Response to the London Assembly Transport Committee's investigation into Future Transport

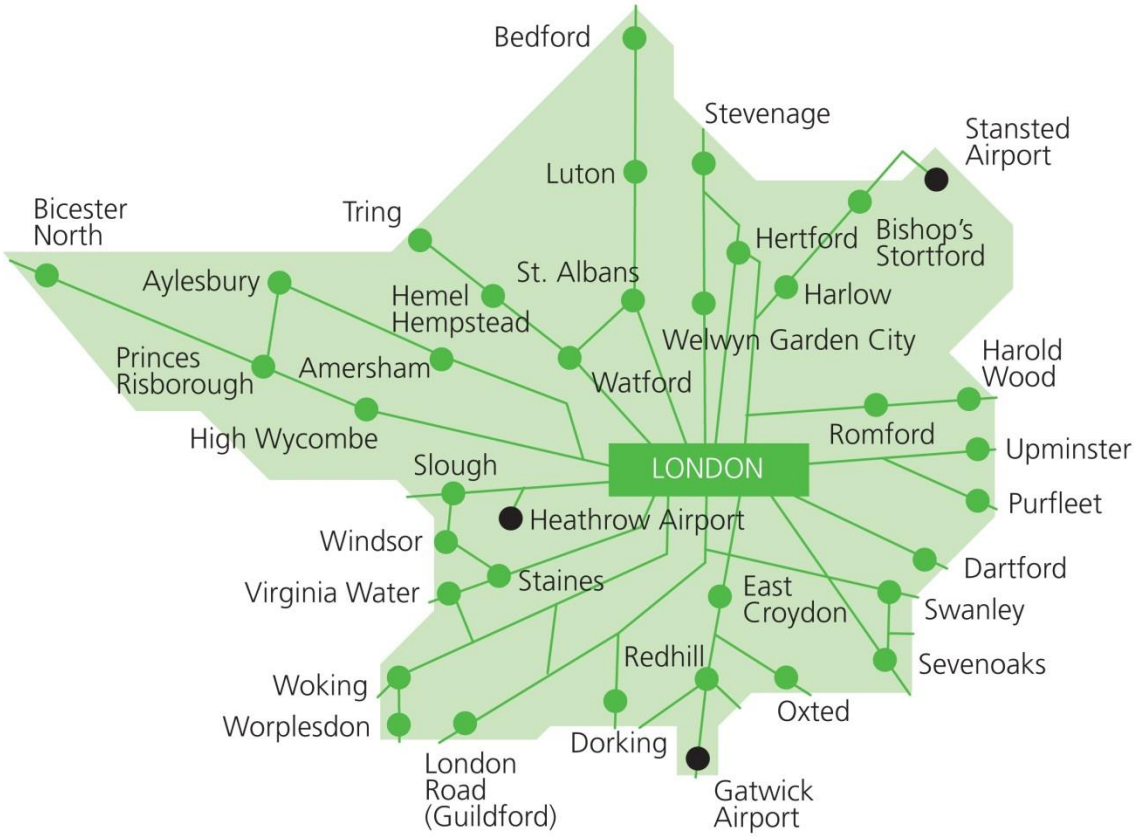
London **TravelWatch** is the official body set up by Parliament to provide a voice for London's travelling public.

Our role is to:

- Speak up for transport users in discussions with policy-makers and the media;
- Liaise with the transport industry, regulators and funders on matters affecting users and respond to their consultations;
- Investigate complaints users have been unable to resolve with service providers, and;
- Monitor trends in service quality.

Our aim is to press in all that we do for a better travel experience for all those living, working or visiting London and the surrounding area.

London TravelWatch's response has been informed by our casework appeals, as well as our current and past research. The area that London TravelWatch is responsible for is shown below:



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London TravelWatch submission on 'Future Transport'

For London TravelWatch the key questions to be answered on future transport revolve around the benefit to passengers of technological change. These should include:-

- Does it improve journey time?
- What will the costs be to consumers? Will these increase or decrease over current fare levels?
- Will it serve the places people need it to?
- What will be the level and expectation of customer service?
- Who will own the rights over data, systems and safety?

London TravelWatch represents the views of passengers. We have used this consultation to highlight where we believe passengers and consumers must be consulted. We strongly believe that their interests must remain at the heart of any future plans for transport.

Technological change can work for the benefit of passengers and users of the transport network. Recent examples of this are journey planner apps, which have helped de-mystify London's transport system, and contactless payments which have simplified fare-paying. However, technological change must be placed in the context of regulation that ensures that any potential downsides are effectively managed and mitigated. In this case the transition period of changing over from one technology to another needs to be managed effectively.

An example of positive change could be autonomous vehicles which in theory would substantially reduce the number of accidents by managing all of the vehicles in use at any one time. In the railway industry this has been achieved but only on isolated systems such as individual tube lines where no other vehicles are in use other than the ones operated as automatic trains. However, even in these cases the ability to manually control vehicles is an important safety feature. The Thameslink rail upgrade features automatic operation over its core section, but it requires a uniform fleet and the ability to easily transition from manual to automatic mode and back.

In the case of road vehicles it would be virtually impossible to switch immediately from a world where all vehicles are manually controlled to one where all vehicles are autonomous. This would require a transition period and a process that ensured that 'machine learning' was in-built to any and all autonomous vehicles to reduce and avoid potential accidents. To get to this state requires a 'controlling mind' to regulate road based vehicles to determine the systems that are in use, and that they are all connected to one another. Effectively this is replicating the human senses of sight, hearing, memory and spatial awareness. There is therefore an ethical question as to who this 'controlling mind' should be, either a public body or private corporations.

Patterns of work are also likely to change over the next couple of decades. Better access to technology will mean that even more business will be conducted over the internet. Therefore flexible working may be necessary for an increasing number of people. TfL and TOCs need to plan for these changing patterns of travel, by providing services that passengers want and need, such as flexible season tickets. If not, they will find themselves on the back foot responding to newer apps and services which are filling gaps in the market.

At the heart of this consultation is the question of regulation. This is key for ensuring that new technologies are put to good use. Whilst new technology may 'disrupt' current transport modes, regulation will ensure that this is done in a way that supports people living and working in London. London TravelWatch would like to ensure that passengers and people using transport in London are always at the centre of any future regulatory framework.

Transport Committee Key Questions

1. *How are current developments in transport technology supporting or challenging the Mayor and TfL's overall objectives for the transport system, particularly in terms of health, accessibility and affordability?*

   Technology could certainly help to achieve the objectives of the Mayor and TfL, if harnessed in the correct way. New technologies, such as electric cars or journey planner apps, are likely to focus on sustainability and making life easier for passengers. There are plenty of services that are doing this already; from car clubs to journey planners, ride share systems to easier ticketing platforms.

   However, new technology also has the ability to disrupt the Mayor and TfL's objectives. For example, autonomous vehicles could reduce the need for people to walk, cycle or use public transport, or make the use of these modes more inconvenient or unreliable by increasing congestion. Accessibility could decrease in the physical realm but also create a new type inaccessible transport – where only those people who are digitally enabled and capable are able to use it. This would reduce transport access for the elderly, people with disabilities and other vulnerable people.

   Reduced use of public transport also brings pressure to raise fares for other passengers. This in turn makes public transport less affordable and therefore likely to lead to a further reduction in usage. An example of this is the bus industry outside of London where reductions in patronage are often followed by increases in fares above inflation.

2. *How effectively does TfL plan for the possible large scale adoption of new technology?*

   London TravelWatch will continue to ensure that TfL has the passenger at the heart of any new plans for the large scale adoption of new technology. We note that TfL already has specific roles focusing on the introduction of new technology. However, the speed and scale of new technology, some of which will be introduced by private companies and start-ups (eg: Uber), may well disrupt current modes and make it difficult to plan for. Flexibility may be necessary in the planning process to respond to new technological developments, especially those outside TfL's control.

   Currently, regulation has some way to catch up with technological change. To some extent, the recent issues with Uber have highlighted that the regulator has not been able to act quickly on congestion. Therefore, regulatory powers may well need to be extended, and this may need to happen more quickly than it has done in the past.

   London TravelWatch, as London's statutory passenger body, would be keen for further engagement from the regulator about how to put passengers' interests at the heart of the regulatory process.

3. *Does TfL have the powers it needs to deliver fair and accessible transport services in a more technologically advanced future?*

   London TravelWatch notes that TfL's regulatory powers may need extending or changing as technology changes. Some of the regulation may come also from the DfT, or even, in the case of drones, the Civil Aviation Authority. TfL's regulatory powers need to ensure that passengers are at the heart of decisions that are being made.

TfL also needs to ensure that firms which operate in London but perhaps also have operators based elsewhere still fall under their regulatory framework. In the current system, a Private Hire Vehicle (PHV) registered in Brighton could work in London but is regulated in Brighton. There is no easy solution to this, especially in areas such as Watford, where passenger journeys often cross regulatory boundaries.

4. *How effectively does TfL influence regulations that affect transport in London?*

TfL is effective about influencing regulations that affect its own operations within London.

However, many developments such as autonomous vehicles, electric charging points, drones and pavement vehicles will require regulation at a national level. Without common standards and regulations there is a danger of creating incompatible systems and vehicles that will present safety hazards and economic detriment to passengers. A past example of this was the development of household electrical, gas and water supplies in the late 19th and early 20th centuries, characterised by competing companies with different systems that were often incompatible with one another. Only when a unified and standardised system of supply and operation was implemented did users experience the full advantages of being supplied with such utilities. The National Rail network still suffers inefficiencies as a result of the different practices of railway company policies of the 19th and 20th centuries. It is not in anyone's interests to repeat these in new technologies.

Most new forms of technology will have a 'smart' element, using data collected from passengers to enhance journeys by greater personalisation. Whilst this could improve experiences for many passengers, there are some fundamental questions about data storage and ownership. There must be clarity around who regulates, what data is stored, collected and even passed on to other parties. There should be clear information for passengers who want to limit the data collected about them. In the recent TfL WiFi trial (although the data was anonymised) if a passenger did not want their data collected, they had to turn off their WiFi. Additionally, by using Oyster or Contactless, passengers are tacitly agreeing to pass on anonymised location data. It is important that as services become increasingly data driven, there are options to 'opt-out' and still have the same level of service provided. Furthermore, all data that is collected must be stored securely.

5. *What is the likely extent of the introduction of autonomous vehicles in London in the next ten years?*

London TravelWatch notes that the DfT is predicting that autonomous vehicles will make up 95% of passenger journeys by 2030. Toyota and Ford have predicted that an autonomous car will be fully ready for ride sharing in 2020. Tesla's new cars come with 'Self Drive' technology already installed. However, completely autonomous driving remains illegal in the UK due to lack of clarity over insurance.

In recent years, road vehicles have been adding elements of autonomous vehicle operation such as automatic parking, obstacle detection, satellite navigation (sat-nav) and cruise control in an incremental fashion. This is largely determined by individual manufacturers and insurance companies developing their own systems. There should be a focus on ensuring there is joined up thinking about how in the future these different systems will interact. Hopefully this will ensure compatibility.

New innovations have already had a major impact on the usage of the road system, for example sat-navs have reduced the amount of unnecessary mileage by drivers getting lost or not taking the shortest route for their journey. However, as such systems treat all roads equally this will have increased the use of inappropriate roads. These types of innovation and the wider spread of such technology will continue to

have an impact on London's road system over the next ten years. Some of these impacts will be positive for road users, some will be more mixed.

Further development and usage of the 'Digital Speed Map,' should be explored. The map is integrated with sat-nav programmes to inform users of the maximum speed in a particular area. London TravelWatch understands that there have been trials of Intelligent Speed Adaption (ISA) on some London bus networks. Cars are being built with ISA capability and perhaps in the near future, vehicles could have their speeds automatically limited on London's roads.

6. *What would the impact of autonomous vehicles on congestion be?*

The experience of the introduction of apps such as Uber, has prompted growth in the use of Private Hire Vehicles (PVHs) operating in central London, which in turn has contributed to increased congestion as vehicles and drivers 'honeypot' around the most lucrative areas. This has caused problems elsewhere such as at Heathrow Airport with Uber, to the extent Heathrow Airport has had to provide a separate parking area for such vehicles to avoid detriment to neighbours. This however, has only been possible by the co-operation of Uber to develop / impose 'geo-fencing' into its technology that requires any vehicle / driver seeking a hire to be in the parking area before they show up on the app to customers.

Autonomous vehicles have been billed as 'disruptive' technology and are predicted to change how our transport systems function. It is unclear exactly what this 'disruption' will look like - and whether autonomous vehicles will indeed reduce congestion. The risk will be that whilst proving cheap and attractive to passengers, self-driving cars will also dramatically increase congestion. This would damage the target in the MTS for 80% of journeys to occur on public transport. It would also make the aim of 'Healthy Streets', with a modal shift towards walking and cycling more difficult. It is in both the operator's and the regulator's long-term interest to avoid this happening. Therefore the two parties must work together, with the passenger interest built into the regulatory structure. Additionally, regulation for freight and deliveries must be built into plans for the future. If these are not co-ordinated with other forms of autonomous transport, congestion will grow as door-to-door delivery services become ever easier and cheaper.

There is likely to be a period of transition, where some cars are autonomous and some are not. Whilst it is hard to predict what exactly this will look like, the focus should be on ensuring that passengers are not adversely affected by increased congestion on roads and that the new vehicles are accessible to all. Additionally, there should be a focus on ensuring that public transport also remains a viable method of travel. A train can carry far more people than individual autonomous vehicles, even if they are shared. Our overriding concern is that the most space efficient vehicle, the bus, will be delayed by private vehicles, affecting passenger numbers and revenue. Public transport services must be of a high standard to ensure that passengers do not view them as an optional extra.

Questions about the future of London's transport system are unlikely to be solved by autonomous vehicles alone – trains, buses, walking and cycling will still remain important modes of getting around. The service levels offered should reflect this, and people should be encouraged and incentivised to make use of these alternatives to automated vehicles for London to function. Road pricing, ensuring PHVs are included, could be a way forward.

7. *What are the likely implications of autonomous vehicles in London in terms of car ownership, vehicle occupancy levels and usage?*

It is somewhat unclear whether private autonomous cars alone are the future, or whether autonomous vehicles will be a form of shared transport. Many of the

predictions about the reduction in congestion due to autonomous vehicles has come from the idea that the vehicles will not be parked, but instead will constantly be in service. This is similar to current car club models. The new vehicles would be shared, not owned personally. Fewer vehicles will be needed, as the ones in service will be used more efficiently. However, there are risks that an eventual oversupply of autonomous vehicles will increase congestion and parking, negating some of the benefits that the technology could bring.

At the moment, the price of these vehicles suggests that ownership may be out of the reach for many consumers. They will be mainly used for ride-sharing. This potentially will change ideas of ownership- blurring the line between public and private transport. This returns to the question of regulation. London TravelWatch would be keen to see that passenger interests are represented by the regulator. If autonomous vehicles are run and owned by TfL, this would ensure that there is uniformity of service as well as operator transparency and accountability.

Ultimately, the impact on ownership, vehicle occupancy levels and usage is impossible to know, but there are many mechanisms (road pricing, parking controls and closing streets, to name a few) which could manage the future impact of autonomous vehicles.

8. *Will TfL consider introducing autonomous buses?*

   It will be the bus operators which will introduce such vehicles, not TfL. In the first instance the automation may only be used for parking vehicles in garages. However, because buses follow a prescribed route, it may well be the case that bus companies are early adopters of autonomous vehicles.

9. *What regulation will be needed to ensure autonomous vehicles are used safely? Do drones and droids have significant potential to reduce the level of delivery traffic on the roads?*

   London TravelWatch notes that significant regulation will be needed to ensure that autonomous vehicles are used safely and appropriately. It is unclear the effect of drones and droids on delivery traffic. Collection and pick up points may well change, and this may change how and when deliveries are made. However, at the moment, a white van is a much more efficient way to deliver many parcels, and the delivery range of droids and drones is not compatible with the warehouses where goods are stored at the moment.

10. *What are the specific safety hazards arising form the widespread use of pavement-based droids?*

    London TravelWatch would note that any pavement-based droid activity could affect visually impaired pedestrians, or those who have limited mobility. Even if the drone is programmed to keep out of the way of pedestrians, it could still be confusing and disorientating for pedestrians who need a clear pavement. It could also fundamentally change the nature of pavement space, making walking less pleasant. A similar concern has already been raised about electric car charging points. At the moment there is one charging point for every 2900 vehicles. With electric car numbers growing, there will soon have to be a considerable increase in charging points to service them all. This additional pavement furniture could adversely affect the journeys of people with sight problems and mobility issues.

11. *How will access to airspace for drones be managed, if at all, and by whom?*

    No comment.

12. *What regulation is needed to ensure drones and droids are used safely?*

    No comment.

13. *What are the next steps in developing app-based transport technologies?*

    London TravelWatch believes that TfL has so far done a good job in encouraging new apps being developed. Its open source data has been successful in encouraging innovation.

    London TravelWatch is keen to make sure that any development in app-based technologies ensures that passenger data remains anonymised and that appropriate steps are taken with privacy, and the storage and selling of data. London TravelWatch is keen that the services that new apps offer remain in line with the objectives within the MTS. If not, this could create behaviour which 'disrupts' the transport system in London relatively quickly, making journeys worse for passengers. Uber and increased congestion is a good example of this. On a more positive note, many apps are developed with a mind to improving journey experiences and they can be useful in challenging Train Operating Companies to improve standards and increasing passenger expectations.

14. *Would moving to a MaaS system in London make public transport more accessible for disabled passengers?*

    To some extent, the current Oyster card system replicates a MaaS system. At the moment, the capping system or a travel card allows travel over a variety of modes of transport. Similarly, a MaaS system allows a single transaction to be made and lessens the complication of multiple tickets over multiple operators. It also can include 'right-time guarantees' or insurance. Therefore, a MaaS system does make travelling on multiple forms of public transport easier. However, as London's current Oyster system proves, a MaaS system alone does not necessarily improve the experience for disabled passengers. A specific focus on accessibility must be built into the system for this to happen.

    Apps such as *Wayfindr*, which is being developed with input from the RNIB, are focused specifically on ensuring that transport is integrated and accessible. When this happens, there is real potential for a MaaS system to improve accessibility, but not without appropriate staff training and improvement in infrastructure. A MaaS system is no use if a disabled passenger has to go twice the distance to find an accessible station or interchange, than a non-disabled passenger.

    Additionally, whilst many disabled passengers use apps to help with their day to day life, it should not be assumed that all passengers, disabled or not, have a high degree of IT literacy. Furthermore, not all vulnerable passengers have the same needs, and many passengers may require reassurance as opposed to accessibility information. If transport is increasingly accessed by a smartphone-based MaaS system this could exclude people. There is a risk that a significant group of people will not be able to afford the system, or will not be able to understand how the app works, even if the interface is simple. These people then may not be able to travel.

15. *What are the implications of MaaS technology on transport fares and transport inequality in London?*

    As stated above, a MaaS system can have many benefits. Improving ease of use of integrated transport, and simpler ticketing, are two of the key benefits. The system could have the great benefit of ensuring that the best fare is always offered.

A MaaS system will also have the ability to personalise journeys to a much greater extent. The use of smart technology will allow data on when people prefer to travel and to which destinations, to be collected and used to improve an individual's journey. This technology is already available and will only become more sophisticated.

London TravelWatch would like to note two points:

a) An increasingly sophisticated revenue management operation could increase inequalities around when passengers can travel. If prices surge when there is high demand or at peak times, there may well be a large number of people who cannot afford to travel at all during these times. Therefore, it is essential to regulate how these systems are set up, what checks and balances are needed, and when concessionary travel may be available. In the case of similar 'demand-led' Road Pricing schemes, employers could subsidise their employees who have to travel at busy times. However, not everyone works- and the poorest could find themselves unable to travel at all during particular times of the day.

b) Simpler ticketing methods do not always lead to cheaper prices. If the MaaS provider takes a proportion of the price for booking the tickets, there may well be a lack of transparency around the process. This means that passengers may actually be paying a large surplus for a 'simpler' ticket. Whilst this hassle-free approach is the point of a MaaS, it may become increasingly difficult to buy tickets without using the MaaS, thereby forcing all passengers into paying potentially quite a large surplus.

16. *How should TfL and the Mayor manage dock-less cycle hire schemes?*

TfL and the Mayor should ensure that dock-less cycle schemes are compatible across boroughs. At the moment, local authorities are signing MOUs with a particular provider, which means that there are different operators in neighbouring boroughs. However, most journeys do not stop at the borough boundary. This may be solved organically as it becomes clearer over time who the key companies are. Additionally TfL should ensure that the responsibilities of the operators and also of the regulators are clearly spelt out, with the regulator being given powers to respond if the operator is not acting in a positive way. Ultimately dock-less cycle hire will be judged by how well users park their cycles- if they become a nuisance then the scheme will be unsuccessful. This is the situation that both operators and regulators should be keen to avoid.