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# **RAC Foundation consultation response to the draft Mayor's Transport Strategy**

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January 2010



**The RAC Foundation explores the economic, mobility, safety and environmental issues relating to roads and the use of motor vehicles, and campaigns to secure a fair deal for responsible road users. Independent and authoritative research for the public benefit and informed debate are central to the RAC Foundation's standing.**

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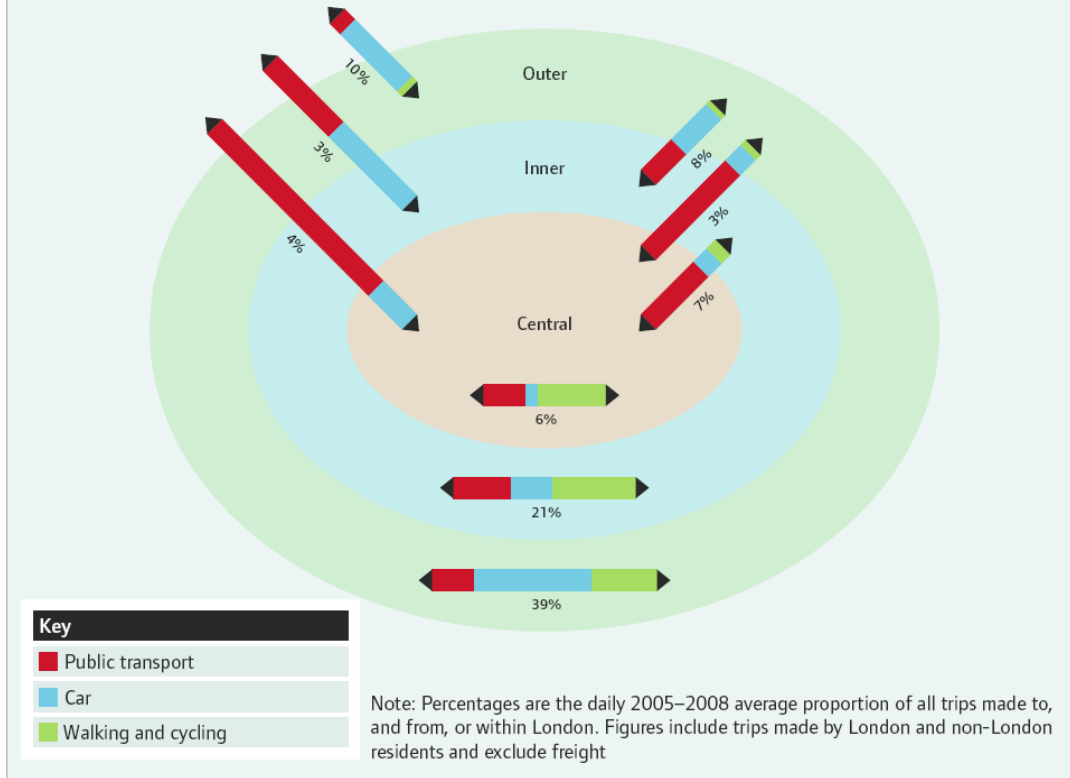
## **Summary**

1. The Draft Mayor's Transport Strategy presents a powerful vision and is inevitably aspirational in nature. But it is unrealistic in regard to the ability to maintain an efficient road network operation in the context of growth; competing demands for scarce road space such as street works; the prospect of a further reallocation of that space to buses and cyclists; and inevitable future constraints on funding.
2. The Strategy appears to deal with much of the rail congestion problem yet seems resigned to increasing road congestion. This does not make up a balanced approach, nor does it address the needs of most of the population and most of the businesses in London. Whilst the Strategy analyses rail and Underground congestion on a section by section basis, it looks at the congestion of roads in only very general terms—and roads carry by far the greatest share of travel demand (57%). At the very least, a catalogue of road congestion hot spots with realistic solutions is required. Redesigning junctions, for example, does not necessarily need substantial land take or demolition and can offer high value for money.
3. Initiatives such as cycling and walking are welcome, but they will not solve the problems, and risk diverting attention from issues of more importance to most Londoners and to the London economy as a whole.
4. The Draft MTS lacks any clear indication of priorities. It has 35 policies and 129 proposals – many of which are little more than statements of intent: which are the most important? In a similar vein the strategy only deals with funding in very general terms. If funding is insufficient (as it inevitably will be) where will it be focussed?

### *The importance of the road network*

5. As Figure 11 of the Draft MTS (below) illustrates, journeys wholly outside Central London account for 86% of all trips, and for these the car is the dominant mode. This simply reflects that public transport cannot offer a comparable or acceptable alternative to the car for most non-central journeys. This is no criticism of the rail and bus networks—simply a recognition that the rail system provides limited choice, and the diverse spread of origins and destinations coupled with the lack of sufficient priorities means buses cannot provide practical alternatives for most journeys.
6. Virtually all freight destined for and moving within London is carried by road, and all servicing of premises—whether businesses and organisations or domestic properties—is by road.

**Figure 11:** Spatial pattern of travel across London, with mode shares



Source: Mayor of London (2009) *Mayors Transport Strategy: Public Draft*, Figure 11, p.57

7. Much of London’s economic output is provided by organisations and businesses outside central London. They depend on effective transport networks to recruit and retain staff, to carry on their business, to reach their markets and to receive and distribute goods. For most of them, most of the time, this is about travel by car and movement of goods by lorry and van. Dealing with issues of congestion and the performance of the road network is fundamental to sustaining their prosperity and competitiveness, and maintaining quality of life for those who live in suburban London—which is the vast majority of London’s population. Failure to address this will affect bus performance too.

*Addressing road network issues*

8. The document has a coherent analysis of the expected growth in population and employment but problems occur because no geographically detailed analysis is presented of the current demand for travel and transport, and the state or performance of the road network today, nor any detailed forecast of how the network will perform and what will happen to congestion.
9. The “smoothing traffic flow” agenda and modal shift are suggested as the means by which, in the future, the capital’s road network will offer efficient and reliable motorised journeys, notwithstanding significant anticipated growth in population and employment.

These may be worthwhile ambitions but no evidence is offered to demonstrate that they will make more than a minor contribution to solving the problem of deteriorating road network performance as population and jobs grow.

10. TfL and its predecessor organisations have for years been focussed on maximising the efficiency of traffic operations in London: while there is undoubtedly more to be achieved with improved technology and sophistication of approach to signalling, the contribution this can make to the long term problems is small.
11. The Foundation supports the measures to ‘smooth traffic flow’ and to promote modal shift, but argues that neither the Mayor nor London as a whole should be under illusions that these measures will make other than a small impact on the steady worsening of traffic congestion and travel times which particularly affect businesses, economic activity and quality of life in London *outside Central London*.

*Are the modal shift policies realistic?*

12. The policies and proposals set out in the Draft MTS are focussed on investment in the capacity of public transport and in promoting travel options that are claimed to minimise emissions and encourage the use of active and more sustainable modes within an enhanced urban environment. In so doing, the Draft MTS introduces the prospect of a further re-allocation of scarce road space.
13. Despite proposed improvements in public transport capacity, the Draft MTS foresees crowding continuing, particularly with likely future funding constraints. Given their apparently high tolerance of traffic congestion and delay<sup>1</sup>, for drivers there will not be significantly greater incentive than today to leave their cars at home and cycle or take the bus. The Draft MTS acknowledges the expectation of growth in vehicular freight movements and car use, with car remaining the dominant mode choice in Outer London. We doubt that the Mayor’s aspirations for congestion and emissions to reduce and journey times to become more reliable are achievable. This scepticism is not helped by the lack of meaningful data in the Draft MTS on the relative costs and benefits of policy or investment proposals.
14. Increased demand for freight movement and servicing, and for trip-making in general by all modes arising from an increase in population and employment, when super-imposed on the capital’s saturated road network, seriously threatens its operational viability and resilience.

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<sup>1</sup> See: RAC Foundation and IPSOS MORI report “The Congestion Challenge”

The goals and objectives of the Draft MTS with regard to network efficiency and environment simply are not credible without introducing effective mechanisms to control future demand for use of London's scarce road space.

*Managing demand by pricing*

15. The Draft MTS demonstrates that if the performance of the road network is not to be governed largely by driver's tolerance of increasing congestion, with the waste and liveability issues that accompany that, the introduction of some mechanism for rationing the use of that space is inevitable. Differential pricing is perhaps the fairest and most flexible mechanism to achieve this: such a charging mechanism would incentivise the use of roads at quieter times, spreading the peak load and improving utilisation at times of currently low demand. The resulting revenue stream would be hypothecated to fund highway capacity improvements, alternative public transport provision and to enhance the public realm.

*Addressing these issues in the Transport Strategy*

The Mayor should initiate now through his Transport Strategy:

- A comprehensive understanding of the importance of the road network, and of car travel and road freight transport in particular, to the economy and effective functioning of London *outside Central London*.
- A presentation of the best forecasts of travel and transport demand on London's road networks (as well as bus and rail), of the levels of congestion and slower journey speeds as London's population and jobs grow
- Identification of a range of quick-win, value for money road and junction improvements schemes which, by focussing on known "hotspots", can offer some hope of at least containing levels of congestion on the road network
- Meanwhile, a strategic assessment of London's road-space requirements for efficiency in the longer term, linked to a pricing mechanism that: manages overall demand; optimises network use across the 24-hour day; enables the locking-in of benefits of targeted investment, both in highway capacity improvements and in alternative public transport services; helps make carbon emission targets achievable; and raises new funds to make the Mayor's spending aspirations more realistic.

### ***About the RAC Foundation***

16. The RAC Foundation explores the economic, mobility, safety and environmental issues relating to roads and the use of motor vehicles, and campaigns to secure a fair deal for responsible road users. Independent and authoritative research for the public benefit and informed debate are central to the RAC Foundation's standing.

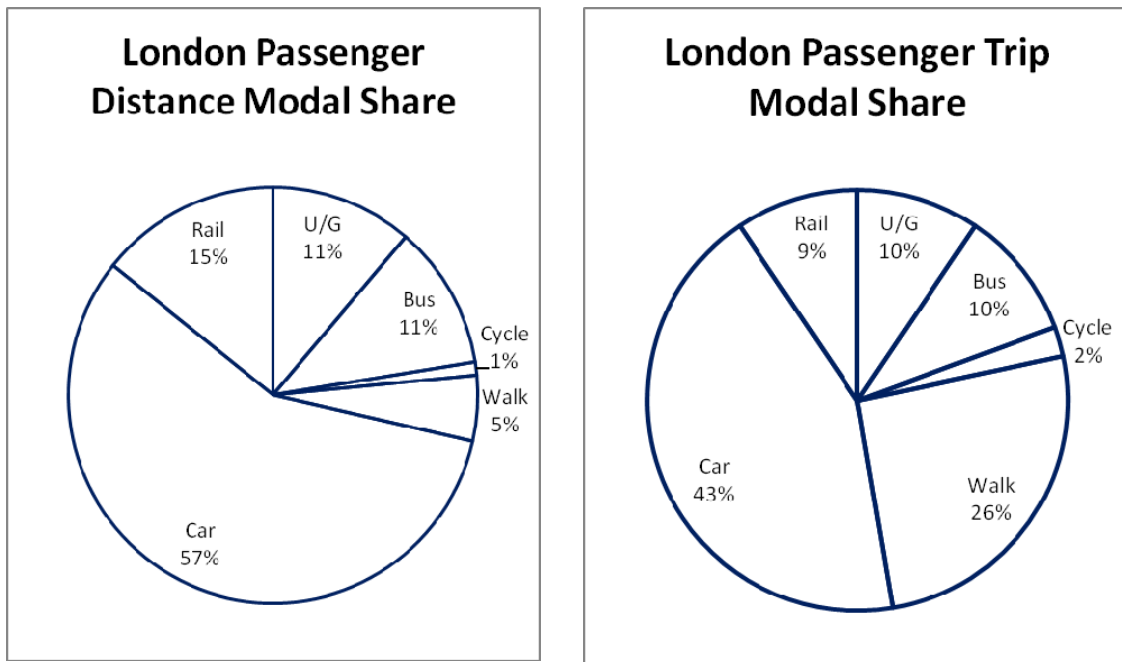
### ***Overall Perspective***

1. The Draft Mayor's Transport Strategy (Draft MTS) is strong on ideas and aspirations at one extreme yet contains tactical and precise targets at the other. The linkages between the two are not spelled out and often these appear to be little more than a leap of faith. Difficult areas are glossed over: in particular what to do about the expected growth in road traffic demand. This is an especially pressing problem in middle and outer London where the scope for significant modal shift is very limited and where capacity increases, coupled with some form of demand management to lock in the benefits, are needed to combat congestion.
2. To be effective, a strategy should identify the key players vital to its success and what actions they will have to carry out. As written, the Draft MTS fails to do this. Even where specific actions are proposed there is little said about how effective they can realistically be expected to be.
3. The Draft MTS lacks any clear indication of priorities. It has 35 policies and 129 proposals – many of which are little more than statements of intent: but which are the most important? Similarly the strategy only deals with funding in very general terms. If funding is insufficient (as it inevitably will be) where will it be focussed?
4. The Draft MTS anticipates a growth in population of 1.3 million people and 0.75 million jobs in London by 2031. This is expected to translate to an increase in daily (main mode) trips from 24 to 27 million<sup>2</sup>. This implies a 4% reduction in personal trip rates - despite prospective income growth. The implications of long term growth in local and national economies and the associated rising real incomes should be dealt with more explicitly. There are no references to the level of future incomes in London in the Draft MTS or either of the two related consultation documents.
5. Most of the travel data are presented in terms of trips whereas most capacity requirements (stations and parking apart) relate to passenger or tonne miles.

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<sup>2</sup> Chapter 6 of the London Plan forecasts 28 million trips by 2023: it is unclear why trip numbers would drop between 2023 and 2031.

Because of the variation in journey lengths by the different modes this can present a distorted picture. The following two charts (using data from “Travel in London”) illustrate this.



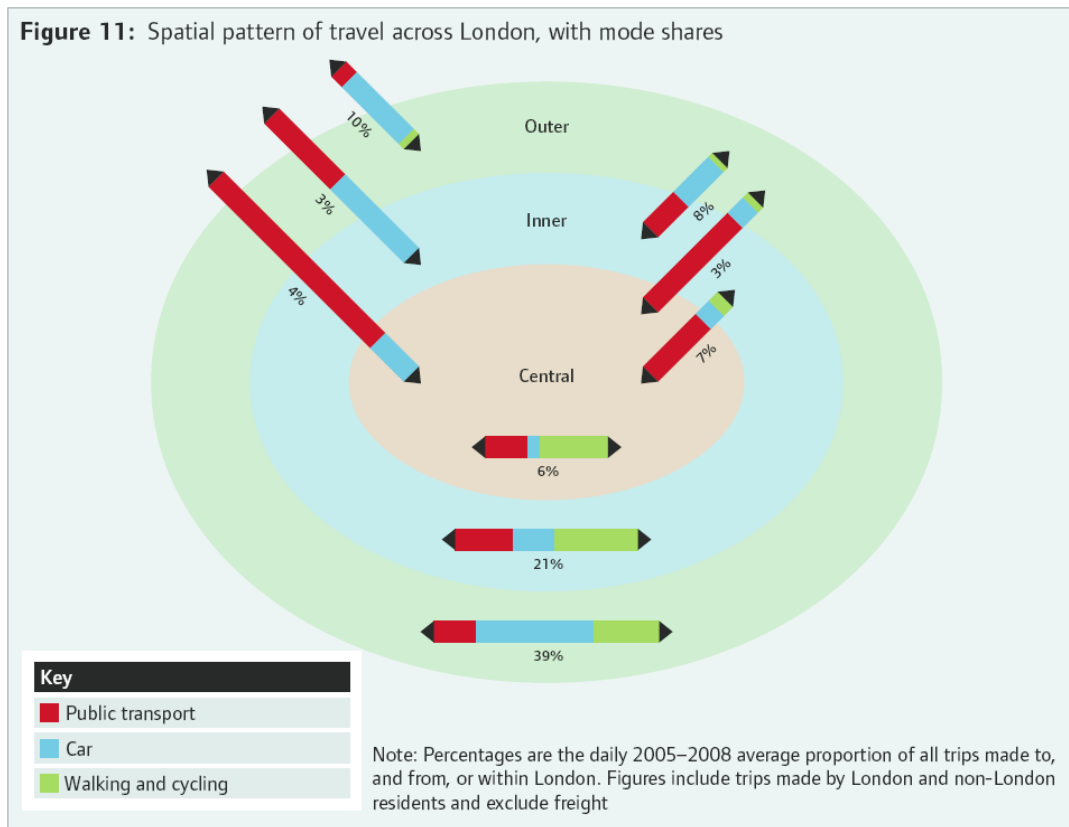
6. The focus is on:

- increasing the capacity of the rail and tube network;
- a sufficient bus system to meet demand and serve new development;
- transport operations and infrastructure that are safe, secure and maintained in a good state of repair;
- encouraging active travel modes;
- equality of opportunity in terms of access to employment, goods and services;
- a cleaner environment together with tackling climate change;
- efficiency in administration and operation of the capital's transport system.

*The dominance of roads outside Central London*

7. When considering London's transport policies there has always been a tendency for both national and London government to give most attention to public transport—especially to the Underground—and to Central London. As with the policies of his predecessor, this Mayor's Draft MTS suffers this weakness.

For the majority of Londoners the private car, the van and Inner and Outer London matter just as much as public transport in Central London. This is illustrated by Figure 11 from the Draft MTS.



Source: Mayor of London (2009) *Mayors Transport Strategy: Public Draft*, Figure 11, p.57

- By international standards the volume of public transport provision in London is good. It is tempting to assume that public transport is the most commonly used method of personal travel. It is not. Whilst rail and the Underground do serve the majority of trips between Central and Outer London these account for a small portion of all trips. In Greater London 60 per cent of all personal mechanised<sup>3</sup> trips are by private car<sup>4</sup>; 22 percent are by bus or taxi and 3 percent by cycle so  $60 + 22 + 3 = 83$  percent are by road. Only the remaining 17 percent are by rail. Freight and the services of trades-people are entirely delivered by road.
- Of mechanised trips *entirely within Outer* London, where 60 percent of the resident population live, 76 percent are by car with 18 percent by bus and 2 percent by rail.

<sup>3</sup> Mechanised trips are all trips excluding walking.

<sup>4</sup> *Draft Mayor's Transport Strategy* Figure 11 and *Travel in London Report No 1*, TfL, 2009, Table 3.1.

The diversity and complexity of many of these trips makes the cost of diverting them onto public transport by reducing fares and improving services prohibitive. Many are too long to be considered as realistic candidates for transfer to cycling.

10. So, whilst it is true that London's public transport is heavily used, the private car and commercial vehicle are dominant.
11. Car use is expected to grow 'only marginally' by 2031, nevertheless, it grows not declines and car remains the dominant mode in Outer London. Paragraph 237 presents cars as 'sometimes being necessary' in Outer London. It would be surprising if most residents of outer London agreed with this: they would usually regard cars as being necessary.

*The failure to deal with worsening traffic congestion in Outer London*

12. Centres of population and business in Outer London can each be equal to the size of small provincial cities most of which have by-passes to keep out unnecessary traffic. The absence of these in many parts of London means that these centres will continue to be plagued by excessive traffic and suffer in comparison with 'edge' and out of town retail and commercial centres. This problem will become worse as Outer London is planned to accommodate an increasing share of employment growth.
13. There has been a 6% reduction in mode share by car between 2000 and 2009, mainly as a result of a 40% increase in bus patronage and a 100% increase in cycling. It is anticipated that mode share by car will reduce by a further 4%, though no date is given by which this might be achieved. The Mayor has a target to increase cycling mode share from 2 to 5% by 2026. Whilst this could be achieved by switching 20% of car journeys under 3km, this would only reduce car traffic by 3-5%. In any case the evidence suggests that on the whole cyclists substitute walking and public transport rather than car journeys.
14. Freight traffic (presumably, light, medium and heavy goods vehicles) comprises 17% of London's traffic today and 25% in the central area zone. Freight traffic overall in London is expected to grow by 25% by 2031. Light goods vehicles are expected to grow by 30% accounting alone for 15% of London's traffic by 2031.
15. The Strategy recognises worsening road congestion as a key reason for its preparation yet the proposals to deal with this are weak. The traffic management measures (paragraph 362) are quite inadequate to reverse the recent deterioration and there is scarcely anything substantive proposed about using parking as a demand management tool. Indeed it appears (paragraph 154: 'as well as managing demand if required') that the need for demand management is not fully accepted. If the Strategy is serious about reducing car modal share firm proposals for demand management are essential.

There is also the unaddressed question of the economic cost of reducing car accessibility by such a large increment.

16. The Draft MTS concedes this in Figure 63, which seems to indicate that the growing demands on the road network will lead to an increase in congestion in 2031 by about 14 percent after the mitigation offered by the proposed rail enhancements, better management of the road network and an increase in cycling. It also indicates that it is only “London-wide road user charging” that could reduce the level of road congestion to less than the current level.
17. While the Draft MTS reflects on the potential requirement for some form of pricing to manage vehicular traffic demand if other measures fail to achieve network operational efficiency and environmental improvements, there is no discussion as to how this might be realised and recent Mayoral comment has indicated no substantive commitment to such pricing – indeed his spokesman has recently ruled it out.<sup>5</sup>

*The Mayor’s lack of powers over most roads*

18. The Draft MTS fails to acknowledge the challenge associated with the lack of jurisdiction over the detail of much of the road network – there is optimism in the assertion that Mayoral aspirations can be met through partnership and borough obligations to comply (at the high level) with the Draft MTS. Local Implementation Plans and Development Plan Documents will not provide the detail that is essential to the understanding of the likely outcomes of a mix of borough proposals. The Draft MTS ‘recognises the importance of boroughs in setting local priorities’ and thus, by implication, that parochial interest will at times override more strategic objectives.

*The disabled*

19. In considering accessible transport the focus is almost entirely on improving ease of access to public transport. Whilst this is important many of the most severely disabled people are unable to use public transport and their only means of convenient access is by car, and whilst provision of ‘Blue badge’ parking is accepted, if the roads are clogged up the mobility of disabled people in cars will suffer.

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<sup>5</sup> In October 2009, Kulveer Ranger is quoted as saying: "There is absolutely no scheme in the mayor's transport strategy to introduce road user charging in London."

<http://news.bbc.co.uk/1/hi/england/london/8302844.stm>

### *The funding gap and the hard choices to be made*

20. Crossrail, committed upgrades to the Tube, and capacity increases on suburban rail will add 30% peak capacity to the rail system in London but overcrowding will remain because of population growth. LUL carries up to 4 million passenger trips per day. This is expected to increase by 30% by 2022 with committed upgrades. Buses carry some 6.4 million passenger trips per day – but no specific expectation as to increase in bus patronage by 2031 is given. The TfL Business Plan shows a 1% reduction in bus mileage by 2017/8 but a 1% increase in passenger miles.
21. The current funding settlement from government provides £39.2 billion through to 2017/18, or £4.8 billion per year. The bus subsidy (currently £560 million per year) is funded from this settlement. The Draft MTS-proposed capital works beyond 2017/18 would need between £3.5 and 4.5 billion per year through to 2031 (the Draft MTS notes that the figures are to be refined).
22. The document does not provide quantitative estimates of the costs of the various proposals it contains so it is not possible to assess the extent to which funds are already available for them. But it is clear that the complete “shopping list” could only be delivered if considerably increased funding became available.
23. In reality the schemes to be implemented will have to be selected from the list to match the available funds. Unfortunately the Draft MTS lacks meaningful estimates of the relative impacts or benefits and costs of policy and investment priorities. There is little more than a list of proposals and projects aligned to high level policy objectives and no indication as to where greatest value would be derived. We welcome the requirement expressed in paragraph 378 that the net benefits of road schemes should be rigorously assessed against the criteria set out in the London Plan, but all schemes should be assessed, even-handedly, in a consistent manner.

### *Carbon emissions*

24. Road vehicles account for 80% of ground transport based CO<sub>2</sub> emissions, with cars and motor-cycles accounting for 49%. The Mayor has set a target of a 60% reduction in CO<sub>2</sub> emissions by 2025 compared to a 1990 base. But cars are only 10% of total CO<sub>2</sub> emissions – more rigorous efforts to reduce CO<sub>2</sub> from, for example, domestic heating would be more effective and less disruptive to people’s daily lives. This is a conclusion (at the national level) of the Committee on Climate Change’s analysis of how to meet the reduction target at minimum abatement cost. The MTS should be aligned with that.

25. As TfL's 2006 study, "Transport 2025: transport challenges for a growing city" illustrated, it is hard to see how the commitments on carbon reduction can be attained and worsening traffic congestion can be prevented without some form of London-wide road user charging. Such a scheme would also have the very considerable advantage of providing the new funds in sufficient quantities to offer a realistic chance of paying for many of the desirable items in the Mayor's currently unfunded "shopping list".

## **Roads**

### *The problem of the Mayor's limited powers*

26. The Mayor of London, through TfL, has primary jurisdiction for only 580kms (5%) of London's roads (designated GLA Roads) which together carry one third of the capital's traffic. The 33 London boroughs, the Highways Agency and the Royal Parks Agency are largely autonomous in their jurisdiction of the remaining 95%. The Mayor has a degree of influence in regard to some 520 kms of borough main roads designated by Government in 2004 as Strategic Roads. Boroughs must seek TfL agreement to works they propose that might adversely affect traffic operations on a GLA or Strategic Road. It is anomalous that boroughs do not need to seek agreement where such works are promoted by a utility company. Change would require primary legislation.
27. By agreement with boroughs (or failing this, through recourse to the Secretary of State), the Mayor could expand the network of Strategic borough roads (say to approx 2200 kms – TfL's so-called 'network of interest') to better reflect the scale of the main road network in London i.e. roads more important to efficient traffic and bus movement. Primary legislation would be required to enable the Mayor through TfL to be pro-active in promoting works on a Strategic borough road. These changes (or, indeed, the transfer of such a network to TfL), would enable single accountability for the operation of London's main roads, a far greater degree of control on their level of service, coherence in the balance of provision to serve competing demands and common standards of maintenance. The Draft MTS is silent on these issues. It does, however, call for greater consistency in regulation and signage for parking and loading, fair and consistent enforcement practices and information to be provided on the internet of parking provision and regulations across London.

### *The failure to create more capacity for the growing traffic*

28. The Draft MTS acknowledges that today delay and disruption to traffic from congestion costs the London economy an estimated £2 billion annually. In 2008, only 25% of Londoners were satisfied with the prevailing levels of traffic congestion. The Draft MTS correctly states that smoothing traffic flow and improved reliability of journeys is vital to the well-being of road users and the economy and is a priority for the Mayor and TfL.

Yet, the Draft MTS is perhaps weakest in regard to proposals to accommodate the anticipated growth in population and trip-making, and to maintain a viable traffic operation on the capital's main roads.

29. The Draft MTS identifies the North and South Circular Roads as Strategic orbital routes, yet the seriously congested South Circular Road is little more than a collection of relatively narrow local roads, with no substantive proposals for significant capacity enhancement. Worthwhile schemes are proposed for the North Circular Road at Henlys' Corner and Bound's Green, which should improve safety, provide better for pedestrians and improve air quality locally through some congestion relief. These schemes are low cost interim schemes and will only provide relief for a few years. One proposal that should be evaluated is to make the whole road dual carriageway and to grade-separate all the major junctions. This might require tunnelling for example, at Henly's corner and Ealing Common. This would need to evaluate the implications for capacities at neighbouring locations.
30. There is concern about lack of space preventing road expansion. Roads (including verges and footways) occupy just over 12% of London's surface area (average width 11.6 metres). If we take a main road network of 1,500 kms at an average width twice the current average we get an area of 35 km<sup>2</sup>. If eliminating bottlenecks increased the width by an average of 5% and we added an additional 10% in new routes the additional land area involved would be 4.5 km<sup>2</sup> and capacity would be increased by probably 20% or so. This would require taking less than 0.8% of land area, so land area itself should not be the major problem - although much will be occupied by sensitive uses. If we compare London's road space with Greater Manchester it has 25m<sup>2</sup>/ head compared with 42m<sup>2</sup>/ head. Greater Manchester has 173kms of Motorway compared with London's 60kms (even including all of the M25, still Manchester has about 2½ times as much per capita).
31. Of course, in many locations it is not practical to widen roads. But there are situations where it could be done without unacceptable destruction or leading to an unreasonable portion of London's land being devoted to roads.

*Road capacity reduction*

32. The Draft MTS proposes a further review of options for another river crossing to the east of Tower Bridge: serious congestion at Blackwall Tunnel is evidence of the need. It is most unfortunate that the previous, long-standing proposals for this new river crossing were delayed—not because of funding difficulties but because of the vagaries of the planning system.

It is ironic that the one major decision on roads that the Mayor has made was to scrap the planned East London River Crossing when the need for additional cross river capacity in this part of London is highlighted in the Strategy; and of the 1.3m additional population forecast by 2031 by far the largest tranche (over 0.6m) is to be in east London on either side of the river.

33. The local economies north and south of the Thames in this region are in real need of a road crossing and the Mayor should expedite the provision of one for their benefit and for the benefit of London as a whole.
34. Gyratory schemes such as at Tottenham Hale were introduced in the 70s to improve network capacity and resilience by reducing the number of pedestrian and vehicle movements and conflicts at junctions. The Draft MTS proposes removal of the Tottenham Hale gyratory, reducing capacity and resilience in this part of London's strategic road network, and promotes a review with intent to remove other gyratories (though with no funding attached). Major infrastructure provision and renewals over the next ten years will reduce available road space further, particularly at key locations in Central London. Removing gyratories does not necessarily reduce capacity: more work is needed to understand this.
35. The London Plan and Draft MTS propose further bus priority where buses encounter undue delay, normally involving a re-allocation of road space at key congestion black spots on the network. Well designed bus lanes can reduce delays to buses with negligible impact on other traffic – unfortunately not all bus lanes are well-designed, with poor approaches to junctions and insufficient space on the other side for traffic to merge away from the bus lane. Bus lanes should be re-appraised periodically to ensure they are working correctly.
36. Cycle super-highways are likely also to demand cycle priority and associated road space allocation away from general traffic, on strategic routes. Improved streetscape and facilities to encourage walking are more likely to remove capacity for general traffic than to provide it. In the past, such proposals have tended to be promoted in a piece-meal and largely uncoordinated manner, with little or no understanding of cumulative impact and value for money overall. The London Plan makes clear that Development Plan Documents and Local Implementation Plans should demonstrate a holistic, coherent, and sufficiently analytical route/area-based approach to ensure that a balanced and integrated package of measures is developed.
37. The Draft MTS appears to rely largely on 'modal shift to more sustainable modes' and the 'smoothing traffic flow' agenda to counter all of the above negative influences on road network capacity and resilience in terms of traffic operations, to achieve stated Mayoral objectives for efficiency, environment, climate change and quality of life.

38. While technological and other potential signalling efficiencies can provide improvements in capacity, these are generally at the margins and certainly not on a scale that would counter the negative influences on congestion and resilience. It is proposed that rephrasing of traffic signals in London will smooth traffic flow and reduce GHG emissions. Whilst an interesting concept we suspect that the effects will be small – it would be instructive to see the evidence of the likely scale of these.
39. The mixed use character of most of London’s main roads makes the use of “high tech.” communication, information and control that much more difficult. Managed Motorways are easy compared with the A23 through Brixton!

#### *Street works*

40. The Draft MTS promotes improved planning and coordination to assist in minimising the inevitable disruption caused by streetworks, underpinned by a comprehensive information system to both industry and the public and controlled by means of the London Permit Scheme. The London Traffic and Transport Control Centre, operated jointly between TfL and the Police, informed by this information system and real-time data on traffic performance, will increasingly focus on the effective mitigation of disruption caused by both planned and unplanned events, the latter including security issues and emergency works, accidents, breakdowns, etc.
41. More systematic analysis is required to establish the specific measures that are claimed will ‘smooth’ traffic flow. Much is made of reducing road openings. The fact is that one of the prices for using roads as utility easements is that roads will be opened from time to time. The utility companies do not do this gratuitously as it is costly and disruptive for them also. Whilst there is some room for improvement we remain to be convinced that this is going to make a major difference. Meanwhile motorists will continue to complain and highway authorities will continue to vilify the utility companies. With London’s narrow streets and limited ‘redundancy’ in the network this will continue to be a problem. So, whilst it is essential to minimise the disruption the Mayor will have to concede that this basic structural weakness cannot be compensated for.
42. The Draft MTS is silent on, but ought to include, a requirement for works promoters to develop and deploy plating and larger bridging structures to enable excavations to remain open but covered to carry traffic during peak periods.
43. The Draft MTS introduces the prospect of lane rental where utility companies take road space for maintenance and renewal of their underground assets. There is sense in this, particularly for London’s main roads as the Permit System itself will not necessarily reduce the quantum nor duration of such road openings.

There are parallels, as example, in the charging of road space for parking. We welcome the publication by the Department for Transport<sup>6</sup> (after the publication of the Draft MTS) of outline proposals to increase the fines for unplanned over-running of works. This announcement also recognises a fundamental weakness of the London scheme: that there is no differential incentive for the promoters of works to give greater attention to those locations where the damages to traffic are greatest. We understand that there are examples of better practice elsewhere in country where these desirable incentives do exist and have been shown to be effective.

44. However, there will be no new incentive for utility companies and their contractors to minimise the number and duration of works if they are simply allowed by regulators to pass such costs to through to consumers irrespective of how they were incurred. There are complications here in the devising of a workable system that would enable regulators to allow undertakers to pass on such costs but only where works have been executed economically and efficiently. The Draft MTS should recognise the practical complexities and the need first to engage effectively with government, utility groups and the utility regulators on the issue.
45. The Draft MTS also fails to recognise the value now in engaging with government to raise the maximum fine levels that courts can impose on poor works performance by utilities, and eventually to decriminalise all contraventions of the New Roads and Street Works Act, to avoid the bureaucracy and cost faced by street authorities with no alternative currently but for recourse to the courts.
46. The 2004 Traffic Management Act makes provision for government to bring forward regulations requiring resurfacing by utility companies of half road width (rather than just trench width as at present) following reinstatement of their road openings. After five years, government has still to bring forward such regulations. The Draft MTS is silent on this: the Mayor should assess the benefits of this and, if shown to be worthwhile, press government to expedite provision of the necessary regulations.
47. Utility companies aren't the only people who dig up the roads. It is equally essential that the boroughs and TfL itself practice what they preach and ensure their own works are permitted and carried out in adherence to the terms of that permit.

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<sup>6</sup> Department for Transport PN158, 22 December 2009, "Plans To Increase Penalties For Disruptive Road Works"

### *The Metropolitan Police*

48. The Mayor should also give a commitment in the Draft MTS to press the Metropolitan Police until a change in culture and priorities is achieved so as to achieve greater efficiency in the clear-up of potentially fatal accidents, to expedite road re-opening.

### **Cycling, Walking and Streetscape**

#### *The limited contribution of cycling policy*

49. The Mayor wishes to see a 'revolution in cycling' to achieve a shift to a more active travel option and thereby relieve congestion on other modes, improve the health of Londoners, and contribute to a reduction in CO<sub>2</sub> and other vehicle emissions. His aspiration is to increase cycling mode share from 2 to 5% by 2026. He proposes an 'unprecedented level of investment' and a number of significant initiatives in support of this goal, in particular a cycle hire scheme and cycle 'super-highways', and reflects on the importance of strong borough leadership in achieving a necessary change in culture. It is indeed a sound objective to encourage cycling and to seek to create a safer environment in support.
50. The London Cycle Hire Scheme will provide some 400 cycle docking stations at approximately 300 metres spacing in central London and is intended to encourage short trips off the tube and buses and a modal shift from cars. Expansion of the scheme to outer London town centres will be considered dependent on the success of the central London scheme. The cycle hire scheme, while costly, may have merit particularly when set in the context of a central London road network that will be severely constrained in the next few years as a consequence of transport, development and utility infrastructure provision and renewal, and the requirements of the Olympics in 2012. However, recent reports from Paris as to the scale of loss and damage to cycles, and consequent significant increase in originally anticipated operating costs of its cycle hire scheme are of concern. Also, the safety implications of a large number of inexperienced cyclists on London roads, not properly equipped with helmets and other safety equipment, and many from overseas so not used to our rules of the road, must be a worry.
51. The Draft MTS is proposing the provision of 12 cycle 'super highways' on key radial routes into London, with the intent to 'improve the capacity of the radial network', presumably for cyclists. It is unclear as to the form these measures will take but likely that they will include priority at junctions that currently present a barrier to cycling, and some re-allocation of road space to cyclists. Experience in inner London suggests that the highest rate of cycling occurs in boroughs where public transport is more limited – this suggests a greater likelihood of a modal shift to cycling from tube and bus than from car.

The concern must be, therefore, that capacity on the capital's main radials will be reduced for vehicular traffic without a corresponding reduction in car (and of course freight) vehicle demand, leading to increasing congestion on already heavily oversubscribed main roads.

52. It should also be recognised that the contribution of this to reducing road traffic congestion will be small. If a quarter of the extra ridership were car drivers then the reduction in vkms would be about 1% (estimated at 0.8m vkms out of a daily total of 80m vkms). We do not know what the traffic capacity impacts on the roads of the cycle schemes necessary to achieve this switch will be, but it is more than likely that they will offset this 1% gain.
53. Whilst increasing cycling is desirable, care must be taken to reduce accident rates: indeed it is arguable that this policy should be contingent on meeting a target of reducing accident rates.
54. The Mayor is to press for legislation to establish an effective legal framework for pedicabs, including licensing powers for boroughs. Pedicabs add to already significant congestion in parts of the West End, disproportionate to their value in transport terms. It would be more appropriate to press for powers to prohibit their operation in the capital.
55. The London Plan proposes a closer integration of transport and development, encouraging development patterns that reduce the need to travel, especially by car. It not only proposes maximum parking standards but also the provision in new development of secure cycle parking, on-site changing facilities, and showers. This is worthwhile though much of the capital is built out in a manner that does not provide particularly well for cycling. The Draft MTS recognises the need for more secure cycle parking facilities generally (and particularly at stations and other key attractors) and improved way-finding for both cyclists and pedestrians. Extensive provision of training, especially for young cyclists, is also proposed.
56. There is a particular challenge in providing public transport cost-effectively to meet the more highly dispersed travel demand in Outer London where in many areas the more-strategic road space remains as constrained and over-subscribed as in inner and central London. Here, an even greater effort is needed to encourage cycling (and walking) to the local town centres if car travel is to be contained. The extensive residential neighbourhoods generally present a pleasant and uncongested cycling and walking environment and with speed control, would offer a safe and healthy alternative for local journeys.

### *Speed limitation*

57. The Draft MTS suggests that car access might be 'restricted' in residential neighbourhoods to reduce speed and create a more pleasant and safe space for cycling, but does not specifically promote the widespread introduction of 20mph zones. It does, however, promote (subject to successful trials) the deployment of 'voluntary' Intelligent Speed Adaptation (ISA) and average speed camera technology to enforce speed limits. The RAC Foundation supports 20mph zones, in areas identified locally, and voluntary ISA, although the preference would be to design streets to encourage lower speeds, with police enforcement. Whilst there may be some lessons in this area from the Portsmouth evaluation published in December 2009<sup>7</sup> these results seem inconclusive and need to be reviewed over a longer period.

### *Problems of delivering improvements to the streetscape*

58. The Mayor wishes to promote a significant improvement in the quality of the visual/physical street environment, designing out features that make people feel insecure and that are difficult to negotiate for people with disabilities and reducing the intimidating impact of traffic in residential neighbourhoods. By improving the street scene in this way, the Mayor seeks to encourage a sense of civic pride and responsibility and to enhance Londoners' quality of life and sense of well-being. Such aspirations require careful attention to detail by trained designers and quality in execution. There is risk here that funding simply will not be available to provide for the quantum of skilled staff required and number and scale of improvement schemes to achieve substantive change. The Draft MTS also recognises that traffic noise can be reduced through maintaining roads to a good state of repair and again, adequate funding is key.
59. An improved and more accessible streetscape will support the Mayor's aspirations to increase mode share in cycling and walking. The Draft MTS recognises that much can be done here and that the 'devil is in the detail', requiring street audits and training of engineers in the design and delivery of schemes to facilitate walking. Comprehensive street audits will enable proper consideration of the needs of people with a disability and a basis for provision of an on-line Journey Planner that incorporates street accessibility characteristics. This should be highlighted as an action in the Draft MTS.
60. While the Draft MTS calls for quality in both design and materials, funding constraints are likely to be such that few 'signature' schemes will be delivered.

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<sup>7</sup> <http://www.dft.gov.uk/pgr/roadsafety/research/rsrr/theme4/interimeval20mphspeedlimits.pdf>

Much can be done, however, by the judicious use of white paint and de-cluttering as part of general maintenance and planned renewal, at small cost, to 'civilise' traffic operation in local neighbourhoods, reduce barriers to walking and enhance the visual environment.

61. In developing local walking routes every effort should be made to avoid proliferation of signalled crossings and associated delay to vehicular traffic.

## ***Environment and Climate Change***

### *Mitigation of extreme weather events*

62. The Draft MTS, rightly, considers environment and climate change seriously and in some depth. It recognises the need for London authorities to consider now the challenges that more extreme weather events will present and how best to plan for this. Funding constraints are likely to limit scope for increasing the resilience of infrastructure and London will need to rely on a high degree of co-ordination across the many authorities responsible for different elements of the transport system for timely and effective management action.

### *Unrealistic hopes for emissions reduction*

63. The London Plan encourages development patterns that reduce the need for travel, especially by car, and that are well integrated with public transport facilities. In May 2009, the Mayor produced an 'Electric Vehicle Delivery Plan for London' that is seeking to develop 25,000 charging points by 2015. This will be achieved both by retro-fitting in existing development and on-street, and by promoting provision in new development. The Draft MTS anticipates electric vehicle uptake to be 8% by 2025, although 50% would be required to meet the Mayor's emissions target without other measures.
64. Both the London Plan and the Draft MTS encourage the use of travel plans to help reduce emissions by promoting alternatives to the car. The London Plan recommends parking standards for new developments dependent on a public transport accessibility index and calls for provision within developments for parking to accommodate car clubs. The Draft MTS promotes the idea of car sharing and the development of travel plans that focus on alternatives to the car. It also encourages differential parking charges for environmentally-friendly vehicles. The Draft MTS states that from 2012, all new buses coming into service in London will be hybrid. The Mayor also intends to undertake a three-year trial of at least five hydrogen powered buses by 2010 notwithstanding the high cost of vehicles and associated infrastructure.
65. Despite introduction of the first two stages of the London-wide Low Emission Zone (LEZ), certain key locations in the capital, notably A501 Marylebone Road, exceed EU-limit levels of Oxides of Nitrogen (NOX) and particulates for a considerable period.

The Mayor intends to introduce a London-wide standard for NOX emissions from 2015 for HGVs, buses and coaches, subject to government delivering a national certification and testing scheme for NOX abatement equipment. The Draft MTS notes that the Mayor has decided to delay introduction of stage 3 of the LEZ, which encompasses mini-buses and light goods vehicles, from 2010 to 2012, in recognition of the particular pressures on business from the current recession. Economic need has been placed above environmental considerations. This is a difficult decision. It should be subject to a rigorous economic analysis, open to public scrutiny, to demonstrate that the benefits of the delay outweigh the environmental costs.

66. The Draft MTS notes the need for unprecedented action to meet the challenge of climate change and sets an extremely challenging target for CO<sub>2</sub> reduction. Achievement of this will derive from development planning more integrated with transport provision, reducing the need to travel by car; improvements in engine efficiency and incentivising use of low-carbon vehicles; the smoothing traffic flow agenda; the promotion of Smarter Travel, eco-driving, and travel planning; and investment to encourage a shift to sustainable modes.
67. The practicality of delivery in the absence of road user charging must be questioned, however, when set against:
- Significant population growth and anticipated continued crowding on rail and underground.
  - Expected increase in use of the car, especially for journeys in outer London where it is anticipated to remain the dominant mode, and continued reliance on road to meet an increasing freight demand.
  - Currently worsening road congestion, and anticipated re-allocation of road space for infrastructure works and other modal priorities that will further prejudice capacity and resilience of the road network.

## ***Road Demand Management***

### *Road user charging*

68. While analysis and scenario testing has been undertaken to inform policy development set out in the Draft MTS, this appears to have been at a relatively high level. More detailed assessment of the implications of policy initiatives on the road network must await completion of sub-regional traffic models that are in development.

Such modelling is fraught with difficulty given imperfect knowledge as to likely change in trip-making; the extent to which it is practical to achieve a modal shift to public transport and active travel modes and to understand spatial variation in this; adequacy of understanding of future freight demand; a sufficiently detailed understanding of the impact of infrastructure development and renewal on available road-space; and scale and detail of re-allocation of road space to more sustainable modes in the future.

69. There is little meaningful analysis at this point in time to provide comfort that the policies and proposals set out in the Draft MTS to meet aspirations for a reduction in traffic congestion and emissions and an improvement in journey time reliability, are achievable. In recognition of this, the Draft MTS retains the option for the Mayor to further consider various forms of pricing for use of road space to manage demand, should it become clear that the policies and proposals currently promoted in the Draft MTS, fail to achieve efficiency and environmental objectives. The Draft MTS concedes and indicates that it is only “London-wide road user charging” that could reduce the level of road congestion to less than the current level. Additionally, this is probably essential in order to meet the aspirations on reduction of carbon emissions and in order to raise sufficient new revenues to fund the more important, but currently unfunded infrastructure aspirations identified in the Draft MTS.
70. A Mayoral manifesto pledge was to consult on removal of the Western Extension of the current congestion charging scheme. Following support to early draft consultation the Mayor proposes to remove the charge: the Draft MTS confirms that he will consult formally on the making of a draft order for its revocation, thereby enabling further representations as to the merits of this and its conformity with the Draft MTS. Removal of the Western Extension of the congestion charge would seem not to conform with the Draft MTS as it would lead to an increase in congestion that it is unlikely could be sufficiently mitigated by other measures. Further, now that the initial investment costs are sunk, the loss of income would be particularly unfortunate in view of TfL’s funding challenges.
71. The RAC Foundation has no strong, or fixed views on whether the Western Extension should be kept or abolished. There are undoubtedly arguments for and against keeping the original scheme. Whilst one can argue about the merits of the Western Extension of the charging scheme, either way it will not do much for London traffic generally.
72. The Foundation would instead like to see the Mayor address the wider issue of road traffic and congestion in Central and Greater London from a more strategic view-point. Taking this approach will then make it possible to determine whether the Western Extension in its current form, is appropriate in relation to any other charging or demand management measures implemented in the rest of London.

Only when the Congestion Charge is taken within its wider policy and strategy context, is it possible to judge its future use.

73. We advocate a second generation charging scheme maybe covering the area within the North and South Circular roads, or the whole of London, and employing some form of electronic tracking.

## **Freight**

### *Out of hours deliveries*

74. It is clear that London's existing urban fabric cannot easily accommodate the scale of servicing demand today yet alone the anticipated increase to 2031. Competition for space between moving and loading traffic is problematic, particularly close to junctions, where capacity can be eroded significantly by a stopped vehicle with no other reasonable location available from which to service frontage premises. Road space, particularly in central London, will be further constrained by infrastructure works and demands of the Olympics. There exists a need now for far greater understanding of the differentiated market that is 'Freight' (including an understanding of the requirements of its customer base) and to seek to encourage as much 'freight' traffic as possible to move during the quiet hours at night, when roads are generally free-flowing. The Draft MTS generally is silent on this issue, though does suggest an exploration of opportunities to use the London Lorry Control Scheme to encourage the deployment of quieter and more environmentally-friendly vehicles.
75. Compared to many of the world's major cities the proportion of deliveries made at night in London is small: many communities would think it common sense to restrict deliveries entirely to out-of-hours. There must be scope to increase the use of roads at night for goods movements and perhaps also for servicing: this requires incentivising the customer perhaps more than the logistics industry, although there may be additional cost to the logistics industry. Clearly there needs to be a change in the time of day that goods are despatched and received and services to be undertaken, and quieter servicing techniques employed, all carrying associated cost.
76. Whilst there should be some compensating savings in reduced journey times and improved journey time reliability, however there are certainly problems for medium and small businesses receiving deliveries/collections outside normal trading hours. Perhaps a repeat of the 'Operation Moondrop' experiment should be tried and the possibility of local secure delivery points explored. The introduction of some form of differential charging for use of the roads, with premia for periods of high demand and congestion, would serve to further incentivise night-time goods movements and servicing operations, freeing capacity for people movement during daylight hours.

### *The requirement for more freight infrastructure*

77. The Mayor is keen to work with Network Rail to relieve London of freight that has no origin or destination in the capital. The Draft MTS notes that a rail-connected freight transshipment facility is expected to open at Howbury Park (near Slade Green) in 2010. A new rail freight hub is proposed at Brent Cross/Cricklewood. The London riverside area of the Thames Gateway has been identified for freight terminal facilities to capitalise on the freight carrying capabilities of High Speed 1. Such facilities will place significant demands on local roads and connections to London's strategic road network. The Mayor is also keen to make greater use of London's waterways for freight movement. Irrespective of the above, there is little doubt that 'freight', which includes traffic associated with a myriad of services, not simply the carriage of goods, will largely be captive to the road network.
78. The Draft MTS states that 'freight traffic is expected to increase by 25% between now and 2031 .... increasing congestion and servicing costs'. The London Freight Plan seeks to mitigate this impact by promoting: a Freight Operator Recognition Scheme (FORS); Delivery and Servicing Plans (DSPs) and Construction Logistics Plans (CLPs); and a freight information portal. While these initiatives are sensible in themselves and absolutely worthwhile for new developments, there is no indication as to their effectiveness overall in reducing congestion and disruption on London's main roads. The Mayor is supportive also of consolidation centres and break-bulk facilities – it is far from clear that such facilities will reduce the quantum of freight vehicles on the capital's roads significantly. No indication is given as to the success or otherwise of the East London Construction Consolidation Centre. The western one based at Long Elms seems to have been successful.

### ***Buses and the river***

#### *Improving the implementation of bus priorities*

79. More than 95% of London residents are within 400 metres of a bus stop and all buses except those on Heritage routes are fully accessible. The network is subject to continuous review and development to meet changing travel needs. Patronage has grown from 4 million per day in 2000 to 6.4 million in 2009, while annual subsidy has gone from zero to £580 million in the same period. Analysis of Table 2.1 of Travel in London suggests a fifth of growth over last 10 years is population driven and rest is modal shift. It is argued that improving bus services will switch more local travel to bus; yet it appears that over the last ten years bus service improvements have resulted in a lengthening of bus trips ("Travel in London" tables 2.6 and 2.7).

80. Cost efficiency is 20% ahead of most major international cities: repeated studies have indicated that there is little scope for further cost efficiencies through the procurement process without deterioration in service volume or quality
81. Some 40% of bus passengers are now eligible for free or reduced fares – thus average fare per boarding is £0.48 despite the cash flat fare being £2. This will have affected the growth in patronage, size of the peak vehicle requirement and thus the extent of subsidy.
82. The recent past has seen a considerable expansion in the provision of bus priority across the capital in an effort to protect buses from traffic congestion. This takes the form of preferential treatment through Selective Vehicle Detection (SVD) at traffic signals and the reallocation of road space for bus lanes. Bus priority must be very carefully designed if it is not to create extended queues for general traffic that can lead to a cascading reassignment and deterioration in network performance more generally over a wider area, which is counter-productive also for buses. This is particularly the case in congested urban road networks comprising relatively short links, as found in inner and central London.
83. The most effective recent bus priority measure was in fact the Central London Congestion Charge as it reduced traffic levels overall, rather than seek to remove road space from general traffic within a congested environment. SVD is of little benefit where bus frequencies are relatively high on all approaches throughout much of the day. The piecemeal manner in which bus priority measures generally have been planned and implemented on London's streets have not enabled a robust understanding of the cumulative impact on both bus and traffic operations overall. The London Plan and Draft MTS call for more bus priority where buses encounter congestion at 'critical' locations but for this to be done within a coordinated approach to road space re-allocation across the capital, to enable a real understanding of cumulative impact and benefit or disbenefit. However neither document calls for a review of existing bus priority provision to verify best value. This should be carried out.
84. The Draft MTS notes the importance of IBus in enabling the bus operators to control service operation better. It would be helpful to learn of the outcome of IBus in terms of service improvement, to understand the monetised benefit derived from the considerable cost involved and to know that operators are using the service to maximum effect. It would also be informative to have a list of congestion hot spots for buses and proposals as to how they are to be overcome.

*The benefits of the bendy-bus*

85. A concern is the Mayor's intent to phase out the bendy-bus by 2011 and to develop an 'iconic' new bus for London. It is understood that this bus will provide for open boarding and be double decked.

The bendy-bus is an extremely effective vehicle for the boarding, alighting and transport of large numbers of passengers and in the numbers deployed in the capital on high demand bus routes in early 2009 it did not adversely affect traffic performance materially. We are not aware of evidence to suggest bendy-buses are less safe than traditional single and double-deck buses. The new double-deck bus is unlikely to have the capacity of the bendy-bus nor facilitate the same high rate of boarding and alighting: thus, more buses will be required and there will be a greater risk of bus-on-bus congestion at stops, affecting traffic operations more generally. Round trip times and layovers are likely to be longer and more terminal and stand space may be needed. With the intended open boarding, a conductor may well be required, increasing operating cost further. The Draft MTS makes no comment on the value for money of this Mayoral priority. It may be poor and thus counter to the efficiencies that the Mayor is committed to more generally.

#### *Coach parking*

86. London has struggled adequately to address set down, parking and terminal space for coaches for which the majority of destinations are in central London. Victoria Coach Station is at capacity and there has been protracted dialogue surrounding its redevelopment and associated future provision for coaches. Long lines of coaches park up along some of the most potentially attractive strategic main roads in London, namely, Victoria Embankment and Park Lane obstructing important views. Foreign coaches spill out their passengers offside into running traffic lanes. The London Plan and Draft MTS introduce the prospect of providing coach hubs to remove pressure from Victoria while retaining good access to the centre. There are, however, no hard proposals of substance to address the current parking difficulties. The London Plan makes clear the need for Local Development Frameworks and Development Plan Documents, in general, to make appropriate provision for land to accommodate transport related infrastructure. To date central London boroughs have been somewhat resistant to the designation of land for the parking of coaches, other than for short term temporary use.

#### *The limited contribution the river can make*

87. Whilst improving river services is to be supported provided the costs are reasonable, it is worth noting that the 1.4m trips year is about the same as an average London bus service. Whilst we support the use of the Thames for the limited amount of freight for which it is suitably located, but it should be noted that transfer arrangements can be problematic and the associated lorry movements can be a nuisance.

## **Rail**

### *The need to deliver proposed rail capacity increases*

88. Some 70% of all rail travel in the UK is to or from London. Peak period crowding is a significant issue arising from a 60% increase in patronage since 1994. Some Network Rail lines into central London will see a demand increase of up to 30% by 2031.
89. Several promoters have published proposals for a new high speed line to Birmingham, Manchester and Scotland<sup>8</sup> and the Government is set to publish its own HS2 study in Spring 2010. If implemented these would require the distribution of very large numbers of additional passengers to the London termini, though this would only become an issue after 2025, the earliest opening date for a scheme. Press reports suggest that the HS2 study for the government of High Speed Rail may be anticipating up to 20,000 seats an hour arriving at one or more points at the London end of the route. Accommodating this load on central London's distribution network will be a challenge. The Draft MTS currently proposes Euston as the terminus. There are real issues today in bus, taxi and pedestrian access at Euston - the A501 Inner Ring Road is very heavily congested, and there is significant crowding on the Underground at Euston that will persist through to 2031 despite proposed line upgrades, albeit to a somewhat lesser degree. Were there to be delays to the delivery of either Crossrail or the Underground upgrades there would be serious doubts about the ability of the London public transport system to cope with the additional demands predicted from High Speed Rail.
90. The proportion of radial Network Rail services into London overcrowded in 2006 was 55% and without the investments in the current High Level Output Specification (HLOS) this would rise to 67% in 2031. The HLOS is now a committed programme of capacity improvements to 2014 on each of London's main radial rail corridors. Thameslink will provide a capacity increase of 127% by 2015 in the core section between Farringdon and Blackfriars. CrossRail will add 10% to the overall capacity of London's rail network but will not be completed until 2017. Nevertheless, the proportion of the network crowded by 2031 without further significant investment is estimated at 50% and even if all investment in Network Rail set out in the Draft MTS was to be delivered, crowding would remain at 32%.
91. Rail arrivals at London termini are forecast to increase by 25% by 2026. Congestion relief schemes such as at King's Cross/St Pancras and Victoria are costly and disruptive in their lengthy delivery.

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<sup>8</sup> See Preston, "The Case for High Speed Rail: A review of recent evidence", RAC Foundation, October 2009.

The Draft MTS is suggesting a greater proportion of arriving passengers should cycle or walk to their final destinations to free up space on congested Underground and bus services. This is sensible but the Draft MTS fails to acknowledge the implications this will have locally for crowding on footways and crossings and the traffic operational impact of increased competition for space at busy central London road junctions.

92. The recent capacity, frequency and quality improvements achieved by London Overground are welcome. There are no specific extensions proposed in the Draft MTS beyond reopening of the East London Line in 2010 and its extension to Crystal Palace and East Croydon by 2011 and no funding for service enhancements post-2012. The feasibility of further expansion and capacity increases on the DLR, beyond the three-car upgrade and extension from Stratford International to Canning Town, will be investigated including extension to Dagenham Dock to support the Barking Riverside housing development: there is no funding for this extension and there is a question as to value for money and whether or not development is better focussed on brown-field sites already served by line-haul transport. Further development at Barking Riverside could be contrary to the development principles set out in Chapter 6 of the London Plan.
93. £54 million is to be invested in CroydonTramlink on maintenance upgrades, renewals and capacity enhancements to 2015. There is a commitment to examine potential benefits of line extensions though no funding is available.

*The Underground upgrades must be completed*

94. Station congestion relief schemes are proposed and funded for Victoria, Tottenham Court Road, Bond Street, Paddington (H&C) and Bank. Schemes are needed also for Vauxhall, Finsbury Park, Highbury and Islington, Holborn, Camden Town, Oxford Circus, Edgware Road, Old Street and Moorgate but funding is not identified for these. Similarly, funding is not identified for station expansion to accommodate demand arising from HLOS2 and HS2 proposals that would affect London Bridge, Euston, Liverpool Street, Paddington, Elephant & Castle and Waterloo. The current station refurbishment and accessibility programmes are being scaled back due to funding constraints, with no funding identified post 2017/18.
95. It is noteworthy that despite the considerable and very necessary investment in the 'transformation of the Tube', serious congestion will continue through to 2031 on parts of the network, particularly in the vicinity of Camden Town, King's Cross, Bank, Canary Wharf and on the Northern line approaching Stockwell.
96. It is essential that adequate funding is made available to complete the extensive programme of work to improve the Underground, to the planned timetable. There appears to be no funding available for cooling the deep tunnels following the line upgrades in 2020.