THE CONGESTION QUESTION

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LONDONASSEMBLY
Liberal Democrat Group

Foreword

Everyone hates congestion. It eats up our valuable time and creates immense frustration.

However it is far from just a personal inconvenience for Londoners. Congestion damages people's health and wellbeing by causing poor air quality, higher accident rates and higher levels of stress.

It is also bad news for London's businesses. By slowing down the time it takes to transport goods it creates a huge bill for businesses, especially smaller businesses. Congestion on our roads can also lead to employees getting to work late, as well as failing to get to key business meetings on time.

Around the world and over many decades public authorities have strived to come forward with solutions to tackle congestion, stretching from building new roads, to introducing road tolls and setting up new public transport systems. In 2003 London took the lead by becoming one of the first cities in the world to introduce congestion charging.

Yet the challenges of congestion remain in London. With the capital's population booming we need to face up to the reality that not all policies to tackle congestion have been as successful as once hoped.

Tackling congestion in London has never been more important and the need for new thinking has never been greater. This report sets out the current situation, and then puts forward a range of practical measures we should take to reverse the damaging trend of congestion in our capital city.

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Introduction

The Congestion Charge is a levy on motor vehicles entering a designated area of Central London, known as the Congestion Charge Zone, between 0700 and 1800 Monday-Friday. It is not charged on public holidays or between Christmas Day and New Year's Day. Enforcement is primarily based on automatic number plate recognition (ANPR). Cameras are located across the zone, with greater concentrations around the edges. Number plates are then checked against a database provided by the Driver and Vehicle Licensing Agency (DVLA). The system then 'cleans out' multiple readings of each number plate and charges are issued.

The Congestion Charge (CC) was controversial when introduced, but is now widely regarded as a success and enjoys broad support across the political spectrum. The power to create a congestion charge zone is contained within the Greater London Authority Act 1999.[1] The former Mayor of London used this power and launched the zone in February 2003, with the charge initially set at £5.

The standard fee now is £11.50 per day if paid by midnight on the day of travel, £14 if paid by the end of the following day, or £10.50 if registered with CC Autopay, an automated payment system which records the number of charging days a vehicle travels within the charging zone each month and bills the customer's debit or credit card each month. At present about 72% of drivers using the zone are CC Autopay account holders. There are a series of exemptions and discounts available.

Vehicles are exempt from paying the charge if they are registered with the DVLA as one of the following:

- Two-wheeled motorbikes (and sidecars) and mopeds.
- Emergency service vehicles, such as ambulances and fire engines, which have taxation class of 'ambulance' or 'fire engine' on the date of travel.
- NHS vehicles that are exempt from vehicle tax.
- Vehicles used by disabled people that are exempt from vehicle tax and have a 'disabled' taxation class.
- Vehicles for more than one disabled person (for example Dial-a-Ride) that are exempt from vehicle tax and have a 'disabled' taxation class.

Taxis and private hire vehicles are exempt from paying the Congestion Charge when actively licensed with London Taxi and Private Hire (TPH). The exemption for private hire vehicles only applies when undertaking private hire bookings.

Users of the Congestion Charge are eligible for a discount if they are registered with CC Autopay and meet one of the following conditions:

- Residents living in or very near to the zone (90% discount).
- Blue Badge holders (100% discount).
- Accredited breakdown vehicles and roadside recovery vehicles (100% discount).
- Vehicles with 9 or more seats (100% discount).
- Vehicles that qualify under the Ultra-Low Emissions Discount (ULED) (100% discount).
- Most motor-tricycles (100% discount).

The intention of the zone was to cut congestion in the centre of London by creating a disincentive to drive on weekdays. During its first years of operation it was effective at tackling congestion. In June 2007 TfL (Transport for London) reported that the number of chargeable vehicles entering the zone had reduced by 30% and that there had been an increase in the number of buses, taxis and bicycles.[2] The overall level of traffic entering the zone in 2006 was 16% lower than in 2002.[3] Had the Congestion Charge not been introduced the current levels of congestion within the zone would be significantly greater.[4]

The Congestion Charge has also raised significant levels of revenue, despite it costing £160 million to introduce the scheme in 2003. The net income the charge generated in the last financial year was £172.5 million. Over the last 12 years, the Congestion Charge has generated net revenue of over £1.4 billion that has been re-invested in London's transport infrastructure. £1.1 billion has been spent on improvements to the bus network, £119 million on roads and bridges, £74 million on road safety, £64 million on local transport/borough plans and £41 million on sustainable transport and the environment.

Figure 1: Congestion Charge Revenue

Year	Net Revenue (£m)	Standard daily congestion charge per car (£)
2002/03	-58.3	£5 (from 17 February 2003)
2003/04	45.3	£5
2004/05	96.4	£5
2005/06	106.3	£8 (from 4 July 2005)
2006/07	89.1	£8 [1]
2007/08	137	£8
2008/09	148.5	£8
2009/10	156.1	£8
2010/11	173.5	£10[2,3]
2011/12	136.8	£10
2012/13	138.5	£10
2013/14	149.2	£10
2014/15	172.5	£11.50[4] (from 16 June 2014)
2015/16	172.2[5]	£11.50
2016/17	179.6[6]	£11.50
TOTAL	**1842.7**	

Source: TfL Annual Report and Statement of Accounts

There are currently positive steps being taken, or in the pipeline, that will improve London's transport infrastructure and help reduce congestion on our road networks. Key examples include:

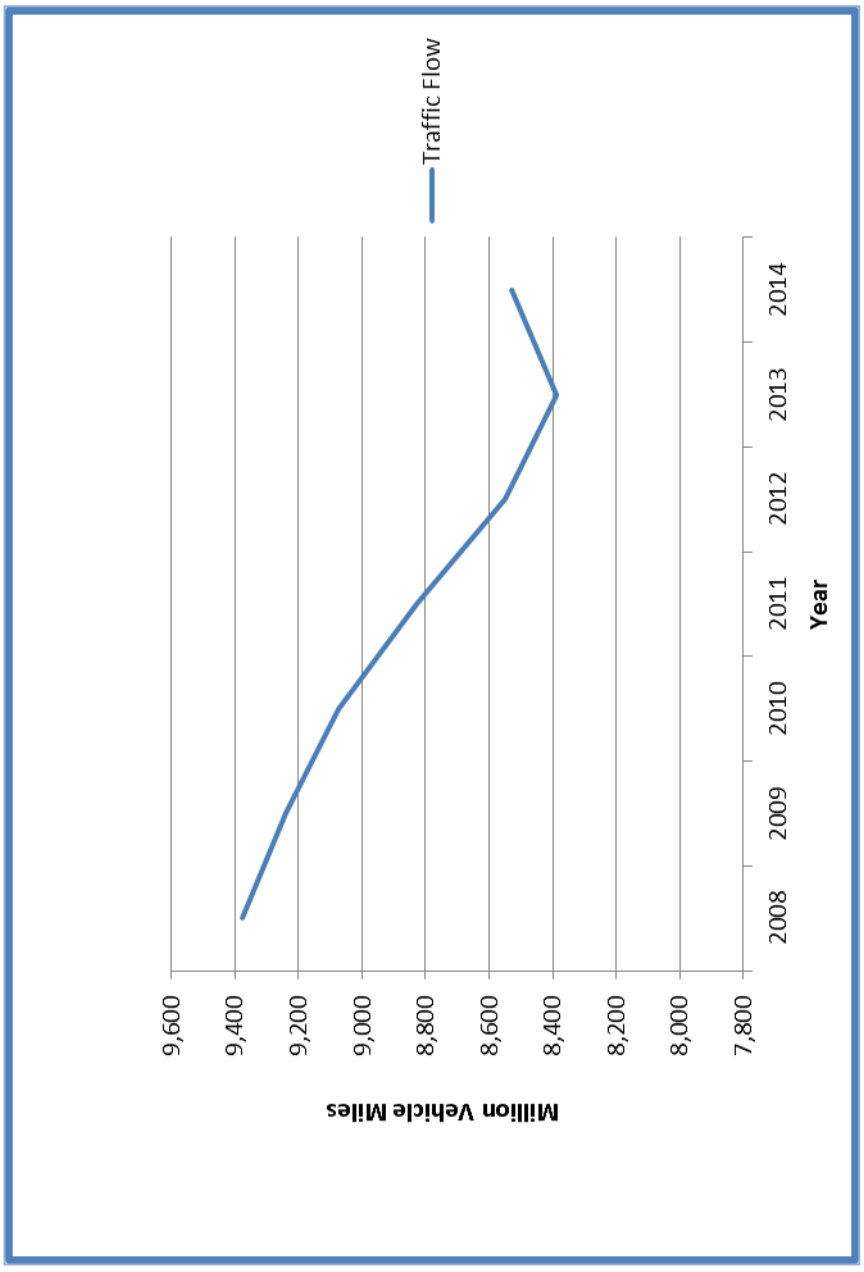
- Crossrail – a new high-speed east to west line opening in 2018
- Crossrail 2 – a north to south line planned to open in 2030
- The Bakerloo Line extension also due to open in 2030
- Cycle Superhighways and other cycling routes, such as Quietways and Mini-Hollands
- Proposed rail, cycle and pedestrian river crossings
- Using new technology 'traffic busting' measures to better regulate the road network, such as the Split Cycle Offset Optimisation Technique (SCOOT).

All of these projects are essential requirements needed to meet the increased pressures on the transport network due to the projected increase of London's population. However, large scale infrastructure projects take years to complete. If we want to reduce congestion on London's roads in the immediate future we need to address the issue directly and immediately.

What's the problem?

Since 2013 congestion has again been increasing, with traffic flows up by about 4% since April that year.

Figure 2: Traffic Flow of all vehicles in Inner London 2008 - 2014

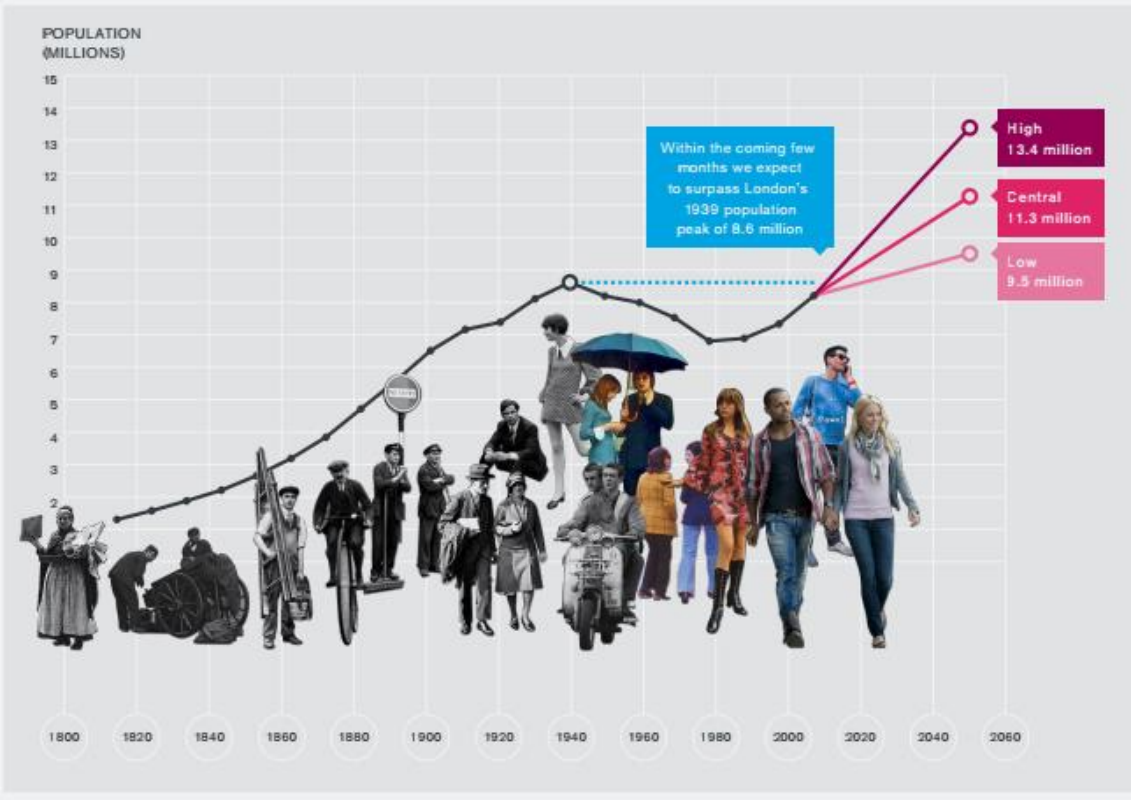


Source: DfT

Congestion is increasing in London because of a wide range of factors. It is difficult to quantify the precise impact of each factor and the interplay between them, but the following are certainly significant:

1) Foremost is population growth. London's population has increased by about 2 million in the last 25 years and is currently at an all-time high of 8.6 million. It is projected to reach 10 million by 2030 and 11.3 million by 2050.[56] This increase places huge demands on our transport infrastructure, including the road network. Even if the proportion of the population driving into central London is decreasing, an increase in the population can negate the effect of that positive trend.

Figure 3: London's population



Source: GLA Intelligence Unit[7]

2) Added to population growth are the challenges caused by economic growth. London's economy grew at a rate of 3.4% between 2008 and 2013, compared to 2.2% for the UK as a whole and has grown by 3.5% in 2015. In 2014 there were around 5.554 million jobs in London, a 5% increase over the previous year and 12% higher than the pre-recession peak in 2008.[8] This growth means more buildings being built, more goods and services being delivered and more people visiting shops and other retail outlets. Inevitably this activity means more vehicles on the roads. One aspect of this is the rise of internet shopping. While in some forms it can help reduce congestion, such as with food retailers like Ocado. On the other hand evidence shows that many deliveries are carried out in inefficient ways that add to congestion. What is certain is that there has been an increase in light goods vehicles on London's roads in recent years.[9]

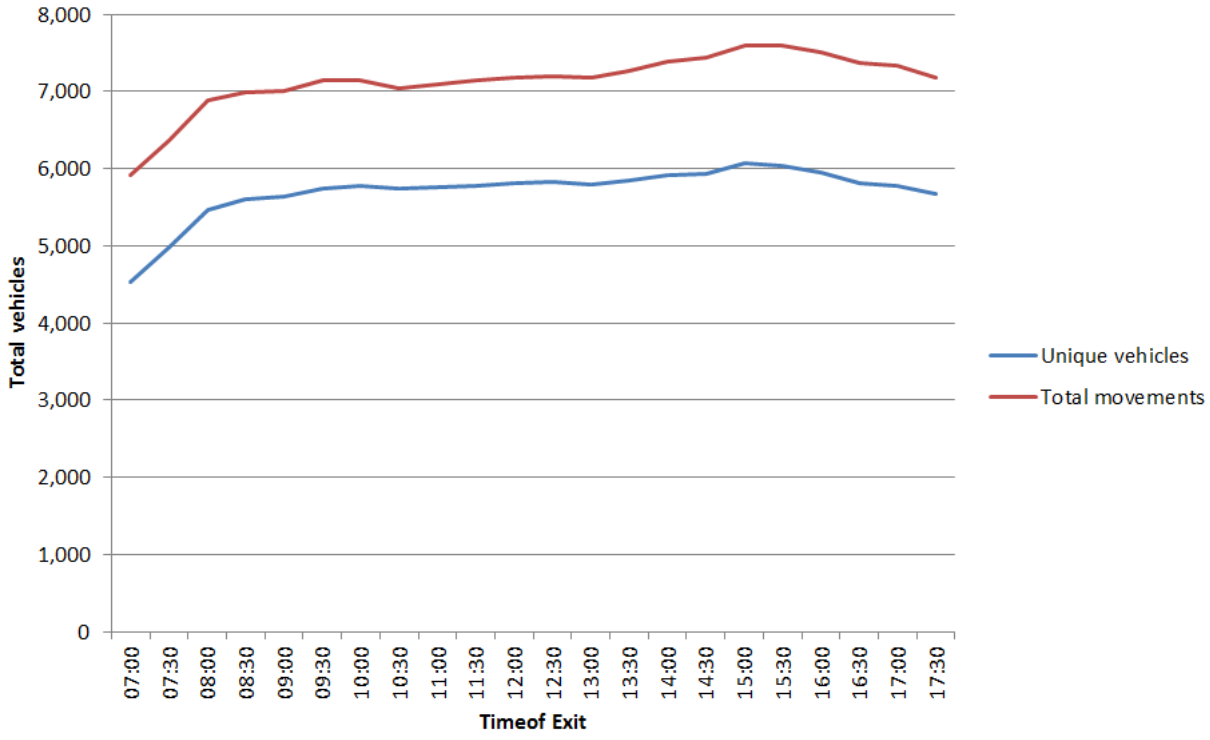
3) Permanent infrastructure changes also contribute to congestion. One of the benefits of the initial reduction in congestion deriving from the Congestion Charge and the revenue created is that parts of the road network have been given over to create more bus lanes, more cycle lanes and other public realm improvements. A side-effect of this has been a reduction in available road space.

4) Temporary infrastructure changes may be causing a spike in congestion. Building the Cycle Superhighways has meant roadworks on key roads in London. Building Crossrail has required road closures and created additional construction traffic. Transport for London has suggested that the rise in congestion is being caused by these temporary factors and that the situation will improve in 2016.[10]

5) The explosion of licensed private hire vehicles in London, driven by the rise of private hire apps, must also be contributing to congestion. The number of licensed private hire vehicles increased by over 25% between 2013 and 2015[11] and is currently growing at about 1,000 new vehicles every month. As of August 2015 Uber stated they had 15,000 registered drivers and were predicting an increase to 40,000 by March 2016.[12]

Furthermore, it's clear from Transport for London statistics that many users of the Congestion Charge Zone enter and exit the zone more than once per day. This is a consequence of the single daily charge creating an incentive to continue driving – once you have paid you might as well make the most of it.

Figure 4: Comparative graph showing difference between unique vehicles and total movements



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Source: London Assembly Liberal Democrat Group[13]

There is no reason to think that the Congestion Charge has become ineffective at reducing congestion in London. In fact, the amount charged was increased from £10 to £11.50 in 2014, making the financial disincentive for entering the zone greater. However it is clear that the 'congestion balance' has tipped in favour of factors causing an increase in congestion. In other words the Congestion Charge Zone in its current form is no longer enough to reduce congestion.

The recent rise in congestion has a knock on effect on economic productivity and health. We simply need to reduce the number of vehicles entering central London. The impact on air quality alone provides compelling reasons to act now and tackle the problem at source.

A recent study commissioned by the Greater London Authority found that about 10,000 people die prematurely each year in London due to the long-term effects of exposure to air pollution – making air pollution the second biggest public health risk facing Londoners after smoking.[14]

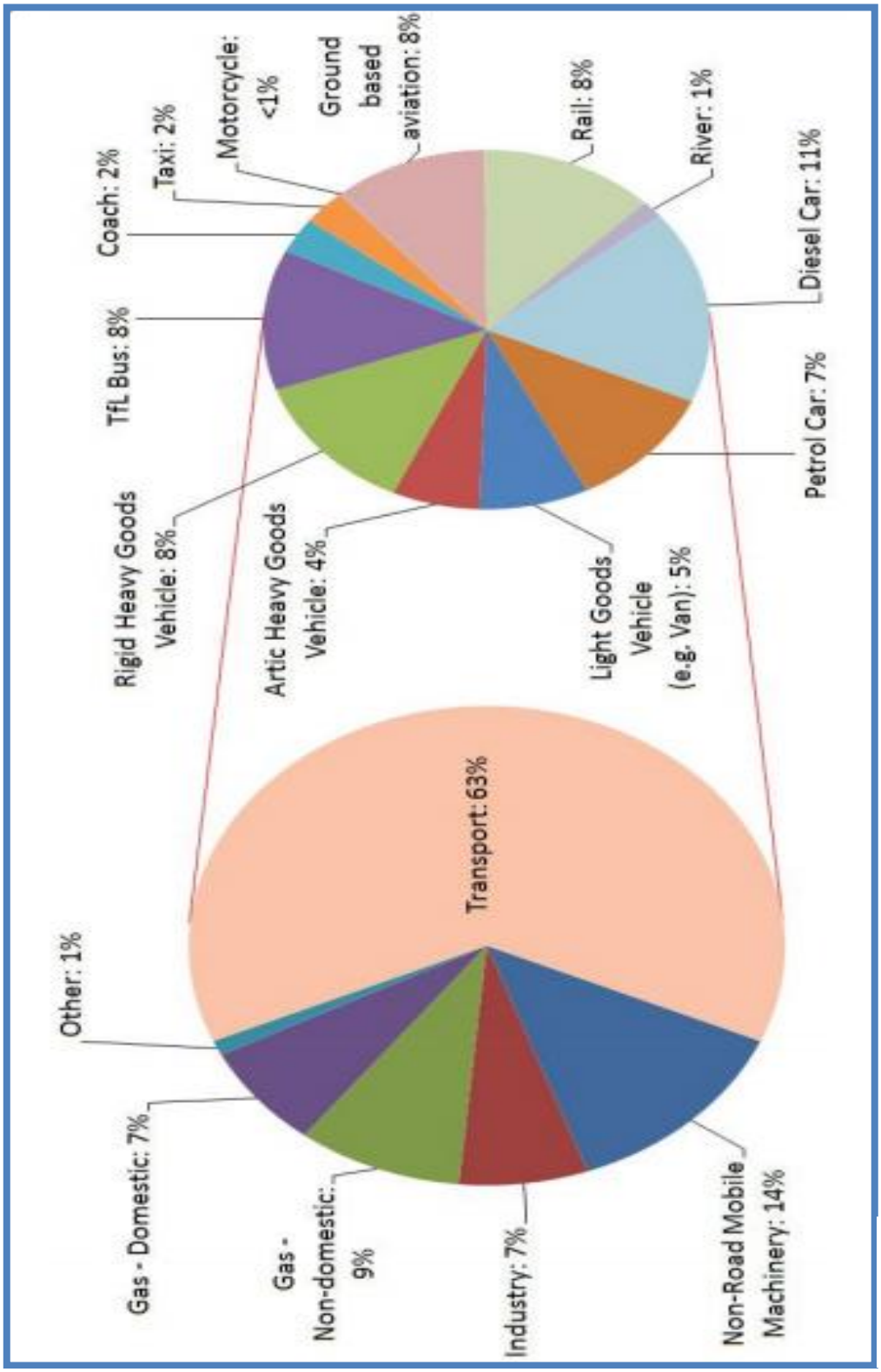
For decades London has been in breach of the legal limits for concentrations of pollutants in outdoor air set by the EU Ambient Air Quality Directive (2008/50/EC) – most notably for Particulate Matter (PM) and Nitrogen Dioxide (NO2).

Although the UK Government has reported compliance with the legal limits set for particulate matter (PM) in recent years, this ignores a number of 'non-reportable' monitoring sites across the city which continue to record dangerously high levels of PM.[15] Furthermore the advice from the World Health Organisation (WHO) is also clear that "it is unlikely any standard or guideline value will lead to complete protection for every individual against all possible adverse health effects of particulate matter".[16]

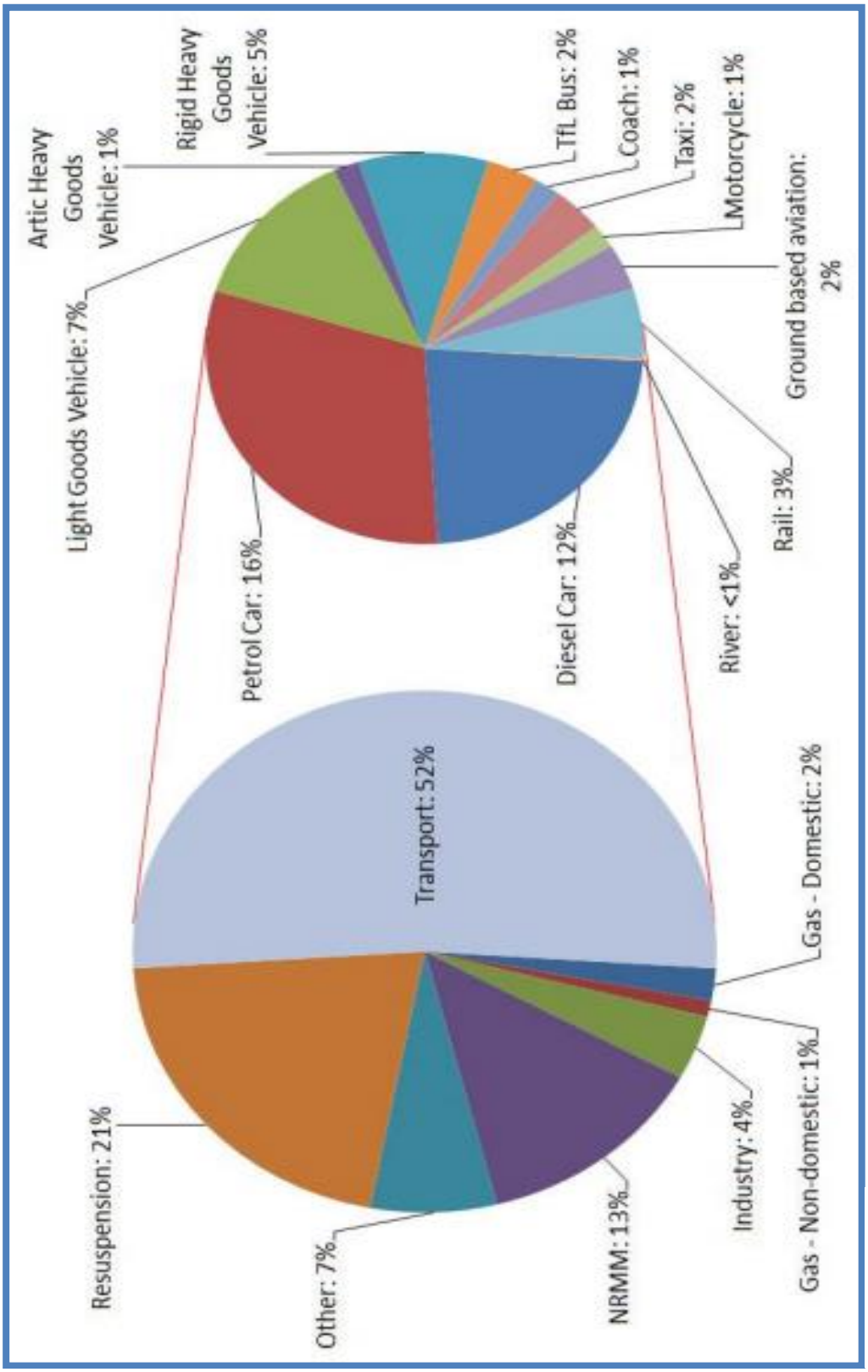
Meanwhile the European Commission has commenced the first stage of a legal process against the UK Government for failing to reduce excessive levels of nitrogen dioxide (NO2), with the UK's Supreme Court ruling separately that the Government must take immediate steps to cut air pollution.

As the single largest contributor to both NOx[17] and PM10 emissions in Greater London, transport emissions remain a key concern, accounting for 63 per cent and 52 per cent of the emissions of these pollutants respectively.

Figure 5: NOx emissions in Greater London 2010



Source: LAIE 201



Source: LAIE 2010

Figure 6: PM10 emissions in Greater London 2010

It is therefore vital that both the Mayor and TfL have an effective plan to reduce air pollution across the city and which meets legal limits within the shortest possible period.

In response to the ongoing legal action against the UK, and the prospect of substantial fines being passed down to the GLA under the terms of the Localism Act (2011), the Mayor has committed to establish an Ultra Low Emission Zone in central London from 2020.

The current Mayor's plans for an Ultra Low Emission Zone (ULEZ) will launch on 7 September 2020 and operate 24 hours a day, seven days a week within the same area as the current Congestion Charging Zone (CCZ). All cars, motorcycles, vans, minibuses, buses, coaches and heavy goods vehicles (HGVs) will need to meet exhaust emission standards (ULEZ standards) or pay an additional daily charge to travel as follows:

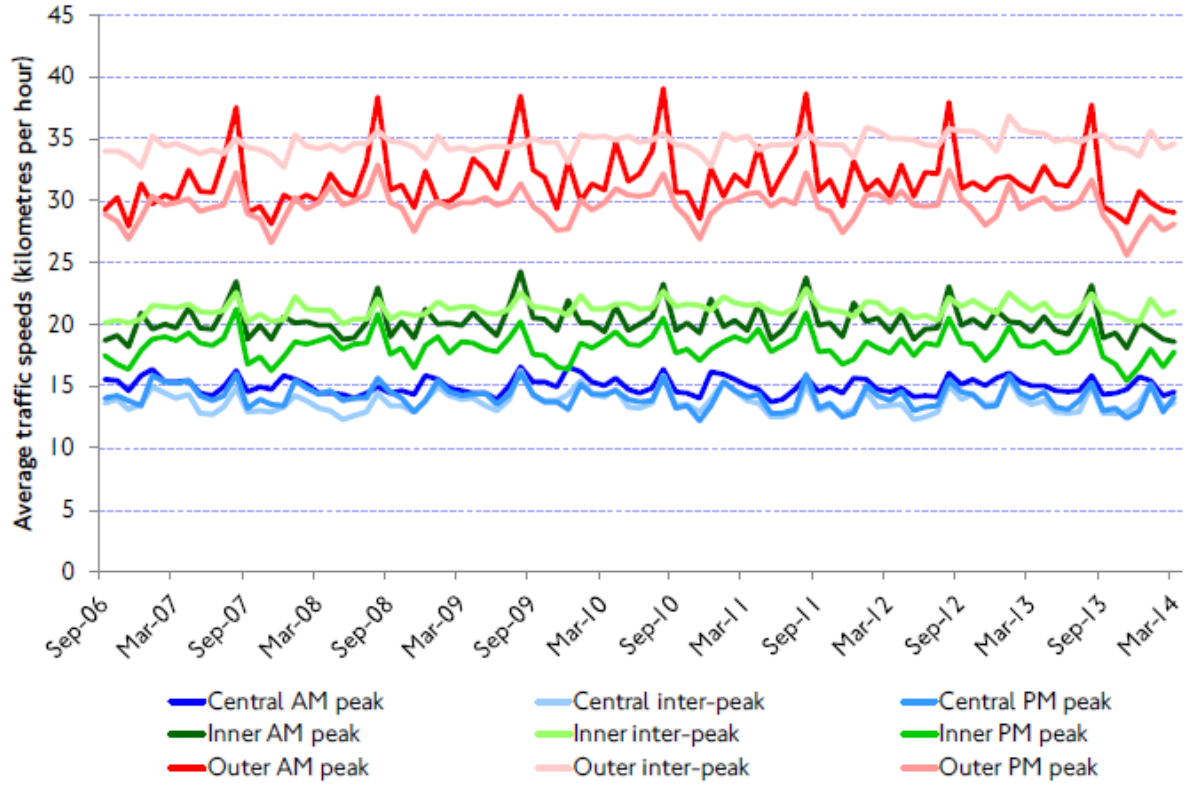
Figure 7: ULEZ Emissions Standards and Charges[18]

Vehicle name	Vehicle type approval[12]	Description	Proposed emissions standard[13]	Date when manufacturers must sell new vehicles meeting the emissions standards[14]	Charge level if not compliant
Motorcycle, moped etc	L	Any motorcycle or moped, (tricycle or quadricycle).	Euro 3	From 1 July 2007	£12.50
Car and small van[15]	M1 N1 (i)	A passenger vehicle with no more than 8 seats in addition to the driver`s seat. A goods vehicle with weight when empty less than 1205 kg.	Euro 4 (petrol) Euro 6 (diesel)	From 1 January 2006 From 1 September 2015	£12.50
Large van and minibus	N1 (ii,iii) M2	Goods vehicle with a gross weight of 3.5 tonnes or less. Passenger vehicle with more than 8 passenger seats & gross vehicle weight of 5 tonnes or less.	Euro 4 (petrol) Euro 6 (diesel)	From 1 January 2007 From 1 September 2016	£12.50
HGV	N2, N3	Lorries and specialist vehicles of more than 3.5 tonnes gross vehicle weight	Euro VI	From 1 January 2014	£100
Bus/coach[16]	M3	Passenger vehicles with more than 8 passenger seats of more than 5 tonnes gross vehicle weight	Euro VI	From 1 January 2014	£100

Although the ULEZ plans are welcome, we can't afford to wait until 2020. More immediate action must be taken to reduce the number of vehicles entering central London. We must remember that even if all the vehicles using London's roads become less polluting, this would only deal with one of the problems caused by congestion – we could be left with a cleaner, but still heavily congested city.

It is also important to be aware that congestion can be measured in a variety of ways. One of the most common ways is to measure the number of vehicles on the road and the journeys they make, as shown in Figure 2 and Figure 4 above. Another way of measuring congestion is to look at changes to the average speeds of vehicles.

Figure 8: Average traffic speeds on working weekdays[19]



Source: TfL Surface Transport, Outcomes Delivery.

After an initial immediate improvement in the congestion zone following its introduction, average vehicle speeds in London have remained stable, until recently when they've starting to deteriorate. The key to understanding this phenomenon is that while there may be fewer vehicles on London's roads, the road space available has decreased. It has been argued that the statistics around average vehicle speeds show the Congestion Charge has failed, but I think this is a flawed analysis.[20] I believe the Congestion Charge has played an important role in the increase in the use, capacity and reliability of public transport in London, as well as an increase in cycling, all of which means a reduction in congestion. In other words private car users in London may not be moving any faster than before, but they make up a smaller proportion of the number of journeys.[21]

It is also worth noting that the Congestion Charge only operates some of the time and only covers a small very busy area of the city. Congestion is also an increasing problem outside of the hours the zone operates and the area that it covers.

These problems make it clear that we need to do more to tackle congestion, both within the congestion zone and in other areas of London. An increasing population and growing economy means that congestion will only get worse if action is not taken and congestion is currently estimated to cost London over £5 billion a year.[22] Increased congestion will not only increase the risk of accidents but also undermine our economy and damage our health. The Congestion Charge in its current form is not going to stop this from happening.

A Way Forward

I've researched several options as to how to improve congestion and its impact on our city. I think there are a variety of options available. There would need to be two approaches; firstly, modifying the current Congestion Charge system and secondly putting new systems in place.

In modifying the Congestion Charge we have to acknowledge that it is a tool that currently isn't being utilised to its full potential. There are several options for utilising this tool better:

- Increase the Congestion Charge. A rise from the current level of £11.50 to a higher charge would act as a more significant deterrent to people thinking about driving into central London and we could be confident of seeing a drop in congestion. However a smarter and more effective approach would be to vary the price of the charge according to the time of entry, as is done in Stockholm.[23] The current technology set up would enable us to do this with little difficulty. There would be a minor issue with enforcing the flexible system for non CC Autopay account holders, but this could be countered by having a higher flat-rate for non-account holders, combined with a drive to increase the proportion of account holders (currently 72%), such as by removing the sign-up fee and introducing an app-based payment system.

- An extra charge of £2.50 on diesel vehicles entering the Congestion Charge Zone to help tackle air pollution and its devastating effect on our city. The current higher levels of congestion cause more air pollution. Diesel vehicles have become increasingly popular over the last fifteen years, but have recently been shown to produce pollutants that have very serious negative effects on our health (NO2, NOX). The recent Diesel-gate scandal has highlighted the extent of the problem. A modest charge at this level could help deter some drivers, improve air quality and provide funding for other measures to reduce air pollution.

- Charging vehicles to reflect their actual use of the roads once they've entered the Congestion Charge Zone. Since the introduction of the Congestion Charge there have been considerable advances in technology that could allow us to mimic aspects of the highly flexible system used in Singapore.[24] This could include higher charges for driving in the zone at peak times or for using congestion 'hot spots' within the current zone, potentially resulting in even lower levels of congestion, as well as being fairer.

  These congestion 'hot-spots' within the zone with higher charges could be set up using the current infrastructure with a localised increase in the numbers of cameras. Set up costs

would be modest – a major junction would need 6-12 new cameras at £40,000 each - but it would be important to consider carefully the impact of the hot spots on traffic flows.

Drivers diverting to other streets to avoid the extra hot spot charge could create new problems if the hot-spot was poorly designed. However, there are significant potential benefits of such a system. In Singapore charging drivers for the roads they are using caused traffic levels to drop a further 15%, in addition to the initial drop of 45% since the introduction of their congestion charge, with 65% of commuters now using public transport.

- Create congestion hot spots or mini-zones outside the main Congestion Charge Zone. Some of the most congested areas of London are currently outside the Congestion Charge Zone, such as at Heathrow Airport. Creating a localised congestion charge zone in these areas could help reduce congestion locally and potentially have a positive knock-on effect on central London. The experience of the main congestion charge zone is that this would be relatively easy to set up and that the infrastructure costs would quickly be paid for by the revenue raised. Careful consideration would need to be given to the location and design of these hot-spots. A pilot scheme at Heathrow Airport, set up in partnership with local Boroughs, would be a positive step.

Modifying the current Congestion Charge would definitely go some way to helping to solve London's congestion problem but to solve it more comprehensively new systems would also have to be put in place such as:

- Introducing a workplace parking levy. As well as giving the Mayor the power to set up a congestion charging zone, the Greater London Authority Act 1999 also grants the power to introduce a 'Workplace Parking Levy' (WPL), which is a charge on employers for parking places they provide so employees can drive to work. Introducing a WPL could discourage people from driving to work in central London and raise revenue at the same time. It could raise over £52million per year to spend on schemes to encourage cycling/walking and on targeted fare reductions.[25] The only WPL in the UK is in Nottingham[26], although Cambridge is considering introducing one. Similar schemes exist in Australia in Sydney, Melbourne and Perth.

  The current Mayor has been investigating the possibility of borough-based WPLs in London[27], but has suggested to the London Assembly that these would probably be in

areas of outer London.[28] I think the obvious option would be to make it the same as the current congestion zone, but it could also be extended to cover other areas, such as Canary Wharf.

One possible model would be a system similar to the Nottingham scheme, but with a significantly higher charge (£3000/space), a lower threshold at which employers would start to pay (more than one space), but with an additional exemption for schools and hospitals. This would also include an exemption for blue badge holders, as in Nottingham. Any revenue from such a scheme could, like the Congestion Charge, be used to fund transport infrastructure improvements, including the extension of the cycle hire scheme.

- Introduce a cap on the number of private hire vehicles. As noted the number of licensed private hire vehicles has increased significantly in the last few years and continues to rise at about 1,000 each month, contributing to the increase in congestion. In 2013 there were 50,000 licensed PHVs in London, but now the figure is over 73,000. Introducing a cap would require an Act of Parliament, but the Mayor of London has the power to introduce a Bill and should use it to solve this problem. The legislation could either set up a mechanism for setting a cap or give the Mayor the power to set it.

- Develop a new strategy for freight traffic on our roads that includes incentives for switching commercial deliveries to cargo bikes where appropriate, encourages the use of greener vehicles and facilitates the sharing of good practice across the industry. Freight traffic makes a considerable contribution to London's congestion problem. Although the number of HGVs on London's roads has been largely static in recent years, there has been a marked increase in the prevalence of light commercial vehicles on London's roads. DfT estimates of vehicle miles travelled by LGVs shows a 12% increase 2012-14 and TfL is predicting a 22% rise between 2011 and 2030. There is research to suggest that 25% of commercial deliveries could be carried out by cargo bikes.[29]

  This strategy should include a rush hour ban on HGVs inside the Congestion Charge Zone. The London Assembly recently passed a motion calling for a ban, dependant on the outcome of a TfL impact assessment.[30] We know that seven out of eight cycling fatalities in London last year involved collisions with lorries and that 40% of cycling fatalities involving lorries occur in the morning rush hour. Not only do HGVs tend to clog up the roads in central

London, they are also dangerous for cyclists. Some form of peak time HGV ban, including construction traffic, could help ease congestion and make London's roads safer.

Part of this strategy should be consolidated delivery centres as were used for the 2012 Olympic Games to reduce the number of freight vehicles on the roads and to shift them away from peak times.[31] The concept is that rather than everyone using their own vehicles to make deliveries to their final destinations in congested areas, a hub is created in a low congestion area where deliveries are brought to, before being redistributed or consolidated in a lower number of vehicles that then make the final part of the journey in a far more efficient way. This practice has been developed further since 2012, with consolidation centres in some London boroughs, so logistics know-how is being advanced.[32] The consolidation centre at the Port of Tilbury could be used to increase the use of the River Thames for transporting freight. We need to further develop and expand the use of consolidation centres so that it becomes far more comprehensive and includes a much larger proportion of light goods vehicle traffic. We could also encourage the use of river-based freight by introducing a planning requirement for large scale riverside developments in London to move spoil and materials by river.

- Developing a system of bonuses and penalties for roadworks. It's not just the amount of vehicles on the roads causing our congestion problem. All too often we see roads, pavements and cycle lanes closed for roadworks and no work being done. This causes avoidable congestion. A well-designed system of bonuses and penalties would help prevent this from happening.

  There is a current TfL scheme to encourage roadworks 'promoters' (contractors) to carry out works on busy roads quickly and/or outside of peak times. It is known as the TfL Lane Rental Scheme (TLRS).[33] This is one of three lane rental pilot schemes allowed by the Department for Transport in 2012. The TLRS only applies to 56% of the Transport for London Road Network (TLRN), which comprises of London's major roads. It does not apply to the rest of London's roads, which are managed by local Councils. Given that the TLRN only accounts for 5% of London's roads, this means that the scheme only covers 2.8% of London's roads. TfL's evidence shows that the TLRS has been successful in reducing the disruption to the TLRN.[34] There should be scope therefore to expand the scheme to the remaining 97.2% of the network not covered, allowing London's boroughs to set up localised lane rental schemes, based on the learning from the pilot schemes. However this could only be done with the permission of the Department for Transport.

Conclusion

This report has set out the immense challenges London faces from congestion, especially as London's population continues to soar. London can cope with an increased population of three million people by 2050, but it most certainly cannot cope with a further three million private cars on our roads every day.

My recommendations provide a comprehensive package of policies to get congestion under control in London and improve mobility for all Londoners.

At the heart of the changes would be a revamped Congestion Charge, making the most of current technology to provide a flexible charging system which is more accessible and easier to use. Variable charges, free registration on CC Autopay and an additional charge for polluting vehicles would be central to the new system.

Another exciting aspect of the proposed changes to the Congestion Charge is the idea of working with borough councils to set up a pilot local congestion charge zone at Heathrow Airport.

There are also important steps we should take that go beyond the Congestion Charge. Chief among these is setting up a Workplace Parking Levy (WPL) in central London to discourage people from driving to work, which could also raise significant revenue for much needed transport projects, including a significant extension of the cycle hire scheme.

But the WPL is not the only significant proposal. I recommend introducing a cap on the number of licensed private hire vehicles in London, a step that would require the Mayor to introduce a Bill to Parliament.

I also recommend developing a London-wide strategy for reducing the levels of freight traffic on the roads, including a rush hour ban on HGVs in central London.

Last but not least I would like to see a transformation in the way road works in London are organised to reduce the levels of disruption they cause. This could be done by a large expansion of the existing 'lane rental' scheme.

The levels of congestion facing London's roads is not inevitable, yet without bold policies there is no question it will become an even greater problem. For the sake of all Londoners as well as London's businesses it is vital that a new direction is taken to keep London moving.

Recommendations for the Mayor of London

Recommendation 1
Create a smarter, more flexible, fairer system of congestion charging that reflects what time you enter the zone.

Recommendation 2
Increase the Congestion Charge level to £20 for entering at rush hour and £14 at other charging times. The existing CC Autopay discount would remain in place. The charge for not paying within 24 hours would increase to £25.

Recommendation 3
Encourage a higher take up of the CC Autopay system by removing the charge for registering and developing a free, easy to use App.

Recommendation 4
Add an additional charge of £2.50 on diesel vehicles using the Congestion Charge Zone.

Recommendation 5
Work with Borough councils to create a pilot local congestion charge zone around Heathrow Airport.

Recommendation 6
Introduce a work place parking levy in central London and Canary Wharf, which would discourage car use and could raise £52 million per year.

Recommendation 7
Introduce legislation to Parliament to enable the setting of a cap on the number of licensed private hire vehicles.

Recommendation 8
Introduce a peak-time ban on HGVs in central London and develop a London-wide strategy for reducing freight traffic on London's roads, including greater use of consolidation centres and the use of the River Thames.

Recommendation 9
Call on the Government to allow the roll out of lane rental schemes across London's road network to reduce the disruption caused by road works and the congestion it causes.

END NOTES

[1] http://www.legislation.gov.uk/ukpga/1999/29/contents
[2] Impacts Monitoring – Fifth Annual Report, p21 shows a 30% reduction in chargeable vehicles entering the zone 2002-6
[3] ibid
[4] Travel in London Report 7, p25 shows a modal shift from private to public transport 2000-2013 (http://content.tfl.gov.uk/travel-in-london-report-7.pdf)
[5] http://www.bbc.co.uk/news/uk-england-london-31082941
[6] London Infrastructure Plan 2050: A Consultation, p7
[7] ibid, p8
[8] London's changing economy since 2008 (GLA Economics)
[9] GLA Transport Committee, 10/12/2015, item 7 appendix 1 (Light Commercial Traffic views and information). See: http://www.london.gov.uk/moderngov/ieListDocuments.aspx?CId=173&MId=5694
[10] Comments from Commissioner of Transport Mike Brown to GLA Transport Committee, 10/12/2015, item 6. See: http://www.london.gov.uk/moderngov/ieListDocuments.aspx?CId=173&MId=5694. Also: http://www.bbc.co.uk/news/uk-england-london-34811990 and http://www.standard.co.uk/news/london/drivers-braced-for-a-year-of-delays-as-work-starts-on-cycle-superhighway-10224735.html
[11] Department for Transport: Taxi and Private Hire Vehicle Statistics (England 2015): https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/456733/taxi-private-hire-vehicles-statistics-2015.pdf
[12] Uber CEO Travis Kalanik comments to Institute of Directors, 6/10/2015: http://www.ibtimes.co.uk/uber-ceo-travis-kalanick-we-will-have-42000-london-drivers-2016-1468436
[13] Based on average outbound Congestion Charge crossings for November 2014
[14] https://www.london.gov.uk/what-we-do/environment/environment-publications/understanding-health-impacts-air-pollution-london
[15] **London Air Quality Network Monitoring Statistics:** http://www.londonair.org.uk/london/asp/publicstats.asp?statyear=2014
[16] World Health Organisation Air Quality Guidelines (2005): http://www.who.int/phe/health_topics/outdoorair/outdoorair_aqg/en/
[17] NOx comprises of primary NO2 and Nitric Oxide (NO), which is harmless but easily converts to NO2 in the air. To reduce NO2 concentrations it is therefore essential to control NOx emissions
[18] Ultra Low Emission Zone, Report to the Mayor, March 2015: https://consultations.tfl.gov.uk/environment/ultra-low-emission-zone/user_uploads/ulez-consultation-report-to-the-mayor.pdf
[19] Travel in London Report 7, p144
[20] http://www.standard.co.uk/news/transport/congestion-charge-has-cost-drivers-26bn-in-decade-but-failed-to-cut-traffic-jams-8496627.html
[21] Travel in London Report 8 includes an analysis of the capacity and performance of public transport in London
[22] Financial Times, 13 October 2014 (http://www.ft.com/cms/s/0/a50158ee-52de-11e4-a236-00144feab7de.html#axzz3ulgolUZ9)
[23] Stockholm: The Stockholm congestion charge was introduced permanently in 2007 following a 7-month trial the previous year and a referendum. The whole of Stockholm city centre is covered and a charge is levied on both entry to and exit from the zone. The charge applies on most weekdays 0630-1830, apart from July. The amount charged varies from 10-20 SEK, with a daily cap of 60 SEK (about £4.50). Bills for the charge are sent to the vehicle owner at the end of each month, with the total amount charged. The owners can opt to make the payments electronically or by direct debit. There are a range of exemptions to the charge, including for motorbikes, buses weighing over 14 tonnes and cars with disabled parking permits.
The congestion charge is enforced via an Automatic Number Plate Recognition (ANPR) system, with detection equipment mounted on gantries on the edges of the zone. As Stockholm is essentially an island with limited entry points it has been possible to achieve this with only 18 gantries. The first five years operation saw public transport use up 4.5%, traffic down 18% and carbon emissions down 14-18%.
The Stockholm congestion charge was inspired by the London one, but a key difference to its primary intention was that it was to better regulate traffic flow as opposed to keep traffic out.
[24] Singapore: Singapore was the first city in the world to introduce a congestion charging system, back in 1975. Its Area Licensing System (ALS) covered the central business district was a success, but the entry toll booths were slow and needed large numbers of staff. In 1990 it was extended to include expressways leading into the central area. Then in 1998 the system was revamped with new technology and renamed the Electronic Road Pricing programme (ERP). The ERP works by having all cars permanently equipped with an On Board Unit (OBU) into which a charge card is inserted. The area of the congestion zone is ringed with gantries and when a vehicle passes through a gantry the amount charged to the card flashes on the OBU. The system can vary the price depending on traffic conditions and by vehicle type, time and location. In 2005 the area covered was expanded to include major arterial roads. The level of charging is reviewed quarterly to ensure optimal use of road space and optimal speeds.
The introduction of the ALS in 1975 led to a 45% reduction in traffic and a 20% reduction in vehicle accidents in the area covered. Average speeds increased from 11mph to 21mph. When the ERP came in traffic levels saw a further 15% drop. 65% of commuters now use public transport. Levels of CO2 and particulate emissions are reported as significantly reduced.
Implementing the ERP cost approximately US$125 million. It produces net annual revenue of over US$40 million, which is used for public transport and road building/maintenance.
[25] Based on estimate of 17,400 private non-residential parking spaces for employees in central London, if each attracted a charge of £3,000 the gross revenue would be £52,200,000/year.
[26] Nottingham's Work Parking Levy: The Transport Act 2000 allows Traffic Authorities in England & Wales outside London to set up a Workplace Parking Levy (WPL) in cities and towns to help tackle congestion. To date only Nottingham City Council has taken advantage of this power, introducing a scheme in April 2012.
All employers in the Nottingham City Council area are required to license every workplace parking space they provide. If 11 or more spaces are provided, the council will charge a levy for each space. For 2015-16 the levy was £375. The levy is set to increase in line with inflation.
The following are exempted from the need for parking places to be licensed:

- Occasional business visitors
- Customer vehicles
- Motorbikes
- Display vehicles
- Fleet Vehicles
- Vehicles used to deliver or collect goods
- Vehicles belonging to employees who live at their place of work

There is a further range of exemptions for parking places that do need to be licensed, but for which no levy is charged:

- Both employers and any associated employers, who between them provide 10 or fewer workplace parking places in total at all of their premises within the Nottingham City Council administrative boundary
- Front line Emergency Services
- Qualifying NHS premises

Further, any workplace parking places occupied by registered disabled Blue Badge Holders need to be licensed but will get a 100% discount from any charge. If this takes the number of spaces provided by an employer below 11 non-registered places then no charge will be levied for any of the parking places.

The Council is using funds raised by the levy to help pay for public transport, including the expansion of the city's tram network, the refurbishment of Nottingham railway station and improvements to bus services. Critics of the scheme have said it deters business investment in the city, but its fans claim that the reduced congestion and improved public transport attracts new investment and jobs. The Council expects it to raise £14 million in revenue each year, although it has yet to reach that level (£8.45mn in 2013/14). The levy is charged on approximately 25,000 parking places.

[27] http://www.standard.co.uk/news/london/boris-johnson-plans-levy-for-drivers-who-park-at-work-in-motorist-clampdown-9724088.html
[28] Mayor's Question Time, 15 July 2015, question 2015/2068
[29] GLA Transport Committee, 10/12/2015, ibid
[30] https://www.london.gov.uk/moderngov/documents/s51384/Motions.pdf
[31] http://content.tfl.gov.uk/regent-street-case-study.pdf
[32] http://www.lamiloproject.eu/london-camden/
[33] http://content.tfl.gov.uk/tfl-lane-rental-scheme-document-tlrs.pdf
[34] http://content.tfl.gov.uk/lane-rental-monitoring-report-july-2014-mar-2015.pdf