

We're Jammin'

A comprehensive nationwide study into how traffic management is leading to costly delays for the UK taxpayer

A British Infrastructure Group (BIG) Report
by The Rt. Hon Grant Shapps MP

Published: May 2016

Who is the British Infrastructure Group (BIG)?

The British Infrastructure Group (BIG) of MPs is led by The Rt Hon Grant Shapps MP and is dedicated to promoting better infrastructure across the entire United Kingdom.

Each report focusses on a different area of current or future infrastructure need. There is also a focus on unnecessary infrastructure, trying to find inefficiencies that can be eliminated or improved.

BIG is about ensuring every opportunity for growth is seized with bold new ideas and recommendations, backed by authoritative research and evidence.

At its core, the British Infrastructure Group firmly believes that Britain should lead the world in cutting edge policy developments and infrastructure investment in order to drive forward our economy for the benefit of both this and future generations.

It is in this spirit that the British Infrastructure Group publishes its third report, 'We're Jammin''. BIG has undertaken its own comprehensive research to produce brand new data, the first of its kind, on just how cluttered the UK's roads are with traffic control measures. The data shows that local authorities across the UK are spending large sums of money installing and maintaining traffic equipment, like traffic lights and instructional signs, that are too often unnecessary and exacerbating congestion. BIG also questions why authorities do not actually keep track of their inventories of signs and other systems.

The UK road network is vital to the economy. It is used by millions every day to keep the country moving. It is therefore extremely important to make using it as efficient and safe as possible. Although there are good features to the UK traffic management system the current model fails too often to promote growth and frustrates motorists.

This report urges local authorities to call time on installing increasing numbers of traffic control measures without first considering the wider impact. It is clear that rather than speeding up journeys, they are slowing them down. Removing many of these controls, particularly traffic lights, would go a long way to making road travel more efficient and better for the economy and saving individual motorists money.



The Rt. Hon Grant Shapps MP

Executive Summary & Key Findings

- In a comprehensive survey of every UK highways authority, BIG has achieved a response rate of 85% which accounts for 93% of the UK road network, making this the only survey of its kind currently available.
- **Over-engineered:** over-engineering (too many traffic lights and other road features) costs the UK economy up to £16bn a year, equating to £514 per registered car in the UK.
- **Out of control traffic lights:** the number of controlled junctions has increased by 66% since 2000, massively outpacing an increase in traffic of just 9%. Additionally, road lengths have only increased by 2.6% since 1994.
- **A traffic light every 6 miles:** the comprehensive BIG data reveals that there is a controlled junction or crossing, such as traffic lights, for every 5.7 miles of the UK's quarter of a million miles of road.
- **Expensive to maintain:** BIG data also shows that these controls cost the taxpayer around £37.5 million each year just to maintain.
- **Costly to families:** Transport costs account for the highest weekly cost for the average UK household^[1].
- **Cluttered and messy roadsides:** BIG data found that many authorities don't keep track of their inventories for signs and other items, around 1 in 4, despite spending large amounts on just maintaining them.
- **More balanced approach required:** This British Infrastructure Group report calls on local authorities to rethink the UK's road network and their approach to traffic management. Before opting for yet more lights and controls, highways authorities should also balance cost to the motorist and economy.

^[1] ONS Family Spending 2015 Edition, December 2015, <http://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/compendium/familyspending/2015/chapter4trendsinhouseholdexpenditureovertime>, accessed 15 March 2016.

Quotes

Edmund King OBE, AA president

“This report graphically highlights the pressure roads, business and drivers in the UK face. With 34m vehicles, a similar number of drivers and a population of 65m in the UK there is huge pressure on space. Our roads are our biggest and most used transport system yet we fail to nurture and exploit it to full potential. Capacity weakness is endemic, the lack of adequate maintenance quite shocking and apathy seems to exist as regards trying to do some things differently.

“The UK has an enviable road safety record and we must continue to ensure that record improves. There is undoubtedly scope to be bolder in terms of easing back on some regulations and control, some of which seems to by-pass democratic scrutiny, public understanding and logic at local level. The speed restrictions that are needed when children are going into or out of school are not always necessary at 2am. Continued regulation will be necessary and unavoidable to keep road users safe but there are a growing number of examples which show controls and convention can sometimes be successfully relaxed.

“Sometimes we do need to stand back and review traffic and parking restrictions as often the historic reason for the restriction has long gone. A review of yellow lines can create more parking spaces.

“In some areas pedestrians and cyclists should have priority but in other areas needless restrictions just obstruct free movement of traffic. We need a balance.”

Nicholas Lyes, RAC Public Affairs Manager

“The RAC welcomes this report which raises many salient points on Britain’s congested roads. Congestion causes misery for millions of motorists every year. The 2015 RAC Report on Motoring shows that more than half of motorists (53%) believed their journey times had increased as a result of congestion when compared to the previous year.”

“Clearly traffic controls in many situations are essential for the safety of all road users, however local authorities should explore making signals ‘smarter’, where signals can be adjusted according to traffic flow and also be prepared to switch some of these off when roads are quieter.”

“It is also important that increasing cycling infrastructure in towns and cities must be proportionate to demand. However, whilst the RAC supports 20mph zones in densely populated and high risk areas, such as near schools and hospitals, imposing them on busy through-routes can lead to an unnecessary increase in journey times and poor compliance.”

“Improving traffic flow isn’t just beneficial to journey times, it can improve economic efficiency, play a huge role in reducing pollution in city centres with vehicles not constantly stop-starting, and also contribute to lower Carbon Dioxide emissions and improved fuel economy. This report provides a number of positive solutions to help get motorists on the move.”

Introduction

“There is an overwhelming case for the removal of huge numbers of traffic control measures from the UK road network”

“UK roads carry around 90% of passenger traffic and 70% of all freight”

“A two minute delay to each car trip costs the UK £16 billion each year”

1. This report contends that there is an overwhelming case for the removal of a large number of traffic control measures from the UK road network, including things like traffic lights and instructional signs. At the moment the UK is littered with traffic control measures that cause huge inefficiencies damaging the UK economy by billions of pounds every year, hitting individual motorists in their pockets and also inconveniencing them. The number of controls introduced has exploded in recent times, particularly over the last 20 years far in excess of the increase in the number of vehicles on the road.
2. The UK has a large road network and it is vital to the health of the economy with UK roads carrying around 90% of passenger traffic and 70% of all freight¹ with 37.5 million registered vehicles in the UK. It is therefore of clear importance to ensure that traffic on the roads flows as efficiently as possible. Further highlighting the role roads play every day for those in the UK is the fact that transport costs account for the highest weekly cost for the average UK household². It is obvious that faster and cheaper journeys are in the interest of road users and the UK economy as a whole. An IEA study has found that just a two minute delay to each car trip costs the UK £16 billion each year³. It is therefore vital to the economy that every measure be taken to promote greater efficiency on our roads.
3. BIG has conducted its own large scale comprehensive research and data gathering exercise to show just how many measures are in place and how much these cost the taxpayer to maintain each year. The data found that local authorities across the UK are spending large sums of money installing and maintaining traffic equipment, like traffic lights and instructional signs, that are, too often, unnecessary and exacerbating congestion. BIG was also alarmed to discover that many

¹ Department for Transport (2014), Transport Statistics Great Britain.

² ONS Family Spending 2015 Edition, December 2015, <http://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/compendium/familyspending/2015/chapter4trendsinhouseholdexpenditureovertime>, accessed 15 March 2016.

³ Seeing Red: Traffic Controls and the Economy, IEA Discussion Paper 68, Cassini, M. and Wellings, R., January 2016, 8, <http://www.iea.org.uk/sites/default/files/in-the-media/files/IEA%20Seeing%20Red%20%20Traffic%20Controls%20and%20the%20Economy.pdf>

“The current means and methods being used to manage traffic are not achieving what they set out to”

“The UK road network is in danger of becoming more inefficient in a time where we need it to be boosting economic growth”

“BIG believes a fundamentally new approach to traffic management is needed”

authorities don't keep track of their inventories for signs and other items despite freely spending huge amounts on just maintaining them. Local authorities therefore seem determined to pursue a top down means of controlling road use that pays little attention to whether this actually improves the situation. Research has found that in many cases these measures, introduced often with the intention of improving efficiency, have done anything but. Cost benefit analysis has been ignored because conventional wisdom requires these authorities to put in place ever increasing traffic control measures.

4. It is therefore time for something different. The current means and methods being used to manage traffic are not achieving what they set out to. The UK road network is in danger of becoming more inefficient in a time where we need it to be boosting economic growth. BIG believes a fundamentally new approach to traffic management is needed. This report argues that local authorities should seek to trial new ideas, such as those already seen in Drachten and Bohmte or even closer to home in Portishead, where controls have been stripped back or removed outright to encourage the concept of 'shared space'. Ultimately the UK should pursue what works rather than unthinkingly following what essentially amounts to an 'anti-car' approach to managing road use. It must be done for the good of those who use the roads and the UK economy as a whole.

The Importance of Roads

“The priority should be to make journeys as fast and cheap as possible”

“Motor vehicles travelled 311 billion miles on the Great British road network in 2014”

“It is important that we make these miles as efficient as possible. Faster and cheaper journeys benefit all of us”

5. Millions of people make use of the UK road network every day. This includes people commuting to work, people who use the roads as part of their work, freight traffic and a whole host of other purposes. It is a vital aspect of the UK economy and is a major area of spending by both private individuals, businesses large and small and also local and national government. Therefore the priority should be to make journeys as fast and cheap as possible. However, highways authorities seem determined to make it as inconvenient as possible to use a vehicle on their roads. This is particularly the case in larger towns and cities where there appears to be an active policy of promoting ‘anti-car’ measures.
6. Since 2000 the rate at which levels of traffic on roads in Great Britain has slowed considerably when compared to earlier periods. It was growing gradually until 2007, when the recession caused traffic levels to fall and this trend has only just started to reverse. The overall levels in 2014 were only slightly higher than in 2000, around 7% in terms of miles travelled⁴. Motor vehicles travelled 311 billion miles on the Great British road network in 2014⁵. This number climbs higher if we look at the provisional estimates for October 2014 to September 2015, with traffic reaching 316.1 billion miles, a 9% increase since 2000⁶. The most up to date government data shows there are 36.5 million registered vehicles in Great Britain, 30.2 million of these are cars⁷. Data for Northern Ireland reveals there are around 1 million registered vehicles there, nearly 900,000 being cars⁸. This therefore gives a total UK figure of 37.5 million registered vehicles of which 31.1 million are cars. The total road length in Great Britain is estimated to stand at 245,800 miles in 2014, which represents an increase of only 4,900 miles since 2004 and 6,300 miles since 1994, a 2% and 2.6% increase respectively.⁹

⁴ <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN02659>, accessed 5 March 2016.

⁵ Ibid

⁶ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/475125/provisional-road-traffic-estimates-great-britain-oct-2014-sep-2015-report.pdf, accessed 18 March 2016

⁷ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/483899/vis-q3-2015.pdf, accessed 15 March 2016

⁸ <http://www.belfasttelegraph.co.uk/news/northern-ireland/cars-the-star-as-northern-ireland-people-ditch-public-transport-30616653.html>, accessed 23 March 2016.

⁹ https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/428857/road-lengths-in-great-britain-2014.pdf, accessed 18 March 2016

“Faster commutes also mean better rested employees as less time is spent reaching work, further enhancing productivity”

“Transport costs are the largest area of consumer spending according to the most recently available data from the ONS”

“A more efficient road network could help to directly reduce the costs of transport by easing fuel consumption”

7. It is important that we make these miles as efficient as possible. Faster and cheaper journeys benefit all of us. It means less time spent stuck in traffic jams but it also has much more profound importance than that. As the Institute for Economic Affairs discussion paper on traffic controls and the economy found, making journeys cheaper and quicker has a number of positive consequences for the economy¹⁰. The costs of doing business are lowered, which also boosts competition and productivity. One example could be a delivery from an online retailer being cheaper because less time is spent getting the package to you, which also means you receive it even faster. These benefits will also be felt by employees. Being able to commute faster means you can commute further for that amount of time you would have spent commuting under a slower system, therefore opening up a bigger potential pool of job opportunities¹¹. Faster commutes also mean better rested employees as less time is spent reaching work, further enhancing productivity¹².
8. Transport costs are the largest area of consumer spending according to the most recently available data from the ONS¹³. The average household spent £74.80 per week on transport in 2014, overtaking housing costs (excluding mortgages), where the average overall weekly spend was £531¹⁴. ONS data shows the long term trend of weekly transport costs falling, until 2014 when they rose again¹⁵. It is vitally important to ensure that the UK does not see a rise in transport costs when it plays such a central role to providing access to work, leisure and retail. A more efficient road network could help to directly reduce the costs of transport by easing fuel consumption and the general running costs of a vehicle.

¹⁰ Seeing Red: Traffic Controls and the Economy, IEA Discussion Paper 68, Cassini, M. and Wellings, R., January 2016, 15, <http://www.iea.org.uk/sites/default/files/in-the-media/files/IEA%20Seeing%20Red%20%20Traffic%20Controls%20and%20the%20Economy.pdf>

¹¹ Ibid

¹² Research Summary Personal Mobility, Economic Growth and Poverty Reduction, Demographia, <http://www.demographia.com/db-tr-econ.pdf>, accessed 15 March 2016

¹³ <http://www.ons.gov.uk/peoplepopulationandcommunity/personalandhouseholdfinances/incomeandwealth/compendium/familyspending/2015/chapter4trendsinhouseholdexpenditurevertime>, accessed 15 March 2016

¹⁴ <http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/rel/family-spending/family-spending/2015-edition/index.html>, accessed 15 March 2016

¹⁵ <http://webarchive.nationalarchives.gov.uk/20160105160709/http://www.ons.gov.uk/ons/rel/family-spending/family-spending/2015-edition/chapter-4--trends-in-household-expenditure-over-time.html>, accessed 15 March 2016

“Businesses benefit enormously from efficient road networks”

9. Businesses benefit enormously from efficient road networks, whether this be through more productive employees, speedier and cheaper logistics and allowing them access to a greater pool of potential employees. Many companies seek to set themselves up alongside similar businesses. We often see this in business parks that are located alongside main roads and highways outside of city centres¹⁶. This means cheaper rents and cheaper overheads than being forced to do business in expensive city centres. Where similar businesses cluster together this also offers new opportunities to lower the costs of delivering services. It is therefore extremely important that these areas are easily accessible by road. There are also business that rely even more heavily on the road network, such as haulage firms and private hire vehicles, whether these are self-employed taxi drivers or those employed through a larger business. The benefits here are obvious.

¹⁶ <http://www.building.co.uk/cost-model-business-parks/3068895.article>, accessed 15 March 2016

The Problems with Current Policy

“Regulation should be used as a last resort when other means of conducting our daily lives and business have failed”

10. Regulation can be immensely useful and protect people from harm and exploitation. There are of course necessary traffic calming measures and techniques that are useful on efficiency and safety grounds. However, just because some regulations are good doesn't mean they all are. Regulation should be used as a last resort when other means of conducting our daily lives and business have failed. Unfortunately this does not seem to be the attitude that highways authorities have been taking. The evidence suggests that they view more regulation as a good in itself regardless of whether it actually brings about any benefits. Some councils even seem to think it desirable to remove cars off their roads all together as an end in itself, regardless of whether this is actually beneficial or not. The current state of traffic regulation and control in the UK is overwhelming and not working.

“In the last 20 years the UK has seen an explosion in traffic control measures on its roads”

11. In the last 20 years the UK has seen an explosion in traffic control measures on its roads. This has been far in excess of the much more modest growth in levels of traffic on the roads. UK towns and cities have been taken over by traffic light controlled junctions, bus lanes, cycle superhighways, congestion charges and blanket speed restricted zones. There are also millions of instructional signs littering the sides of roads, not all of them useful or indeed instructional in the traditional sense. There seems to be a rigid belief that traffic can only be managed effectively by taking a top down controlling approach that creates frustrating inefficiencies. It must be said that these controls are not necessarily always bad things in of themselves. Cycle lanes make cyclists safer in some situations and smart signalling systems can improve the efficient flow of traffic. However, huge problems are created when controls are introduced without a proper analysis of their costs and benefits being conducted.

“Traffic controls and management is a hugely expensive business”

12. Traffic control and management is a hugely expensive business, with highways authorities in England alone spending around £1.5 billion on traffic management, road safety, planning, policy, strategy and parking services¹⁷. However, this is before you consider the costs of the

¹⁷ Seeing Red: Traffic Controls and the Economy, IEA Discussion Paper 68, Cassini, M. and Wellings, R., January 2016, 25, <http://www.iea.org.uk/sites/default/files/in-the>

“Authorities don’t always seem to keep an inventory of the measures they own and maintain”

“Some weren’t even able to tell us how much they spent doing this, just that they did spend”

“Local councils are imposing permits on people who wish to park outside their own property... this hits those least able to afford it the hardest”

problems that it also causes in addition to the direct expenditure. A previous study has found that just a two minute delay to each car journey costs the UK £16 billion each year¹⁸. BIG therefore took this amount and investigated what this means for the average UK motorist and household. There are 31.1 million registered cars in the UK. Therefore the indirect £16 billion cost equates to around £514 per registered car. This is a staggering amount of money that really highlights the drastic importance of ensuring that the road network is being efficiently managed. However, the evidence suggests that it is far from well managed.

13. One of the more concerning things that this report has discovered is that highways authorities don’t always seem to keep an inventory of the measures they own and maintain. When conducting Freedom of Information (FOI) requests to highways authorities BIG found that many simply did not track how many signs they were responsible for maintaining. Some weren’t even able to tell us how much they spent doing this, just that they did spend. This problem is even worse at the national level and other studies and reports have also found numbers hard to track down¹⁹. Cassini and Wellings estimated that as of 2014 there were roughly 15,000 signal controlled junctions and 18,000 pedestrian crossings, which would represent an increase of 25% since 2000 when there were 26,000 of them combined²⁰. When you compare this to the more modest 9% rise in traffic levels over the same period²¹ and the also small increase in road length²² it does raise serious concerns about how necessary these measures are. BIG’s research has found that authorities report a lot less than what has been found above. BIG’s comprehensive data reveals that there are actually roughly 43,000 of these crossing and junctions, which would represent an even bigger increase of around 66% since 2000. This may be down to a difference in the definitions of junctions and crossings, with the authorities reporting a signal controlled junction as 1 item when it could be made up of a number of individual signals, called signal heads, that most people would consider a traffic light. This serves to reinforce the problem of trying to find consistent data on these issues as

[media/files/IEA%20Seeing%20Red%20%20Traffic%20Controls%20and%20the%20Economy.pdf](#)

¹⁸ Ibid, 8.

¹⁹ Ibid, 17

²⁰ Ibid, 18

²¹ <http://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN02659>, accessed 7 March 2016.

²² https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/428857/road-lengths-in-great-britain-2014.pdf, accessed 15 March 2016

“Another growing cause for concern, especially in densely populated areas, is the proliferation of parking restrictions”

“Restrictive parking also directly hurts local businesses”

“Research conducted by BIG suggests that there are huge costs, both financial and environmental, to running traffic lights”

authorities don't seem to keep a consistent track of the controls they manage. What it definitely shows is that the UK is seeing an explosion in the numbers of these controls at a huge cost to the economy and individual motorists.

14. Another growing cause for concern, especially in densely populated areas, is the proliferation of parking restrictions. This applies to both residential and commercial areas. Local councils are imposing permits on people who wish to park outside their own property and have been doing so for years. Like much of the anti-car attitudes seen by many local authorities, this hits those least able to afford it the hardest. This is especially the case with councils who make permits more expensive for less fuel efficient vehicles as those with older cars are usually people who cannot afford to replace them with a more efficient model. This is a clear example of authorities forcing a green agenda on people rather than using parking policy to sensibly address the issues of limited space in more built up and populated areas. These policies retrospectively punish drivers with older cars and have little to do with sensibly controlling limited parking space. The London borough of Hackney seems to pride itself on being anti-car. They are forcing new developments to be 'car free' and trying to encourage greater bus use²³. The problem with this is the vast majority of Hackney residents already don't own cars, around 65%, but suffer from one of the slowest bus routes in London, the 38²⁴. Restrictive parking also directly hurts local businesses with many smaller businesses complaining that the lack of parking spaces and the excessively high costs of using them puts people off visiting them and instead heading online²⁵. BIG was already concerned about the damage being done to businesses by restrictive Sunday trading laws and is concerned that this is yet another hurdle that traditional high street retailers will have to face²⁶.
15. We must also consider whether these policies and measures do actually improve the environment as is so often claimed. The research conducted by BIG suggests that there are huge costs, both financial and environmental, to running traffic lights. It is incredibly difficult to find out how much a traffic lights costs to run but we have calculated that

²³ <http://www.theguardian.com/cities/2015/apr/28/end-of-the-car-age-how-cities-outgrew-the-automobile>, accessed 15 March 2016

²⁴ http://www.hackneygazette.co.uk/news/the_real_speed_of_vital_hackney_bus_services_revealed_1_4422917, accessed 18 March 2016

²⁵ <http://www.talkingretail.com/category-news/independent-news/nfrn-horror-parking-fees-hike/>, accessed 18 March 2016.

²⁶ 'Sunday Trading for the 21st Century', British Infrastructure Group, February 2016.

“It costs around £583.33 a year for a single traffic light to operate”

“This therefore not only causes delays and damage to the economy but also plays a huge role in increasing pollution levels”

it costs around £583.33 a year for a single traffic light to operate. This is just for the direct costs of running one and doesn't even factor in how things like pedestrian crossings and traffic lights add to fuel consumption when drivers break and accelerate, often to and from complete stops. Cars sit gridlocked in jams held up by these controls expelling carbon dioxide and other pollutants into the atmosphere and lungs of those walking by. This therefore not only causes delays and damage to the economy but also plays a huge role in increasing pollution levels. If you improve traffic flow you also lower pollution levels. Then there are the unsightly streets and junctions covered in road signs, some useful many not, making cluttered towns and cities less pleasant places to be. At the very least, authorities should be turning their traffic lights off at night when all they do is serve to cause unnecessary delays. Whilst not all traffic lights are redundant, the current types of lights in use are. Authorities must also look at introducing 'smarter signalling systems' that can be adjusted depending on traffic volumes.

BIG Data, Big Problems

“BIG achieved a response rate of 85%... which covers 93% of the UK road network”

“25% of the highways authorities... don’t have a full [sign] inventory”

“Authorities appear to be pursuing a policy of installing traffic controls for the sake of it”

16. Considering the importance of the road network to the UK economy, it is surprising and worrying that there is not readily and easily available data. Previous attempts to examine the numbers and impact of road traffic controls have often had to rely on estimates as the figures are hard to come by. BIG therefore conducted its own comprehensive data gathering exercise by using the Freedom of Information legislation to make requests to every local authority in the UK responsible for its own highways. BIG requested information on how many miles of road they were responsible for maintaining and how much was spent in the last two financial years on this. Information on how many traffic lights and junctions each authority managed was requested along with how much this cost to maintain and how many instructional traffic signs they had and how much this cost as well. This survey data therefore makes this report unique in that there is nothing else really like it available. BIG achieved a response rate of 85% from those surveyed which covers 93% of the UK road network. This extremely high response rate has allowed the report to extrapolate the figures up to what a 100% response rate would be representative of.

17. The data shows a country that is covered in traffic control measures that also cost the taxpayer a fortune to maintain whilst also delaying their journeys and hurting the economy. There is also an alarmingly high number of authorities who are unable to say how many instructional road signs they manage and maintain because they don’t keep track of this. 25% of the highways authorities that responded to the FOI admitted that they don’t have a full inventory. This number rises to 31% if we include responses that were unusable due to missing information. There are also a number of authorities who don’t have a breakdown for how much they spend on maintaining and running traffic lights and the instructional signs, around 16%. This number again rises if we include responses that were unclear and missing information. This further reinforces one of the main contentions of this report; that highways authorities appear to be pursuing a policy of installing traffic controls for the sake of it without even keeping a close eye on what they already have or are even spending. Highways authorities must focus on creating full inventories of their controls so they can efficiently and effectively oversee their costs and also the impact they have on traffic flow.

“The UK has around 43226 signal controlled junctions on its 245,000 mile long road network”

“For every 5.7 miles of road there is a controlled junction or crossing”

“Crossings cost the taxpayer an average of £37.5 million every year”

“It costs roughly £583 to run a single traffic light in energy costs alone”

18. The useful data that was provided by authorities that responded in time reveals just how much is spent on maintaining instructional signs and signal controlled crossing, like traffic lights and pelican crossings. Unsurprisingly, larger towns and cities tend to have a larger proportion of controlled crossings and signs per mile of road. The majority of these controls are not necessary and serve merely to delay traffic. This is particularly the case at night when roads tend to be quieter with few pedestrians out as well, yet driving across towns and cities can be a long and drawn out affair when empty roads are still being managed by traffic lights despite the roads being largely quiet.

21. This report achieved an 85% response rate from the authorities that were surveyed, which covers 93% of maintained roads in the UK. From this we were able to extrapolate the data up to cover the entire network. This means the UK has around 43226 controlled junctions on its 245,068 mile long road network. As a result of this, BIG can reveal that for every 5.7 miles of road there is a controlled junction or crossing slowing the network down. These crossings cost the taxpayer on average £37.5 million every year in maintenance costs alone, money that could be being spent on more useful services. This equates to around £1.20 for every registered car in the UK, £1.40 for each household or £0.60 per head of population. Tables 1, 2 and 3 show the 20 authorities that have the most controlled junctions and crossings per mile of road, spend the most per control and control per head of population respectively.

22. Further research conducted by BIG has found that it costs roughly £583 a year to run a single traffic light in energy costs alone. When you consider that the majority of traffic lights could be removed without detriment and would in fact improve the efficiency of the road network the argument for their removal becomes even stronger. Table 4 shows that a traffic light that requires power for 24 hours a day every day of the year shows how many other essential consumer items and devices that could be run for this amount of time. For example, 16 fridges can be run for the same cost as a traffic light or 6 desktop PCs could be turned on all day every day for a year instead. When you factor in how long these items typically draw power for, such as kettles and washing machines, you can see just how wasteful traffic lights really are.

“The average driver ignores 70% of traffic signs”

“Traffic control measures and signs take some of the responsibility off the driver”

23. Instructional road signs, such as give way signs, traffic signal signs and tunnel ahead signs, have proliferated across the UK in recent years. This report contends that whilst there are useful and necessary road signs, there are also a large number of them that serve more as distractions to drivers than serve any real useful purpose. It has been found that the average driver ignores 70% of traffic signs anyway²⁷. Road users will all have seen stretches of roads and junctions where there are huge numbers of unnecessary signs. Apart from being a distraction they are also having a more profound effect on people’s attitudes and mentality when behind the wheel. Traffic control measures and signs take some of the responsibility off the driver as they allow the outside information to have the biggest influence over their approach when driving. These measures mean drivers rely more on outside instructions than they do on their own first-hand information and natural reaction to the situation in front of them. Signs should only be installed when they are absolutely necessary, such as warning large vehicles that they may be too heavy for a road or too tall for a bridge. Authorities should also be aware of their inventories but a shocking 25% of those surveyed were unable to provide the requested information. 16% of respondents could not accurately tell us how much was spent either. It is therefore hard to provide an accurate figure for the number of signs in the UK without resorting to estimates and guesswork. This is a worrying sign of unaccountable and out of control spending. However, as table 5 demonstrates, the authorities that were able to provide complete data have an incredible number of signs to maintain. One example, the London Borough of Tower Hamlets, has a shocking 148 signs per mile of road.

²⁷ <http://www.spiegel.de/international/spiegel/controlled-chaos-european-cities-do-away-with-traffic-signs-a-448747.html>, accessed 15 March 2016

Table 1 - Top 20 Highway Authorities With the Most controls per mile of road

Authority	Miles of Road	Number of traffic lights/signals/crossings	Miles of road per traffic light/signal/crossing
Highways England	4350	9204	0.47
Middlesbrough Borough Council	314.9	485	0.65
Transport Scotland	2115	1833	1.15
Birmingham City Council	1615.6	1235	1.31
London Borough of Sutton	257.5	195	1.32
Leicester City Council	507	362	1.40
City of Edinburgh	901.8	587	1.54
Nottingham City Council	502.6	301	1.67
Slough Borough Council	192.6	108	1.78
Reading Borough Council	245.6	132	1.86
Southampton City Council	369	197	1.87
Wolverhampton City Council	461	243	1.90
Bournemouth Borough Council	323.8	167	1.94
Stoke-on-Trent City Council	542.7	278	1.95
Aberdeen City Council	568	276	2.06
Portsmouth City Council	296.45	144	2.06
Southend-on-Sea Council	266	125	2.13
Dudley Metropolitan Borough	649	294	2.21
Sheffield City Council	1180	530	2.23
West Dunbartonshire	232.6	103	2.26

Table 2 - Top 20 Highways Authorities for highest average cost per control

Authority	Number of traffic lights/signals/crossings	Annual cost of maintaining traffic lights/signals/crossings 2013/14 (£)	Annual cost of maintaining traffic lights/signals/crossings 2014/15 (£)	Average cost of last 2 financial years	Annual cost per traffic light/signal/crossing
Lincolnshire County Council	305	1252500	1269000	1260750	4,133.61
Angus Council	57	157010	236188	196599	3,449.11
Blackburn with Darwen Borough Council	84	234523	275253	254888	3,034.38
City of York	68	200000	200000	200000	2,941.18
Pembrokeshire Council	8	24447	21882	23164.5	2,895.56
Thurrock Council	65	182794	176726	179760	2,765.54
Neath Port Talbot Council	28	77702	67522	72612	2,593.29
Oxfordshire County Council	392	958000	977000	967500	2,468.11
Kent County Council	691	1700000	1700000	1700000	2,460.20
Department for Regional Development	1055	2860163	2310162	2585162.5	2,450.39
Wiltshire Council	191	441000	421000	431000	2,256.54
Medway Council	220	505604	457915	481759.5	2,189.82
Redcar and Cleveland	34	79589	68695	74142	2,180.65
Bridgend County Borough Council	69	176524	112529	144526.5	2,094.59
Calderdale	120	262000	238000	250000	2,083.33
Bracknell Forest Council	77	160000	160000	160000	2,077.92
Durham County Council	140	238044	333257	285650.5	2,040.36
East Riding of Yorkshire Council	91	174000	183000	178500	1,961.54
Shetland Islands Council	10	15752	22398	19075	1,907.50
Slough Borough Council	108	205138	167060	186099	1,723.14

Table 3 - Top 20 Highways Authorities with most controls per head of population

Authority	Number of traffic lights/signals/crossings	Population	People per traffic light/signal/crossing
Middlesbrough Borough Council	485	139,100	287
Aberdeen City Council	276	229,000	830
City of Edinburgh	587	492,700	839
West Dunbartonshire	103	89,700	871
Midlothian Council	98	86,200	880
Birmingham City Council	1235	1,101,400	892
Stoke-on-Trent City Council	278	251,000	903
Leicester City Council	362	337,700	933
London Borough of Sutton	195	198,100	1,016
Gateshead Metropolitan Borough Council	197	200,500	1,018
Swindon Borough Council	209	215,800	1,033
Fife Council	355	367,300	1,035
Wolverhampton City Council	243	253,000	1,041
Renfrewshire Council	167	174,200	1,043
Nottingham City Council	301	314,300	1,044
Wirral Metropolitan Borough	302	320,900	1,063
Sheffield City Council	530	563,700	1,064
Dudley Metropolitan Borough	294	315,800	1,074
Dundee City Council	131	148,300	1,132
Bournemouth Borough Council	167	191,400	1,146

Table 4 - Power Comparisons for Traffic Lights

Sources: <http://www.frequencycast.co.uk/howmanywatts.html>; updated energy price from <https://www.scottishpower.co.uk/pdf/tariffs/2015/online-fixed-january-2017.pdf>

Provider: Scottish Power (Tariff: Fixed Price, London)

Rate: 12.109 pence per kilowatt-hour

Rate last checked: 15th March 2016

Product	Notes	Watts	Cost per hour	Daily usage (hours)	Estimated cost a year (2016)	Estimated cost for 24/7/52	Times
60 watt lightbulb	Standard bulb	60	£0.01	5	£13.26	£63.65	9
Energy-saving bulb (Philips)	Equivalent to a standard 60 w bulb	11	£0.00	5	£2.43	£11.66	50
Kettle	Average kettle 1800 watts	1800	£0.20	0.25	£19.89	£1,909.00	0.3
Washing Machine	Average cycle (2000w heat, 500w spin, 250 wash)	700	£0.08	2	£61.88	£742.56	0.8
Fridge	Average fridge consumes 35 watts	35	£0.00	24	£37.13	£37.13	16
Desktop PC	Average 60 watt idle, 120 loaded	90	£0.01	8	£31.82	£95.46	6
Nokia mobile charger	Nokia 6033, screen on	4	£0.00	24	£4.24	£4.24	138
iPhone 3G charger	Charging with screen off	2	£0.00	24	£2.12	£2.12	275
Traffic Light	Operates 24 Hours a Day					£583.83	

Table 5 - Top 20 Highways Authorities with the most signs per mile of road

Authority	Miles of Road	Number of road signs and traffic signs maintained	spend on the maintenance of road signage 2013/14 (£)	spend on the maintenance of road signage 2014/15 (£)	Signs per mile of road
London Borough of Tower Hamlets	171.69	25500	Not Held	Not Held	148.52
City of London Corporation	39.4	4294	84297	76681	108.98
City of Westminster	207.5	21900	27000	32000	105.54
London Borough of Hackney	166.25	16100	361000	361000	96.84
London Borough of Wandsworth	244	19950	164870	168654	81.76
Portsmouth City Council	296.45	21170	Not Provided	Not Provided	71.41
Bracknell Forest Council	250	15604	232761	232761	62.42
Birmingham City Council	1615.6	100000	Not Held	Not Held	61.90
Slough Borough Council	192.6	11526	248005	173539	59.84
Sheffield City Council	1180	64557	Not Held	Not Held	54.71
Transport Scotland	2115	109453	Not Held	Not Held	51.75
Fife Council	1516.3	77791	102024	118046	51.30
London Borough of Enfield	363.1	18442	413008	413008	50.79
London Borough of Bromley	547	27453	43763	39187	50.19
London Borough of Hounslow	270	13262	869000	405000	49.12
London Borough of Camden	160	7578	65147	95705	47.36
Cambridgeshire County Council	2700	123491	362202	329823	45.74
Southampton City Council	369	16140	348293	353074	43.74
City of York	491.3	21365	Not Held	Not Held	43.49
Cardiff Council	687.5	28758	138935	115311	41.83

Getting Rid of the Jams

“The current approach authorities are taking to traffic management and control is not working”

“There is a promising solution in the form of the concept of ‘shared space’”

“The idea of shared space is to encourage greater awareness of those using the roads to other road users”

24. The current approach authorities are taking to traffic management and control is not working. UK towns and cities are at a standstill for most of the day, especially at rush hour when the lack of capacity and unnecessary traffic controls are really felt by road users. The current approach is also incredibly wasteful in both direct costs to taxpayers as well as the indirect costs it has to the UK economy as a whole in delays and pollution.

25. However, there is a promising solution in the form of the concept of ‘shared space’. The idea of shared space is to encourage greater awareness of those using the roads to other road users²⁸. It is about placing more responsibility on individual road users to encourage cooperation and for users to react and adapt to the situation in front of them rather than being coerced by traffic lights and other top down traffic controls²⁹. Drivers and other road users become more alert as they are responsible for their own driving behaviour and not merely obeying the third hand instructions of signs, signal junctions and other controls. Rather than competing with other road users to squeeze through a time limited green light at a junction, road users instead are enabled to cooperate with others. There are also social benefits to be had from this idea, with town centres becoming much more pleasant places to be where everything is integrated together rather than being a mess of traffic lights and signs. The idea first became popular in mainland Europe with the Dutch town Makkinga removing all signs and other controls and by all accounts it has been a sweeping success³⁰. Drachten entirely removed its traffic lights, with one particular junction seeing a fall in accidents from 10 per year to just 1 per year after the chance was made³¹.

26. The first fully shared space in the UK was introduced in Ashford back in 2008. The intention was to redesign the ring road to stop it from acting

²⁸ <http://www.citymetric.com/skylines/shared-spaces-clever-trick-safer-roads-or-step-backwards-chaos-981>, accessed 15 March 2016

²⁹ <http://www.telegraph.co.uk/motoring/road-safety/11072664/Britains-town-centre-roads-need-more-shared-spaces-expert-says.html>, accessed 15 March 2016

³⁰ <http://www.spiegel.de/international/spiegel/controlled-chaos-european-cities-do-away-with-traffic-signs-a-448747.html>, accessed 15 March

³¹ <http://www.telegraph.co.uk/cars/features/where-have-all-the-white-lines-gone/>, accessed 15 March 2016

“Accident rates fell by an incredible 41% and evidence suggests congestion has lessened”

“With journey times being improved by 50% and there being no measurable change to safety”

“With traffic moving more smoothly and journey times have improved as well despite the slower speeds being adopted”

as a restriction on traffic into the centre of town from the surrounding areas. This was achieved by removing the standard traffic control measures, such as traffic lights, and simplifying the layout. By essentially every standard measure the scheme has been and continues to be a huge success. Accident rates fell by an incredible 41% and evidence suggests congestion has lessened, improving traffic flow, despite an increase in road users³².

27. Ashford is far from the only example of a form of shared space being introduced in the UK and seeing positive changes. London has seen the idea introduced on Exhibition Road, running from South Kensington to Hyde Park. It has been transformed from a busy cluttered road to a leading example of what can be achieved by taking a different approach to managing traffic. It is a road that attracts millions of visitors each year to its internationally recognised museums and attractions and has made the road a much more pleasant place to be³³. Another example of a more limited adoption of shared space has been seen in Portishead and came about entirely by chance. Traffic lights were installed in a busy junction in 2004 and at huge cost to the tax payer. Unsurprisingly after their introduction congestion dramatically worsened. Then one day the lights failed for a few hours and these jams evaporated, which eventually led to a trail that saw the lights turned off. The results were instant and profound with journey times being improved by 50% and there being no measurable change to safety³⁴.

28. The most comprehensive example of a shared space in the UK has been seen in Poynton where the intention was to help ease the congestion problem caused by the absence of a bypass. The main junction in the centre of town, by all accounts, made it an unpleasant place to be and delayed journeys of all kinds, particularly those made on foot³⁵. The evidence available again suggests the scheme has been successful. Speeds and accidents have dropped following the introduction of the shared space with traffic moving more smoothly and journey times have improved as well despite the slower speeds being adopted³⁶. The

³² Ibid.

³³ Ibid.

³⁴ <http://www.telegraph.co.uk/cars/features/where-have-all-the-white-lines-gone/>, accessed 15 March 2016

³⁵ <http://www.citymetric.com/skylines/shared-spaces-clever-trick-safer-roads-or-step-backwards-chaos-981>, accessed 15 March 2016

³⁶ Ibid

town has also been revitalised, with shops opening and footfall more than doubling³⁷.

“The town has also been revitalised, with shops opening and footfall more than doubling”

“The fact is, the vast majority of shared spaces, where they have been introduced and tried, have seen accidents fall, safety increase and congestion fall”

29. There has been criticism of shared spaces. A study found that people were not supportive of shared spaces and there have also been concerns in the areas where they were intended to be introduced. They labelled them as dangerous and felt unsafe about it³⁸. Residents in Ashford reported negative feelings about the shared space that was introduced there. However, the facts don't support this conclusion. It is similar to the levels of people who report being scared of being the victim of crime despite falling crime numbers. The fact is, the vast majority of shared spaces, where they have been introduced and tried, have seen accidents fall, safety increase and congestion fall³⁹. Residents may have voiced concerns about the Ashford project, but again this is not based in reality as safety actually improved⁴⁰. However, this report does appreciate that shared spaces will not be the answer in all situations, particularly on the busiest roads in the UK. Yet the report also argues that a more open minded approach is needed to traffic management, moving away from authoritarian top down control for the sake of it and to policies that work for particular scenarios.

³⁷Seeing Red: Traffic Controls and the Economy, IEA Discussion Paper 68, Cassini, M. and Wellings, R., January 2016, 36, <http://www.iea.org.uk/sites/default/files/in-the-media/files/IEA%20Seeing%20Red%20%20Traffic%20Controls%20and%20the%20Economy.pdf>

³⁸ <http://www.theihe.org/wp-content/uploads/2013/08/Holmes-Report-on-Shared-Space-.pdf>, accessed 15 March 2016

³⁹ Seeing Red: Traffic Controls and the Economy, IEA Discussion Paper 68, Cassini, M. and Wellings, R., January 2016, 34-36, <http://www.iea.org.uk/sites/default/files/in-the-media/files/IEA%20Seeing%20Red%20%20Traffic%20Controls%20and%20the%20Economy.pdf>

⁴⁰ <http://www.citymetric.com/skylines/shared-spaces-clever-trick-safer-roads-or-step-backwards-chaos-981>, accessed 15 March 2016

Conclusion

“There is an overwhelming case for the removal of huge numbers of traffic control measures from the UK road network”

“This BIG report therefore calls on all authorities... to place a moratorium on all planned new traffic control measures”

“Authorities have a duty to UK tax payers and road users to conduct full and proper cost benefit analysis before new schemes are introduced”

30. This report has shown the benefits that changing the UK’s approach to managing traffic could have. It has also shown just how much tax payer money is spent on maintaining infrastructure that is often unnecessary and wasteful. There is an overwhelming case for the removal of huge numbers of traffic control measures from the UK road network, including things like traffic lights and instructional signs. These cause huge inefficiencies that cost the UK economy billions every year. The numbers of controls introduced has been massively out of proportion with the much smaller increases in the number of vehicles on the road and the length of the road network as well.

31. This BIG report therefore calls on all authorities across the UK responsible for highways and the traffic controls on them to place a moratorium on all planned new traffic control measures. This report believes authorities have a duty to UK tax payers and road users to conduct full and proper cost benefit analysis before new schemes are introduced. This report has shown that top down traffic management schemes often cause more harm than good and at huge and unnecessary expense. When Council budgets are being trimmed it makes no sense to spend these sums on unnecessary traffic controls when the money could be spent on improving road surfaces and other services like this.

32. Therefore authorities should consider the following actions:

- Authorities must examine the possibility of introducing shared spaces in their localities. They will not be suitable in all situations but where they have been trialled they have improved journey times, traffic flow and congestion. They also make town centres more pleasant places to be
- Authorities must conduct cost/benefit analysis before introducing new top down controls on the roads. If the costs are found to outweigh the potential benefits then the scheme should not be allowed to progress.
- Consider trials of turning off traffic lights, as was seen with huge success in Portishead, to improve traffic flow and congestion. This will also save money on running and maintaining them. If authorities are reluctant to do so then

“This report calls on local authorities to consider these bold actions and move away from an expensive and often inefficient way of controlling traffic on the UK road network”

“These proactive steps will benefit all road users both directly and indirectly”

they should at least trial turning them off at night when they are even less useful and even more inefficient to improve journey times and cut down on their running costs. At the very least authorities should turn off traffic lights at night and look at introducing ‘smarter signalling systems’ that can be adjusted depending on traffic volumes.

- Authorities should also keep up to date inventories for the controls and signs that they are responsible for. This will help to encourage a more conservative approach to installing new controls and make it easier for them to be held accountable for what they have and their impact.
- Authorities must do all they can to increase road capacity, which would most effectively be achieved with the introduction of shared spaces. Increased road capacity means more space for everyone and the smoother flow of all types of traffic.

33. Therefore this report calls on local authorities to consider these bold actions and move away from an expensive and often inefficient way of controlling traffic on the UK road network. These proactive steps will benefit all road users both directly and indirectly by making journeys quicker, towns more pleasant places to be, boosting the economy through reducing delays and pollution and freeing up authority budgets to be spent on other more beneficial areas. It is time for authorities to act and implement these recommendations.

Full data sets available from [Shapps.com](https://shapps.com)