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

ANDREW JONES Date: 25.02.16

# Summary: Analysis & Evidence

# Policy Option 1

**Description:** Amend the Traffic Signs Regulations and General Directions

## FULL ECONOMIC ASSESSMENT

<b>Price Base</b> Year 2016	<b>PV Base</b> Year 2016	<b>Time Period</b> Years10	<b>Net Benefit (Present Value (PV)) (£m)</b>		
			<b>Low:</b> £40.8m	<b>High:</b> £81.4m	<b>Best Estimate:</b> £61.1m

<b>COSTS (£m)</b>	<b>Total Transition</b> (Constant Price) Years		<b>Average Annual</b> (excl. Transition) (Constant Price)	<b>Total Cost</b> (Present Value)
<b>Low</b>	Optional		Optional	<b>Optional</b>
<b>High</b>	Optional		Optional	<b>Optional</b>
<b>Best Estimate</b>	n/a		n/a	<b>n/a</b>

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

There are no costs to implementing this policy.

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

n/a

<b>BENEFITS (£m)</b>	<b>Total Transition</b> (Constant Price) Years		<b>Average Annual</b> (excl. Transition) (Constant Price)	<b>Total Benefit</b> (Present Value)
<b>Low</b>	Optional		£4.9m	<b>£40.8m</b>
<b>High</b>	Optional		£9.7m	<b>£81.4m</b>
<b>Best Estimate</b>	n/a		£7.3m	<b>£61.1m</b>

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

The new TSRGD further deregulates the requirement to illuminate traffic signs where there is a system of street lighting. This will result in savings from illumination (electricity) costs for both existing and new signs. It is also cheaper to install a non-illuminated signs, so there will also be some installation cost savings. There will be an administrative saving to local authorities who no longer need to request authorisation for approval of some sign types.

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

Local authorities will save on maintenance expenditure for non-illuminated signs. We are also removing the requirement to make a Traffic Regulation Order for certain signs, which will have administrative cost savings for local authorities. There will be some environmental benefits from reduced electricity usage. Further non-monetised benefits are listed near the end of this document.

### Key assumptions/sensitivities/risks

**Discount rate**

3.5%

We have assumed that the number of signs of the types affected will continue to be placed at the same rate as was observed over the period 1994-2013 and that local authorities will choose not to illuminate 25-50% of new traffic signs. Furthermore, we have assumed that 25-50% of the existing stock of signs will have lighting removed by the end of the appraisal period.

## BUSINESS ASSESSMENT (Option 1)

<b>Direct impact on business (Equivalent Annual) £m:</b>			<b>In scope of OITO?</b>	<b>Measure qualifies as</b>
<b>Costs:</b> n/a	<b>Benefits:</b> n/a	<b>Net:</b> n/a	No	

## **Evidence Base (for summary sheets)**

### **Problem under consideration**

Whilst it is essential that there is national consistency in traffic sign design, to ensure motorists and other road users understand the messages that signs provide, the current level of prescription that the current TSRGD requires can be a barrier to local authorities working effectively.

The traffic signs policy paper "Signing the Way", published in 2011, set out a policy framework to ensure that the traffic sign system in Great Britain meets the future needs of all road users, while building on the existing and established traffic sign system. "It highlighted the need to revise TSRGD because;

- TSRGD places an unnecessary burden on local and central Government – it does not provide sufficient flexibility for local authorities to deliver certain traffic management schemes that are introduced on a regular basis. This resulted in over 500 requests for special signs authorisations to the Secretary of State each year (this has been reduced to approximately 128 request following amendment regulations and national authorisations by the Department);
- TSRGD is essentially reactive and does not promote innovation and creative solutions. Many of the proposals currently under consideration to improve cycling are not permitted under the current regulations
- It reduces the role and responsibility of local authorities in delivering traffic signs and schemes that meet local needs;
- And the complexity of TSRGD is a practical barrier to implementation of the appropriate design of traffic signs on the highway.

This high level of regulation can be a barrier to the delivery of local transport schemes that reflect local needs and places an unnecessary burden on local Government.

### **Rationale for intervention**

The legal framework for traffic signing is comprehensive and has served highway authorities well since the first modern edition of TSRGD in 1964. Road users have benefitted from the resulting consistency across the country of both the appearance of signs and their use. However it does not reflect the significant innovation in traffic engineering or the policy changes that local authorities have made to manage their roads more effectively.

### **Policy objective**

The DfT has already delivered many of the recommendations from "Signing the Way" and the regulatory changes we are now making will reduce the current level of prescription and associated costs by:

- delivering new policies for example further reductions to sign lighting;
- reducing the requirements for traffic signs – which will reduce the sign clutter on our highways;
- removing regulatory barriers, where possible, to the design of traffic signs;
- removing most of the "General Directions" that have prescribed how traffic signs are currently placed and restrain local highway authority practice;
- reducing the administrative burden on local authorities by almost removing the requirement for traffic sign authorisations (there will always be unseen requirements, for example, signing for the Olympics);

- re-structuring the document, to facilitate the use of the Regulations by users;
- incorporating all the regulations relating to traffic signs, so as to become a “one-stop shop”, and help deliver the Department’s commitment to the Red Tape Challenge;
- significantly reducing the number of signs prescribed;
- providing new sign designs that are more readily understood by the road user;
- ensuring that Regulations encourage innovation, rather than restrict current practices.

## **Description of options considered (including do nothing);**

### **Option 1**

One option is to continue using TSRGD in its current format and with its current levels of prescription. By doing this local authorities will not be able to benefit from the savings highlighted in this impact assessment.

The new TSRGD will provide a range of proposals for improved signs and traffic signals that will promote more sustainable travel, safer cycling and cost savings. Although continuing with the current version of TSRGD will not create immediate adverse problems, the benefits will be missed along with the opportunity to prepare for the future in terms of traffic scheme demands.

### **Option 2**

Since the summer 2012, we have been focussing on preparing a revised TSRGD which will incorporate the regulatory and presentational improvements recommended in the policy document Signing the Way. These revisions will provide greater flexibility, cut costs and delivery times for local authorities and make a significant contribution to red tape challenge.

We will make driving and cycling safer by reducing sign clutter and trialling new innovative designs like low level signals for cyclists. We will promote economic benefits by lowering local authority costs by reducing the number of signs they have to place, the number they have to light and the number of authorisations they request. We will also promote good street design and signing by having fewer and less intrusive signs and improve clarity by bringing all of the regulations into one place.

## **Monetised and non-monetised costs and benefits**

In preparation for this impact assessment, the Department for Transport conducted a study to estimate the number of traffic signs in England, both in total and by various sign classifications or groups. The last estimate of the number of traffic signs was in 1993, when it was estimated that there were 2.45m traffic signs on England’s roads.

The 1993 study was based on a survey in which signs were physically counted and analysed using external consultants. It was therefore labour intensive and costly. The DfT has undertaken an innovative approach to updating this survey by expanding local authority sample data using regression analysis. This provided a direct comparison with the 1993 study. All the work for this study was undertaken by analytical staff in DfT.

The new research has significantly demonstrated the increase in the number of traffic signs on England’s roads in that there were likely to have been around 4.57m traffic signs in England in 2013. This represents an overall increase of 111.5% since 1993.

The public consultation conducted in April 2014 provided DfT with additional information regarding the number of signs and the costs of illumination which has enabled us to modify and

strengthen our assumptions. As a result of consultation we have made the following changes to our analysis:

- we have revised our costs of illumination figures upwards to reflect higher average illumination costs figures in consultation responses;
- we have revised our estimate of the number of authorisations requests to local authorities per year.

We are providing significant relaxations to the regulations for illuminating traffic signs whilst retaining lighting for some safety critical and/or enforcement signs within systems of street lighting. This will apply to:

- All warning signs, except those indicating restricted headroom. Warning signs are only placed at the discretion of a local authority and local authorities should consider whether lighting is necessary at the same time as deciding if a warning sign is needed at all;
- Specific regulatory cycle signs.
- Signs within 20mph zones and/or areas subject to 20mph limits. The lower speed reduces the required clear visibility distance for all vehicles
- Traffic signs mounted on retro-reflective self-righting bollards.

There are no costs associated with these measures. They are a simplification/relaxation of current guidance. The monetised benefits fall into three categories:

- Illumination savings (the cost of illuminating some signs is avoided)
- Installation savings (illuminated signs are more costly to install, so this is an additional saving)
- Administrative savings (local authorities no longer need to prepare authorisation requests for certain signs)

### **Key Assumptions used in the analysis**

- The number of signs is expected to continue growing at the same rate as observed over the last twenty years and that this growth rate is linear.
- We estimate that 25-50% of current signs would have their illumination removed as a result of this policy. This accounts for uncertainty in forecasting the proportion of traffic signs which are likely to be affected by this policy change.
- We estimate that 25-50% of new signs would be installed without illumination. This would have both installation savings and ongoing illumination savings. Again, this range seeks to account for uncertainty in the number of signs likely to be installed without illumination following this policy change.
- The cost of illuminating a sign is estimated to be £13.30 (2016 prices) per sign per year. This reflect the average cost of illuminating a sign based on the Consultation responses.
- The cost of installing an unlit traffic sign is estimated to be £392 (2016 prices) lower than installing an illuminated sign.
- We estimate that local authorities could avoid 128 authorisation requests per year, making an administrative saving of £366-£470 (2016 prices) per request.

Further details of these assumptions can be found in the text below.

## ***Illumination savings***

A table showing annual cost savings from no longer needing to illuminate signs is shown in Annex A. These figures are calculated based on the following:

- We are estimating that all of the warning and regulatory signs specified are within street lit areas, but we are seeking further evidence to provide a more accurate split.
- The cost of lighting a traffic sign is estimated to be £13.30<sup>1</sup> (2016 prices) per sign per year.
- The number of signs has been estimated using research produced by the Department. The number of warning signs placed which we intend to deregulate the sign illumination requirements rose from 383,052 in 1994 to 802,274 in 2013. Of these, 97% would be no longer require illumination following the deregulation.<sup>2</sup>
- We are assuming constant linear growth in the number of signs throughout the appraisal period, at the same rate as observed during 1994-2013 (i.e. an additional 22,669 signs per year). For specific regulatory cycle signs, the report found 5,690 signs in 1994, rising to 71,055 in 2013. Again we assume constant linear growth throughout the appraisal period at the same rate as observed during 1994-2013 (i.e. an additional 3,400 signs per year).
- We have assumed that over the appraisal period, 25-50% of the new signs installed each year will no longer be illuminated. In addition, we assume that by the end of the appraisal period 25-50% of the existing signs (which are already installed in 2016) would have the lighting removed by the traffic authority<sup>3</sup>. These assumptions are illustrative estimates. We do not have good evidence to suggest how many signs would be affected by this policy, so we have used a broad range for illustrative purposes.
- We have not included any maintenance savings from lighting units, due to unavailability of suitable data. However, we believe that maintenance savings would be much larger than the annual illumination saving of £13.30 (2016 prices) that we have been able to include which means that the overall savings are likely to be an underestimate.<sup>4</sup>

## ***Installation Savings***

We must also apply the savings made from placing a traffic sign that does not require additional lighting. We calculate this as following:

- Using the growth rate in signs, as explained above, we can estimate the additional number of signs that will be placed each year.
- We assume that 25-50% fewer signs would be illuminated each year.

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1. The average cost of illuminating a sign taken based on responses from local authorities in our consultation April 2014 is £12.64. Updated to 2016 prices using the HMT GDP deflator, gives the value of £13.30

<sup>2</sup> Within the warning signs schedule we are keeping the requirement to light bridge height warning signs. Therefore we have accounted for this in our analysis and based the proportion of warning signs that still require lighting from the 1993 research.

<sup>3</sup> We have assumed that there is no cost associated with removing illumination as in most cases it is likely to be a simple 'switching off'. However, we would welcome views from consultees about any costs that may be incurred.

<sup>4</sup> We understand that maintenance costs including lamp cleaning, electrical testing and bulb changing could at least £100 to the annual cost of lighting a traffic sign. We do not however wish to use this information until we are able to validate the data.

## Installation Savings

(a) Number of new specific warning signs per year	22,903
(b) Upper-bound: number of new signs that no longer need to be lit (a x 50%)	11,451
(c) Lower-bound: number of new signs that no longer need to be lit (a x 25%)	5,726
(d) Number of new specific regulatory cycle signs per year	3,440
(e) Upper-bound: number of new signs that no longer need to be lit (d x 50%)	1,720
(f) Lower-bound: number of new signs that no longer need to be lit (d x 25%)	860

### Saving of £392 installation cost per sign per year

upper-bound annual saving ((b+e) x 392)	£ 5,169,753
lower-bound annual saving ((c+f) x 392)	£ 2,584,876

## Administrative Savings

### Reducing the requirements for Secretary of State Approvals of non-prescribed signing.

By prescribing the additional signs as proposed, it is estimated that 88 fewer authorisation requests would be received from local authorities each year. This is based on analysis of recent authorisation trends, by sign category, contained in the department's traffic sign authorisation database.

Having consulted with relevant stakeholders, the cost of preparing an application, and addressing any actions arising, is estimated to be between £350 and £450 (in 2013 prices), based on 8 hours of an engineer's time. Uprated to 2016 prices, this gives a figure of £366-£471. The department therefore considers that a reasonable range of the financial saving to local authorities is between £32,210 and £41,412 per year (2016 prices).

The above estimate does not include the network management benefits associated with speedier scheme implementation, by removing the authorisation process for these signs. Annually, the Department receives in excess of 120 applications - with a corresponding KPI turnaround target of 3 months. These benefits are more difficult to quantify.

Not taking forward these changes would mean that local authorities would need to continue applying for authorisation for non-prescribed traffic signs. Departmental analysis has shown that many applications for these (now) commonly used traffic signs require little or no changes – indicating that highway authorities intend to use these signs in line with best practice. Therefore, in respect of these signs, the analysis would suggest that the authorisation process is adding an unnecessary burden.

In addition, capturing these traffic signs in amendment regulations could reduce the timescales involved in delivering new traffic management schemes - thus delivering the benefits of the scheme earlier.

Savings from fewer traffic signs authorisations			
No of traffic sign authorisations 2013-14	Estimated yearly reduction in cases	Cost per authorisation	Yearly saving
128	88	£366-£471	£32,210 - £41,412



The department considers that prescribing more signs and variants in TSRGD will not lead to any additional costs to authorities.

### Total Monetised Benefits

The table below shows the estimated total discounted savings over the ten-year appraisal period.

#### Total discounted savings over ten year appraisal period

	<b>lower bound</b>	<b>best estimate</b>	<b>upper bound</b>
<b>illumination savings (turning off existing signs)</b>	£14.3m	£21.5m	£28.7m
<b>illumination savings (no illumination for new signs)</b>	£3.9m	£5.9m	£7.9m
<b>installation savings (non-illuminated signs are cheaper to install)</b>	£22.2m	£33.4m	£44.5m
<b>administration savings (reduced authorisation requests)</b>	£0.3m	£0.3m	£0.4m
<b>Total</b>	<b>£40.8m</b>	<b>£61.1m</b>	<b>£81.4m</b>

### Sensitivity Analysis

A key uncertainty of this analysis is the number of signs that will be installed each year in the future. There was a large growth in the number of warning signs from 1994 to 2013. This is likely to be due to increased awareness and use of road safety engineering from local authorities. Improvements such as the re-design of junctions and enhanced signing of, for example, dangerous bends, have been an important factor in reducing road deaths over the last few decades<sup>5</sup>. We do not have sufficient evidence to allow accurate forecasting of the number of warning signs that will be used over the next ten years. However, we believe that the number of

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<sup>5</sup> See for example TRL PPR444 – “Post-2010 Casualty Forecasting”, J Broughton, 2009. Road safety engineering is one of the three major contributors to casualty reductions, and improvements are expected to continue beyond 2010.

signs will continue to grow as there are still further benefits that can be achieved from installation of warning signs.

The estimated benefits are highly dependent on the expected growth rate. The table below shows sensitivity analysis to illustrate this. If there is no further growth in signs beyond 2013, the annual benefits of option 2 would reduce by around 75%.

<b>Sensitivity Analysis</b>	<b>Scenario</b>	<b>lower bound</b>	<b>best estimate</b>	<b>upper bound</b>
<b>Average Annual (ex. Transition)</b>	Main	£4.9m	£7.3m	£9.7m
<b>Total Benefit (PV)</b>		£40.8m	£61.1m	£81.4m
<b>Average Annual (ex. Transition)</b>	No Growth	£1.8m	£2.7m	£3.5m
<b>Total Benefit (PV)</b>		£14.6m	£21.8m	£29.1m
<b>Average Annual (ex. Transition)</b>	50% Growth	£3.3m	£5.0m	£6.6m
<b>Total Benefit (PV)</b>		£27.7m	£41.5m	£55.2m

#### Non monetised benefits

##### **Environmental Savings**

There will be some environmental benefits from reduced electricity usage as a result of this policy. We have not attempted to monetise these savings due to a lack of suitable data.

There are a number of other benefits that we have been unable to put a monetary value to but will be of benefit to local authorities. There are:

- Making TSRGD more user friendly to reduce the risk of errors.
- Improving streetscapes, by having fewer signs.
- Removing the technicalities that have generated a mini-industry in challenging traffic enforcement.
- Trialling new innovative designs like low level signals for cyclists, or cycling zebra crossings.
- Making advanced stop line designs more flexible.
- Removing the prescriptions on yellow box junction design; making it easier to manage road networks, and to reduce congestion.
- Changing the regulations on parking bays so that they are easier to install, easier to enforce, and easier to understand for motorists.
- Removing sign clutter - retaining only the essential signs to make roads safer.

**Wider impacts**

There are no wider impacts associated with this proposal.

## Annex A: Table showing illumination savings Figures are in 2016 prices, non-discounted

	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
<b>Specific Warning Signs</b>										
Total Number of Signs	879,254	902,157	925,060	947,962	970,865	993,768	1,016,671	1,039,574	1,062,477	1,085,380
(a) Number of signs no longer illuminated (upper-bound)	55,414	110,828	166,242	221,656	277,071	332,485	387,899	443,313	498,727	554,141
(b) Number of signs no longer illuminated (lower-bound)	27,707	55,414	83,121	110,828	138,535	166,242	193,949	221,656	249,364	277,071
<b>Saving of £13.30 per sign per year</b>										
upper-bound (a x 13.30)	£737,269	£1,474,538	£2,211,807	£2,949,075	£3,686,344	£4,423,613	£5,160,882	£5,898,151	£6,635,420	£7,372,689
lower-bound (b x 13.30)	£368,634	£737,269	£1,105,903	£1,474,538	£1,843,172	£2,211,807	£2,580,441	£2,949,075	£3,317,710	£3,686,344
<b>Specific Regulatory Cycle Signs</b>										
Total Number of Signs	81,376	84,816	88,256	91,697	95,137	98,577	102,017	105,458	108,898	112,338
(a) Number of signs no longer illuminated (upper-bound)	5,789	11,578	17,367	23,156	28,945	34,734	40,522	46,311	52,100	57,889
(b) Number of signs no longer illuminated (lower-bound)	2,894	5,789	8,683	11,578	14,472	17,367	20,261	23,156	26,050	28,945
<b>Saving of £13.30 per sign per year</b>										
upper-bound (a x 13.30)	£77,020	£154,040	£231,060	£308,080	£385,100	£462,120	£539,139	£616,159	£693,179	£770,199
lower-bound (b x 13.30)	£38,510	£77,020	£115,530	£154,040	£192,550	£231,060	£269,570	£308,080	£346,590	£385,100