

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

# Restricted Roads (20 mph Speed Limit) (Scotland) Bill

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## Financial Memorandum

### Introduction

1. As required under Rule 9.3.2 of the Parliament's Standing Orders, this Financial Memorandum is published to accompany the Restricted Roads (20 mph Speed Limit) (Scotland) Bill, introduced in the Scottish Parliament on 21 September 2018.

2. The following other accompanying documents are published separately:

- statements on legislative competence by the Presiding Officer and the member who introduced the Bill (SP Bill 39–LC);
- Explanatory Notes (SP Bill 39–EN);
- a Policy Memorandum (SP Bill 39–PM).

3. This Financial Memorandum has been prepared by the Non-Government Bills Unit (NGBU) on behalf of Mark Ruskell MSP, the member who introduced the Bill. It does not form part of the Bill and has not been endorsed by the Parliament.

### Background

4. The Bill reduces the current 30 mph general speed limit on restricted roads to 20 mph. Restricted roads are generally C-class or unclassified roads which are lit by street lights no more than 185m apart. The vast majority of restricted roads are the responsibility of local authorities.

5. The aim of the Bill is to reduce vehicle speed and, by doing so, increase road safety, promote active travel and improve Scotland's local communities and wider environment.

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

## Costs on the Scottish administration

6. As responsibility for the vast majority of restricted roads lies with local authorities, the bulk of the costs directly associated with implementing the legislation would fall on them. Some costs would, however, fall on the Scottish Administration (which includes Transport Scotland, as an Executive Agency of the Scottish Government).

## Updating subordinate legislation

7. In carrying out their responsibilities for speed limits in their areas, local authorities must refer to a range of regulations and directions set out in subordinate legislation, and these would have to be updated by the Scottish Government. Many of the changes required would be technical amendments, consequential to the change of the general speed limit, but there may also be policy choices to be made (e.g. in relation to how signage requirements are changed) that would require consultation with relevant stakeholders (e.g. local authorities, the UK Government, contractors).

8. It is expected this subordinate legislation could be updated over a period of months in the lead up to the commencement date of section 1 of the Bill. It should be possible for any associated costs to be absorbed within existing budgets.

## Guidance for local authorities

9. There may also be some costs involved in providing new or updated guidance on the implications of the Bill to local authorities.

10. As with updating subordinate legislation, it is anticipated any revised guidance could be prepared and issued over the course of a period of months leading up to the commencement date of section 1 of the Bill. It is expected any associated costs could be absorbed within existing budgets.

## National awareness-raising campaign

11. Although not a requirement of the Bill, it would be appropriate for the Scottish Government to publicise the new 20 mph speed limit on restricted roads. The benefits of 20 mph speed limits can only be realised if the reduced limit is widely observed, which in turn requires drivers to be aware that the general (or “default”) speed limit in built-up areas has fallen from 30

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

mph to 20 mph. This will be particularly important if, as is assumed, signage requirements are updated so as to permit “repeater signs” only where a speed limit other than 20 mph applies. Drivers need to be re-educated, in other words, to interpret a lack of signage in a built-up area as meaning that a 20 mph limit applies and to drive faster only where signs clearly indicate a higher limit (such as 30 mph). It is also important that the reasons for the change in law – that is, the benefits of a reduced speed limit – are clearly understood by all motorists in order to promote a cultural change in society’s attitudes towards travelling at higher speeds in built-up areas.

12. For this reason, it is recommended the Scottish Government launch a major awareness-raising campaign to publicise the new 20 mph speed limit. It is anticipated this would include the display of prominent messages on roadside billboards and across print, broadcast and social media.

13. The Scottish Government prioritises and funds awareness-raising campaigns from its marketing budget. In 2016-17, the total amount spent on marketing was £4.6m.<sup>1</sup> It is for Ministers to decide how this money is split between the different policy areas each year.

14. There were five campaigns (out of a total of 29) which cost over £300,000 in 2016-17, the most expensive campaign being ‘Detect cancer early’ which cost nearly £450,000 and the second most expensive being ‘Read Write Count’ which cost just over £370,000. Whilst it is difficult to compare the figures for each campaign, as there is limited information about what each involved, the ‘Detect cancer early’ campaign is thought to be a suitable comparator as it was a national campaign, which operated over a few years and promoted a number of key messages. On the basis of this information, therefore, an indicative figure of **£450,000 per year, for two years** would seem a reasonable starting estimate for a 20 mph awareness-raising campaign.

15. The cost of such an awareness-raising campaign could – depending on the choices made by Scottish Ministers – be met by the existing marketing budget. Anything significantly higher than this indicative figure

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<sup>1</sup> Scottish Government (2017). Scottish Government Marketing Spend 2016-17. Available at: <https://beta.gov.scot/publications/marketing-spend-2016-2017/>.

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

would require Scottish Ministers either to fund fewer campaigns each year, or to increase the overall marketing budget.

16. Professor Alan Tapp and Adrian Davis from the University of the West of England have drafted a social marketing plan for the Bill based on Bristol City Council's marketing campaign when a city-wide 20 mph speed limit was rolled out in 2014-15.<sup>2</sup> Tapp and Davis's projected costs to implement the social marketing plan are set out in this Financial Memorandum for information only; they are not included in the member's estimated costs.

17. The authors recommend a social marketing strategy to build social disapproval of residential speeding over a two or three-year period before and during the 20 mph limit roll-out.<sup>3</sup> They suggest a budget of £2m per year which would equate to £4-6m over two or three years.

18. Tapp and Davis also highlight the importance of community engagement and activism as part of a social marketing plan. They argue the 2.7 mph average drop in speed in Bristol – as opposed to the 1.4 mph average drop in speed recorded after Portsmouth introduced a 20 mph limit in 2007 – might be because the city council did a sizeable amount of engagement at local level and some (albeit limited) work on compliance with partners at community level. Tapp and Davis suggest “the premise to take into the Scotland recommendations is that ‘activated’ communities – if well supported – might be able to help localise and ‘action’ the national communications campaign”.<sup>4</sup>

19. Based on the costs of community engagement and activism in Bristol, Tapp and Davis estimate that an additional £3m, spread across 10 years (an average of £300k/year), would be required to achieve a similar level in

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<sup>2</sup> Tapp, Alan and Davis, Adrian (2018). Driver Compliance with 20 mph Limits in Scotland: A Social Marketing Plan. Available at:

<https://greens.scot/files/driver-compliance-with-20-mph-limits-a-social-marketing-plan-finalfinalpdf>.

<sup>3</sup> The report recommends (page 3) an overall strategy to “combine three strands: targeted enforcement, a population level social marketing ‘culture change’ campaign and community level engagement activities. If we can identify the correct strategy, these three strands should act in synergy, reinforcing each other to create powerful behaviour change.”

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

Scotland. They suggest this should be ‘front loaded’ over the first three years.

20. To implement both of Tapp and Davis’s recommendations would cost at least £2.3m per year for the first two or three years. As already noted, meeting this cost from the Scottish Government’s marketing budget would require Scottish Ministers either to fund fewer campaigns or to increase the overall marketing budget.

## Enforcement

### Levels of compliance with the speed limit

21. Department for Transport (DfT) statistics<sup>5</sup> show the proportion of vehicles exceeding the speed limit on various categories of road. These are reproduced in Table 1:

Table 1: Vehicles exceeding speed limit

Road / Speed Limit Vehicle type	Roads with 20 mph limit	Roads with 30 mph limit	Single carriageway roads	Motorways
Car	81%	53%	8%	46%
Light van	80%	56%	n/a	47%
Articulated HGV	71%	43%	24%	1%
Rigid HGV	73%	51%	28%	n/a

22. These figures show that, while 53% of cars (which made up 78% of traffic in 2016<sup>6</sup>) exceed a 30 mph limit, 81% exceed a 20 mph limit<sup>7</sup>. Put

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<sup>5</sup> Department for Transport (29 June 2017). Free Flow Vehicle Speed Statistics: Great Britain 2016. Available at: <https://www.gov.uk/government/statistics/vehicle-speed-compliance-statistics-for-great-britain-2016>.

<sup>6</sup> Department for Transport (23 November 2017). Transport Statistics Great Britain: 2017 report summary, page 14. Available at: [https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/661933/tsgb-2017-report-summaries.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/661933/tsgb-2017-report-summaries.pdf).

<sup>7</sup> This refers only to “20 mph roads with free-flow conditions (i.e. excluding roads with traffic calming measures ...)”.

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

another way, lowering the speed limit from 30 mph to 20 mph typically leads to an increase of 53% in the proportion of cars speeding on those roads.<sup>8</sup> (The proportions of vans and HGVs speeding increase by comparable amounts.<sup>9</sup>) This reflects the fact that reducing the speed limit by 10 mph (from 30 mph to 20 mph) typically reduces actual average speeds by a significantly smaller amount (e.g. 2.7 mph in Bristol). It is, therefore, reasonable to assume that, as the number of roads with a 20 mph limit increases, the number of vehicles exceeding the speed limit will also increase.

23. The DfT also publishes information about the proportion of traffic that travels on the different categories of roads which shows that “urban minor roads” (B, C and unclassified roads)<sup>10</sup> carry 21% of all road traffic. Motorways account for another 21% of traffic, urban A-roads for 15%, rural A-roads for 29%, and rural minor roads for 14%.<sup>11</sup>

24. While it is difficult to put these two sets of figures together, it can be roughly calculated that 11% (53% of 21%) of all traffic consists of vehicles speeding on urban minor roads. A further 10% of all traffic consists of vehicles speeding on motorways (46% of 21%) and 5% consists of vehicles speeding on single-carriageway roads (8% of 58%)<sup>12</sup>. Accordingly,

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<sup>8</sup> An 81% non-compliance rate is 53% higher than a 53% non-compliance rate.

<sup>9</sup> For vans and rigid HGVs, the increase is 43%, for articulated HGVs it is 65%. Vans account for 14% of all traffic and HGVs for 5% (see footnote 6 for source).

<sup>10</sup> This is a broader category than restricted roads, in that it includes B class roads as well as C class and unclassified roads. On the other hand, “urban” is here used only to cover towns and cities with populations over 10,000, so excludes minor roads in smaller built-up areas.

<sup>11</sup> Transport Statistics Great Britain: 2017 report summary, page 14 (see footnote 6).

<sup>12</sup> For these purposes, the category of single-carriageway roads (used in the speeding statistics) has been equated with the urban A-roads, rural A-roads and rural minor roads categories (used in the road-use statistics). The 8% is an underestimate in that it refers only to cars; speeding rates are significantly higher for HGVs (although these make up only 5% of all traffic).

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

roughly 42% of all speeding currently takes place on urban minor roads.<sup>13</sup> If the speed limit on all urban minor roads was reduced from 30 mph to 20 mph then a 53% increase in non-compliance (i.e. speeding) on those roads would lead to total speeding increasing by 22%.<sup>14</sup>

25. Taking into account that not all speed limits on urban minor roads are currently 30 mph and that some limits will remain higher than 20 mph after the Bill comes into force, an overall increase in speeding of 15-20% is probably a more realistic estimate. (Should the marketing campaign be highly effective in shifting driver attitudes to speeding, it is possible that levels of compliance with the new, lower limit will come close to matching current levels of compliance – in which case, there may be little or no overall increase in levels of speeding.)

## **Methods of enforcement**

26. Speed limits are mainly enforced by automatic speed cameras and by speed checks undertaken by the police. Most speeding drivers are given a fixed penalty notice (FPN), as an alternative to prosecution, which normally involves paying £100 and having three points added to their licence; the driver can either accept this penalty or contest it in court. Drivers who already have nine points on their licence, or were driving at a speed significantly higher than the limit, are likely to be prosecuted. The penalty for a driver convicted in court is a fine of up to £1,000 or disqualification. Most speeding prosecutions are likely to be dealt with in a Justice of the Peace court.

## **Crown Office and Procurator Fiscal Service and Scottish Courts and Tribunal Service**

27. If speeding increases by 15-20% as a result of the Bill (see paragraph 24 above), it is reasonable to assume that prosecutions for speeding will increase by the same proportion, and that this will lead to some additional

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<sup>13</sup> The proportion of all traffic exceeding the speed limit is  $11 + 10 + 5 = 26\%$ . Of this, the speeding traffic on urban minor roads (11%) is  $11/26 = 42\%$ .

<sup>14</sup> This assumes that drivers' greater propensity to speed in built-up areas when the limit is 20 mph (rather than 30) doesn't affect their propensity to speed elsewhere.

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

costs for the Crown Office and Procurator Fiscal Service (COPFS) and Scottish Courts and Tribunal Service (SCTS).

28. The Scottish Government publication *Costs of the Criminal Justice System in Scotland 2015-16* sets out the average cost for a case to be considered in a court in Scotland.<sup>15</sup> The average prosecution costs, which would fall to COPFS, are £421 and the average court costs, which would fall to SCTS, are £225 per procedure heard in the Justice of the Peace court.

29. Table 2 sets out some possible costs falling to COPFS and SCTS, using the total number of prosecutions for speeding-related offences in 2016-17 as a baseline figure.<sup>16</sup> For the purposes of this table, increases of 10% and 20% are projected.<sup>17</sup> If the number of prosecutions for speeding increases by 20% under the Bill, annual prosecution costs would increase by £966k for COPFS and £516k for SCTS; a 10% increase in prosecutions would result in an increase of £483k for COPFS and £258k for SCTS per year. These additional costs do not take into account any fines which may be paid by those convicted; speeding fines are submitted to the UK Treasury through the SCTS.<sup>18</sup>

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<sup>15</sup> Scottish Government (2016). *Costs of the Criminal Justice System in Scotland 2015-16*. Available at: <http://www.gov.scot/Topics/Statistics/Browse/Crime-Justice/Publications/costcrimjustscot>. See table 2, Estimates of the unit cost of criminal procedures, 2015-16.

<sup>16</sup> Scottish Government, *Criminal Proceedings in Scotland, 2016-17*. Available at: <https://beta.gov.scot/publications/criminal-proceedings-scotland-2016-17/documents/00532010.pdf?inline=true>. See page 53, table 4(a), People proceeded against by main crime/offence, 2007-08 to 2016-17 (final column).

<sup>17</sup> The 20% increase is the upper end of the 15-20% range calculated above. The 10% increase factors in the prospect of higher compliance levels with 20 mph limits as a result of a national awareness-raising campaign.

<sup>18</sup> City of Edinburgh Council, *Frequently asked questions about the 20mph limit*, page 6. Available at: [http://www.edinburgh.gov.uk/download/downloads/id/9727/20mph\\_faq\\_august\\_2017.pdf](http://www.edinburgh.gov.uk/download/downloads/id/9727/20mph_faq_august_2017.pdf). Accessed 28 June 2018.



This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

Table 2: Prosecution costs for speeding offences

<b>Number of prosecutions</b>	<b>Baseline</b>	<b>10% increase in speeding offences</b>	<b>20% increase in speeding offences</b>
<b>Costs on:</b>	11,468	12,615	13,762
<b>COPFS</b>			
<b>Cost</b>	£4,828,028	£5,310,915	£5,793,802
<b>Increase</b>	n/a	+£482,887	+£965,774
<b>SCTS</b>			
<b>Cost</b>	£2,580,300	£2,838,375	£3,096,450
<b>Increase</b>	n/a	+£258,075	+£516,150

## Costs on local authorities

30. The bulk of the costs relating to reducing the speed limit on restricted roads would fall to local authorities.

## Changing speed limit signs and road markings

31. Most local authority costs relate to ensuring that the correct signs and road markings, which alert a driver to the applicable speed limit, are in place.

## Replacing terminal 30 mph signs; creating transition zones

32. Existing “terminal” 30 mph signs (erected at the point at which an unrestricted road becomes a restricted road) would need to be replaced with 20 mph signs. It may also be that, in some instances, road markings would need to be burned off and replaced.

33. A reduction in speed from 60 mph to 20 mph as a road enters a built-up area may be considered too large a reduction (compared with the reduction from 60 to 30 mph) to be managed in a single step. In these circumstances, a 40 mph or 30 mph transition zone would need to be created (by means of a speed limit order) and additional signs placed, and possibly road markings added, accordingly.

34. Angus Council (with an urban road length of 227 miles and a population of 117,000) has estimated that it would need to spend around

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

£230k on changing terminal signage and markings (including erecting additional 40 mph signs to create “transition zones”). Scaling up to Scotland as a whole requires a multiplication factor of around 45 (Scotland’s urban road length is 10,264 miles) or 46 (Scotland’s population is around 5.4m), giving an estimated cost of around £11m.

## **Adjusting signage in existing 20 mph speed limit areas and zones**

35. Areas with 20 mph speed limits in place before the Bill comes into force will have “repeater signage” in place reminding drivers that a 20 mph speed limit applies. Once 20 mph becomes the general speed limit on restricted roads, it is likely that such signage will need to be removed.

36. Current regulations do not permit the placement of “repeater signage” where the speed limit is 30 mph and the road is lit by street-lamps.<sup>19</sup> This is why, at present, 30 mph signs are only erected at the point at which that speed limit first applies in a built-up area, but signs indicating a different speed limit (e.g. 20 mph or 40 mph), are erected at regular intervals. This is based on the principle that drivers should keep to the default speed limit for built-up areas unless there are signs indicating that a different speed limit applies on that stretch of road. It is assumed this principle will be maintained after the Bill’s provisions are in force – and hence that 20 mph repeater signs will not be permitted, while repeater signs are likely to be needed where other speed limits (e.g. 30 mph) apply.

37. The City of Edinburgh Council has estimated that the cost of adapting to a new general speed limit by removing recently-erected 20 mph repeater signs would be around £414k.<sup>20</sup> It is difficult to scale this amount up for Scotland without more information about the extent of existing 20 mph limits in other local authority areas, but since Edinburgh is one of the biggest authorities and one of the first to implement widespread 20 mph limits, the Scotland total may not be more than £1m or £2m.

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<sup>19</sup> Traffic Signs Regulations and General Directions 2016, Schedule 10, Part 2, item 1 and Part 4, direction 2. Available at:

<http://www.legislation.gov.uk/ukxi/2016/362/schedule/10/made>

<sup>20</sup> Source: SCOTS report, Table 5: £33k for pole removal and £381k for sign removal.

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

38. In addition, changes may be needed to terminal signage for current 20 mph “zones” (areas where the limit is 20 mph and where traffic-calming measures have been installed) where the speed limit beyond these zones changes from 30 mph to 20 mph; and to signage for part-time 20 mph limits (e.g. in the vicinity of schools) where these become absorbed into wider 20 mph limits. No estimates for these adaptations have been included because of a lack of data on the number of such 20 mph zones and part-time limits or the costs of signage changes.

### **Faster ‘through routes’**

39. It is recognised that most local authorities will favour maintaining a limited network of faster “through routes” in towns and cities on which higher speed limits (most likely 30 mph) will continue to apply, once the limit on most other roads (particularly in residential areas) has fallen to 20 mph.

40. Since a network of faster “through routes” is likely to account for only a small minority of roads in a town or city, the Bill should significantly reduce the work involved in identifying the streets that need to be made subject to a speed-limit order.<sup>21</sup> Thus, while it is expected that local authorities would incur some costs under the Bill relating to using the order-making process to introduce a network of roads with a higher speed limit, these costs would be lower than they must currently incur to achieve a similar outcome (i.e. 20 mph limits on the majority of streets in built-up areas).

41. It is anticipated these costs would include appropriate signage at the entry and exit points of the faster “through routes”, 30 mph repeater signs and road markings.

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<sup>21</sup> Edinburgh now has around 750 miles of roads subject to 20 mph (source: City of Edinburgh Council), out of an urban total of around 821 miles (91%). In Scotland, if all urban A-roads retained a 30 mph limit, this would account for 8% of the urban total, and if all urban A and B-roads retained a 30 mph limit, this would account for 12% of the urban total. For road length statistics, see: <https://www.gov.uk/government/statistical-data-sets/road-length-statistics-rdl>

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

42. Angus Council has estimated that it would cost around £271k to adjust signage for 30 mph limits on A-class roads within towns.<sup>22</sup> Multiplying by 45 or 46 (on an urban road-length or population basis) gives a Scotland-wide total of around £12m.<sup>23</sup> The City of Edinburgh Council has estimated the cost of 30 mph repeaters and roundels as around £354k. Multiplying by 12.5 or 11 (on an urban road-length or population basis) gives a Scotland-wide total of around £4m.<sup>24</sup> Combining these two estimates suggests a Scotland-wide total in the region of £8m (but with a significant margin of uncertainty).

## Monitoring

43. Many local authorities already monitor on a routine basis the speeds at which vehicles travel within their areas. It may be helpful however, for speeds to be monitored in a more systematic way across Scotland following the implementation of the Bill. It is expected this would include an initial survey of traffic speed in a number of key locations prior to implementation in order to provide a baseline data framework for subsequent traffic speed surveys to be measured against. The monitoring would be broad enough to establish the impacts on different road users and measure progress against key objectives.

44. The City of Edinburgh Council allocated £130,000 to monitor the roll-out of the 20 mph network in Edinburgh. This was allocated to the first (£70,000) and second (£60,000) years of the three-year roll-out period.<sup>25</sup> Multiplying up on an urban road-length basis, the total cost for Scotland would be around £1.6m; multiplying on a population basis gives a total of

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<sup>22</sup> Source: SCOTS report, table 1.

<sup>23</sup> The two calculations yield totals of £12.2m and £12.5m; combining the two and further rounding gives an estimate of £12m.

<sup>24</sup> Scotland has 10,265 miles of urban roads, 12.5 times that of Edinburgh (see FN19). Scotland's population (5.4 million) is roughly 11 times that of Edinburgh's (495,000). These two ratios give estimates of £4.4m and £3.9m.

<sup>25</sup> City of Edinburgh Council, 20 for Edinburgh: 20 mph network implementation, report to the Transport and Environment Committee meeting, 17 March 2015, paragraph 5.5, table 1, available for download at: [http://www.edinburgh.gov.uk/info/20243/20mph\\_for\\_edinburgh/1024/about\\_20mph\\_for\\_edinburgh](http://www.edinburgh.gov.uk/info/20243/20mph_for_edinburgh/1024/about_20mph_for_edinburgh)

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

around £1.4m.<sup>26</sup> Since many local authorities already monitor vehicle speeds in their areas and so will have some budget already allocated for this purpose, a Scotland-wide total of £1m may be more realistic.

**Local authority totals**

45. Possible total costs for local authorities based on the above estimates are:

Element	Estimated cost
Replacing terminal 30 mph signs, plus transition zones	£11m
Removing 20 mph repeater signs (where currently in place)	£1–2m
Erecting 30 mph repeater signs on through-routes	£8m
Monitoring	£1m
<b>Total (rounded)</b>	<b>£21–22m</b>

46. The first three elements (signage) would probably have to be paid for within one or two financial years, in preparation for commencement of the new general speed limit – i.e. at least £10m per year for the first two years.

47. The above estimate roughly matches the SCOTS lower estimate of £19.2m. SCOTS estimates that the total cost could be spread over six years, but with around 90% of the cost concentrated in two years (the first two years from the date of commencement) – i.e. around £9m in each of those two years.

**Costs on other bodies, individuals and businesses**

**Police Scotland**

48. The Bill would make no change to Police Scotland’s responsibility for enforcing the speed limit. Police Scotland currently undertakes speed checking exercises at various points of the road network and it is anticipated this would continue.

49. Additional enforcement by way of speed checks by Police Scotland would likely be beneficial, at least in the short term, to help deliver a

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<sup>26</sup> See FN 24.

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

meaningful shift in driver behaviour, but this is not a requirement of the Bill and would be an operational decision for Police Scotland.

50. There were 791,000 fixed penalty notices (FPNs) issued for speed-limit offences in England and Wales in 2015, 92% of them detected by speed cameras.<sup>27</sup> On a population basis, therefore, it is likely the figure for Scotland will be around 75,000 FPNs each year, with around 6,000 of those detected by the police. If this number increased in line with the anticipated 15-20% increase in speeding, it would require Police Scotland to issue an additional 900 to 1,200 FPNs annually.

51. The Scottish Government has previously assumed that the main cost involved with FPNs is that of police time and that 5-15 minutes would be required for each one. Police Scotland gives a cost of £53 per hour of a constable's time.<sup>28</sup> Assuming an average time of 10 minutes to issue a FPN, it would cost just under £9 to issue each one, creating an additional annual cost of around £8k to £11k. Note that the revenue from FPNs goes direct to the UK Treasury and so cannot be directly offset against any costs.

## Other bodies

52. It is not anticipated there will be any significant costs attributable to the Bill on other public sector bodies.

## Individuals

53. Concerns have been raised that a 20 mph speed limit on restricted roads would result in increased journey times in towns and cities due to vehicles travelling at a slower speed. However, research suggests that indicates journey times would not significantly increase and that traffic flow is smoother through junctions when vehicles travel at slower speeds.<sup>29</sup> In its submission to the consultation on the draft proposal for this Bill, the City

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<sup>27</sup> Free Flow Vehicle Speed Statistics: Great Britain 2016, page 13 – see footnote 5.

<sup>28</sup> Police Scotland website, Organising an event. Available at: <http://www.scotland.police.uk/contact-us/organising-an-event/>.

<sup>29</sup> City of Edinburgh Council (13 January 2015). Busting the myths around Edinburgh's 20 mph roll-out. Available at: [http://www.edinburgh.gov.uk/news/article/1743/busting\\_the\\_myths\\_around\\_edinburghs\\_20\\_mph\\_roll-out](http://www.edinburgh.gov.uk/news/article/1743/busting_the_myths_around_edinburghs_20_mph_roll-out).

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

of Edinburgh Council stated that “from a recent test of journey times in Edinburgh on six typical city centre-suburb routes (travelling at 20 mph and at 30 mph), total journey times increased by less than one minute across these entire routes”.<sup>30</sup>

## Businesses

54. As noted above, it is not thought a 20 mph speed limit on restricted roads would significantly increase the journey times for business vehicles in towns and cities. In addition, business vehicles may be more likely to travel on faster “through routes” than cars, and so spend less time on roads limited to 20 mph.

## Summary of costs

55. Table 3 below summarises the anticipated costs associated with the Bill.

Table 3: Summary of costs

<b>Annual cost in: Costs on:</b>	<b>First two years</b>	<b>Later years</b>
<b>Scottish Government</b>	£450k (marketing)*	n/a
<b>COPFS</b>	£483k – 966k	£483k – 966k
<b>SCTS</b>	£258k – 516k	£258 – 516k
<b>Local authorities</b>	£9m - 10m (signage)	£0 – 1m (monitoring)**
<b>Police Scotland</b>	n/a	n/a
<b>Total (rounded)</b>	<b>£10.2 – 11.9m</b>	<b>£0.75 – 2.5m</b>

\* It may be possible to accommodate this expenditure within the Scottish Government’s existing marketing budget.

\*\* It may be possible to accommodate this expenditure within local authorities’ existing budgets.

<sup>30</sup> City of Edinburgh Council, consultation response (ID: 61964723).

Available at:

[https://greens.scot/sites/default/files/Campaigns/Safer%20Streets/Consultation%20Responses/Organisational/ID-61964723%20%28City%20of%20Edinburgh%20Council%29\\_0.pdf](https://greens.scot/sites/default/files/Campaigns/Safer%20Streets/Consultation%20Responses/Organisational/ID-61964723%20%28City%20of%20Edinburgh%20Council%29_0.pdf) (176KB pdf).

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

## Savings

56. Whilst some costs will be incurred in order to implement the Bill, particularly in the first few years, it is also anticipated the Bill would result in significant long-term savings.

## Savings for local authorities

57. As set out above, local authorities would incur costs when implementing the Bill. At the same time, however, for those local authorities seeking to make 20 mph the normal speed limit in built-up areas, particularly on residential streets, the Bill should make this process more efficient and cheaper. This is because, as indicated above, it is much simpler to use an order-making process to impose higher speed limits on a small network of through routes than to impose lower speed limits on every residential street.

58. The campaign group 20's Plenty for Us has estimated that the approach taken in the Bill would be between five and eight times cheaper than the cost involved in all 32 Scottish local authorities implementing widespread 20 mph limits on the model used by the City of Edinburgh Council.<sup>31</sup>

## Savings for other bodies, individuals and businesses

59. The BRITE (Bristol Twenty miles per hour limit Evaluation) Study estimated that the 20 mph speed limit in Bristol avoided 4.53 fatal, 11.3 serious and 159.3 slight injuries per year. Using Department for Transport figures for the costs of accidents, the study estimated a total annual saving of £15.25m.<sup>32</sup> Using these figures from Bristol, and accounting for the difference in population, this would equate to 54 fatal, 136 serious and

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<sup>31</sup> Source: [http://www.20splenty.org/scots\\_default\\_20mph](http://www.20splenty.org/scots_default_20mph). This assumes that higher-speed through routes would account for no more than 20% of roads in built-up areas, and that no signage would be required on the 80% of roads subject to a 20 mph limit. It also assumes a cost of £250k for a national awareness-raising campaign, lower than estimated in this Memorandum.

<sup>32</sup> Available at: <http://eprints.uwe.ac.uk/34851/>.



This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

1,912 slight injuries being avoided in Scotland per year, and annual savings of £183m.<sup>33</sup>

60. Department for Transport statistics show that, in 2016, there were 10,883 casualties on Scottish roads, of which 191 were fatalities and 1,694 were serious injuries. Of these, 4,187 casualties – including 25 fatalities and 554 serious injuries – were from accidents on B, C or unclassified roads in built-up areas.<sup>34</sup> The reductions extrapolated from the Bristol study would therefore amount to a roughly 50% reduction in overall casualties on restricted roads. However, there is clearly no prospect of a lower speed limit on restricted roads securing a reduction of 54 fatalities (as implied by extrapolating from the Bristol study) when this is twice the current level of fatalities on such roads in Scotland.

61. As noted in the Policy Memorandum, there is evidence that accident rates can fall by around 5% for each 1 mph reduction in speed, and that 20 mph limits are associated with falls in average speed of around 2 mph (e.g. 1.7 mph in Portsmouth, 1.9 mph in Edinburgh and 2.7 mph in Bristol<sup>35</sup>). More realistic estimates might therefore be based on reductions of 8% or 14% in accident and fatality rates.<sup>36</sup> Based on current Scotland-wide accident rates, that would suggest either 2 or 3.5 fewer fatalities a year; 44 or 78 fewer serious injuries and 289 or 505 fewer slight injuries. The associated savings can be calculated using Transport Scotland accident and casualty costs tables<sup>37</sup>, broken down according to the category of saving involved.

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<sup>33</sup> The population of Scotland is (5.4m) is approximately 12 times the population of Bristol (456,000).

<sup>34</sup> Department for Transport (2017). Reported casualties by built-up and non built-up roads, road class, region and severity, Great Britain, latest available year (Table RAS30033). Available at:

<https://www.gov.uk/government/statistical-data-sets/ras30-reported-casualties-in-road-accidents>

<sup>35</sup> See Policy Memorandum, paragraphs 33 and 36, for sources.

<sup>36</sup> The 8% figure is from the Portsmouth reduction (1.7 x 5%, rounded down); the 14% figure from the Bristol reduction (2.7 x 5%, rounded up).

<sup>37</sup> Transport Scotland (11 October 2017). Reported Road Casualties Scotland 2016. Available at: <https://www.transport.gov.scot/publication/reported-road-casualties-scotland-2016/sct09170291561-18/>.

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

## Police Scotland

62. The evidence from areas where a 20 mph speed limit has already been introduced shows the number of traffic accidents, and consequential injuries and fatalities, is reduced. On this basis, therefore, the Bill should result in fewer road traffic accidents and, where there is an accident, there will be fewer severe injuries or fatalities. In terms of Police Scotland, this would mean fewer responses to a fatal or serious road traffic accident and, therefore, free up resources for other duties.

Table 4: Value of accidents prevented: Police Scotland

Type of accident	Police costs per accident	Accidents prevented per year (lower / higher estimates)	Savings per year (rounded) (lower / higher estimates)
<b>Fatal</b>	£20,116	2 / 3.5	£40.2k / £70.4k
<b>Serious</b>	£2,360	44 / 78	£104k / £184k
<b>Slight</b>	£609	289 / 505	£176k / £308k
<b>Total (rounded)</b>		335 / 587	<b>£320k / £562k</b>

## Health boards

63. A reduction in the number of traffic accidents, and consequential injuries and fatalities, would also benefit NHS Scotland in terms of ambulance services and hospital treatment. As set out earlier, a reduced speed limit not only reduces the likelihood of accidents occurring but, if they do occur, it would reduce the severity of the accident and lower the chances of those involved being killed. This not only reduces demand for a high-intensity response to emergency situations but reduces the long-term resource demand, as a lesser injury generally requires fewer return appointments, fewer specialists in delivering a care plan, shorter stays in hospital and other care facilities and fewer secondary conditions as a result of the initial trauma.

Table 5: Value of accidents prevented: Health Boards

Type of accident	Medical and ambulance costs per	Accidents prevented per year	Savings per year (rounded)

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

	<b>accident</b>		
<b>Fatal</b>	£6,438	2 / 3.5	£13k / £23k
<b>Serious</b>	£16,358	44 / 78	£720k / £1.28m
<b>Slight</b>	£1,429	289 / 505	£413k / £722k
<b>Total (rounded)</b>		335 / 587	<b>£1.1m / £2m</b>

64. The health benefits of a reduced speed limit – arising from the expectation of an increase in active travel and improvements in air quality – should also result in some savings to the NHS.

## Individuals

65. There would be extensive benefits for individuals associated with a reduced speed limit on restricted roads – improved road safety, increased opportunities for active travel, better integration with the local community, a reduced sense of isolation vulnerability and an improved general environment. In terms of quantifiable cost, the main one is that associated with “pain, grief and suffering” for victims of road-traffic accidents, their families and friends.

Table 6: Value of accidents prevented: pain, grief and suffering

<b>Type of accident</b>	<b>Costs per accident</b>	<b>Accidents prevented per year</b>	<b>Savings per year (rounded)</b>
<b>Fatal</b>	£1,336,431	2 / 3.5	£2.7m / £4.7m
<b>Serious</b>	£185,696	44 / 78	£8.2m / £14.5m
<b>Slight</b>	£16,047	289 / 505	£4.6m / £8.1m
<b>Total (rounded)</b>		335 / 587	<b>£15.5m / £27.3m</b>

## Businesses

66. For businesses, the main saving relates to lost output associated with road traffic accidents prevented.

This document relates to the Restricted Roads (20 mph Speed Limit) (Scotland) Bill (SP Bill 39) as introduced in the Scottish Parliament on 21 September 2018

Table 6: Value of accidents prevented: lost output

Type of accident	Costs per accident	Accidents prevented per year	Savings per year (rounded)
<b>Fatal</b>	£678,236	2 / 3.5	£1.4m / £2.4m
<b>Serious</b>	£27,247	44 / 78	£1.2m / £2.1m
<b>Slight</b>	£3,368	289 / 505	£973k / £1.7m
<b>Total (rounded)</b>		335 / 587	<b>£3.6m / £6.2m</b>

## Summary of savings

67. The table below summarises the annual savings associated with the anticipated reduction in accidents that the Bill is expected to generate. This does not include other anticipated savings that are more difficult to quantify, such as health benefits from an increase in active travel.

Table 6: Value of accidents prevented: totals

Total savings per year Category	Lower estimate (5% accident reduction)	Higher estimate (10% accident reduction)
Police Scotland (accident costs)	£0.3m	£0.6m
Health boards (treatment costs)	£1.1m	£2.0m
Individuals (pain, grief and suffering)	£15.5m	£27.3m
Business (lost output)	£3.6m	£6.2m
<b>Total</b>	<b>£20.5m</b>	<b>£36.1m</b>

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# Restricted Roads (20 mph Speed Limit) (Scotland) Bill

## Financial Memorandum

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