



Delivering the vision for London's streets and roads

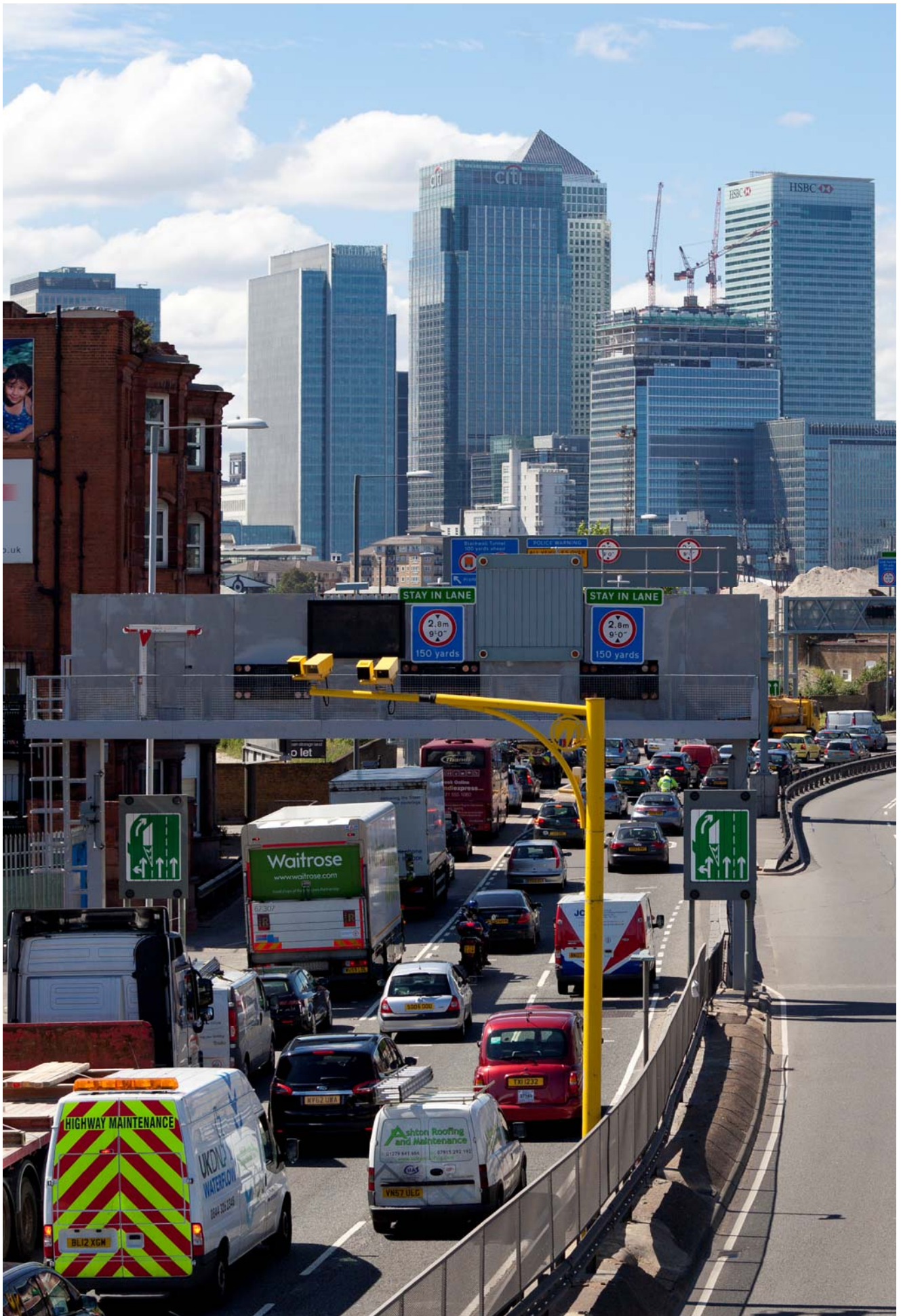
Transport for London's response to the Roads Task Force

July 2013

MAYOR OF LONDON

Transport for London





Message from the Mayor

Often seen as the neglected sibling of our Tube and rail lines, London's roads are in fact the veins and arteries which keep this city alive. 80 per cent of all trips made by people and 90 per cent of all goods moved in London every day are on our roads.



Our roads and streets make up a huge part of London's public space – about 80%. They are the places where people live, shop and watch the world go by. The traffic congestion that can clog them remains a source of continual frustration and inefficiency for all road users estimated at £2bn in lost business every year.

Yet for too long it has been considered ideologically incorrect to want to improve our roads and streets. Being 'pro roads' has been seen as being exclusively 'pro motorist'. In fact, the majority of London's road users are bus passengers, pedestrians, taxi users and cyclists. It is time we recognise that our roads and streets support the economic function of the capital, have the potential to unlock new housing and jobs, and support growth. They deserve a level of investment and strategy to match their importance. We now have new technology at our fingertips which means we can squeeze even more out of the road network: using innovative approaches like smart signalling and dynamic lane management that mean that our roads can work harder than ever before for all road users, and become better places for everyone.

Over the past year, the Roads Task Force has been tireless in studying the challenges facing London's roads and I salute them for their commitment and hard work. Their findings prove that although progress has been made, London needs to be bolder and embrace more innovative solutions in future. This is especially true if we are to cope with the huge population boom which will hit over the next few years. We need to ensure that Central London is a fantastic place for people to visit, invest in and do business. We need to accommodate thousands of homes and support jobs in inner London locations such as King's Cross, Vauxhall and Elephant and Castle.

We want to transform high streets across the capital and roll out a programme of congestion-busting schemes in outer London.

It is time to look at the achievements of other cities for inspiration in how we can transform our capital's roads in the same way as we are our rail and tube networks. We can, and should be, inspired by ideas such as tunnelling in Oslo and Paris, housing built around a green transport network in Stockholm and the introduction of night-time freight delivery trials in Barcelona.

Bold approaches need to be considered such as potential locations for roofing over roads to create new surface space for communities, relocating capacity underground and building new iconic structures for walking and cycling.

If our city is to remain competitive and be an even better place for people to live, work and visit, we need to agree now that more investment is needed across the capital. We've already secured a massive uplift in funding that will mean every borough in London will see benefits on their roads, and I am keen to build on the work of the London Finance Commission to explore other ways to fund road improvements through fiscal devolution. Our roads and streets need care and attention to ensure our economy continues to grow and I am looking forward to working with London's boroughs and others to realise this vision.

A handwritten signature in black ink, appearing to read 'Boris Johnson', with a long horizontal flourish extending to the right.

Boris Johnson
Mayor of London

Commissioner's foreword

Every day, around 24 million journeys take place on the Capital's roads. As the Commissioner for Transport for London (TfL), I'm acutely aware of how important these journeys are – both to the economy of our city, and to the quality of life for Londoners. I therefore warmly welcome the groundbreaking work of the Mayor's Roads Task Force (RTF) in examining the future needs of London's road network and its public realm, and the role of TfL in supporting this.



We have a strong track record in managing our roads and public spaces. Since TfL was created in 2000 we've made our streets safer, with a 51 per cent reduction in the number of people killed or seriously injured (KSIs), and we've achieved a continued shift towards more sustainable modes of transport, with a nine percentage point drop in the proportion of journeys by car and a 173 per cent increase in cycling on main roads. We've also transformed our bus fleet and have expanded services by almost 40 per cent, increased bus use by more than 60 per cent and delivered more reliable journeys on our very busy roads. Since 2009/10, TfL has improved journey time reliability on the Transport for London Road Network (TLRN) and reduced overall serious and severe traffic disruption on all of the Capital's roads by 11 per cent.

Last summer, with the spotlight on London, the world was able to see the impact of all this and our ability to deliver an efficient road network as we enabled the Olympic and Paralympic Games to run smoothly while keeping London moving.

But the challenges only get greater. Looking ahead, London will have an increase in population and there will be higher expectations for reliable, safe roads and the efficient delivery of goods and services. We will also need to preserve and create attractive public spaces.

Our response to the RTF's report explains how we will begin to address these challenges. It sets out where we have immediate plans to put into action measures recommended by the RTF, and it outlines our long-term commitment to the development of a strategy for investment in our roads and public spaces. Some changes will take time, but the RTF has been a valuable catalyst in setting change in motion and we look forward to taking this work forward.

A handwritten signature in black ink, appearing to read 'Sir Peter Hendy'.

Sir Peter Hendy CBE
Commissioner, Transport for London

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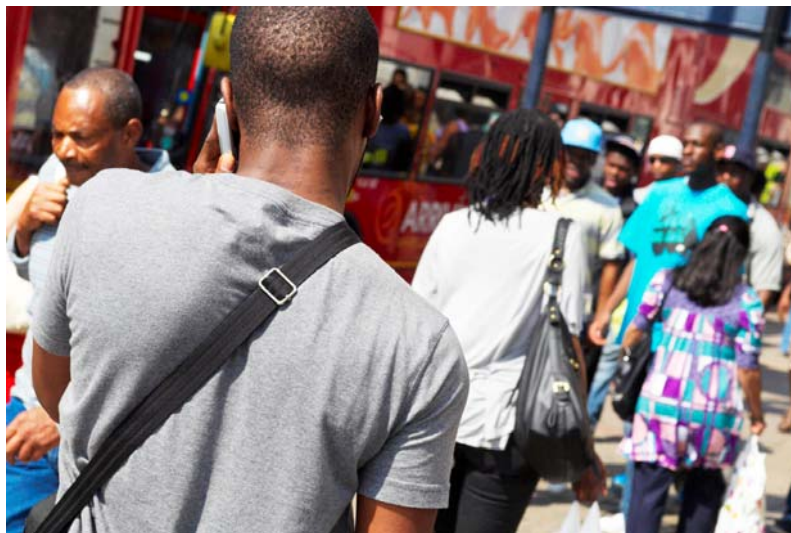
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Executive summary

London is at the heart of the UK economy. Its economy is bucking UK and European trends and now contributes 22 per cent of the country's gross domestic product (GDP), as it retains its position as a world leader in key financial and business sectors. Such success is attracting more people to the Capital, with its population growing faster than expected – a trend that is expected to continue.

Successful growth has been supported, and in part enabled, by important transport investments that have taken place in recent years: transforming our Underground, bus and rail networks; delivering more reliable journeys by road; and creating new and attractive public spaces and streets.



London's road network is the backbone of our transport system, supporting 80 per cent of passenger journeys and more than 90 per cent of freight movements in the Capital. Transport for London (TfL) is a world leader in managing this network. We have consistently delivered innovative schemes to improve the way it operates. This includes upgrading the Blackwall Tunnel; tackling congestion hot spots like Henlys Corner; creating game-changing urban realm improvements, such as the diagonal crossing at Oxford Circus; or using technical expertise to ensure the efficient operation of the network during last summer's Olympic and Paralympic Games.

But there is more to do. London's population continues to grow and is set to increase to 10 million by 2030, bringing with it the need for 400,000 new homes, and more jobs and business developments such as the Royal Docks and the Vauxhall Nine Elms Battersea development areas. Without action, our road network will be blighted by more congestion, worsening reliability and a declining environmental and safety performance. So we need the right transport investment now to support London's growth and to meet the other challenges ahead.

In some cases this will require new schemes to tackle congestion and to ensure that the city can keep moving; in other cases it is about ensuring we create the environment and opportunities for sustainable travel and the public spaces that contribute to a high-quality of life: a city where people want to live. TfL has a key role in delivering this.

The Roads Task Force

The Mayor's RTF has clearly articulated the challenges facing London's road network, highlighting the need to address congestion and meet growth while accommodating more walking, cycling and provision of better public space. TfL has worked closely with the RTF and welcomes its report, and in particular the strategic framework it sets out to address these challenges, including:



- The identification of street-types in a London 'street family' – in recognition of the many functions our streets and public spaces perform
- The definition of the 'toolbox' of transport interventions, encouraging us to go further and look more widely for solutions appropriate for all street-types
- The importance of a longer-term strategy for investment in London's roads, to drive positive change in the future and new approaches to working with stakeholders

This response is published in tandem with the RTF's report, in recognition of the importance of its work and the need to demonstrate TfL's commitment to addressing its

recommendations.

TfL's response

Our response outlines our work to date in improving and managing London's roads and how we will now build further on this success where there is immediate scope to put into action the RTF's recommendations. It also highlights where there is a need to take some time to develop new processes – such as around project and programme governance, or to complete new studies to ensure we are fully informed on the best way forward.

We have a strong track record to build on, and TfL's Business Plan has earmarked £4bn new investment for London's roads by 2022. While subject to the Government's Spending Review, this will take us a long way in addressing the recommendations of the RTF. In particular, we will:

Tackle congestion through a mix of technology and physical interventions, including:

- An active approach to traffic management enabled by the installation of 1,500 new Split Cycle Offset Optimisation Technique (SCOOT) sites to manage the network, alongside other innovative measures, including making the most of information technology and social media to better inform us and our customers about the network's operation
- Targeting trouble spots on the network with more than 1,200 local improvement schemes across TfL's 23 strategic corridors by 2021/22
- Examining through studies further measures to tackle congestion, including junction and link capacity and enhancements to orbital capacity, as well as completing a study of the Inner Ring Road looking at its strategic 'movement', function, and role in enabling new development

Improve London's public spaces and streets by:

- Re-imagining places to make them greener, safer and more user-friendly with significant improvements to the public realm at locations like Vauxhall, Waterloo, Elephant & Castle and Old Street
- Breathing new life into Outer London high streets, reshaping some as cycling-focused 'mini-Hollands', and making major investments at others, such as Croydon, through the Greater London Authority's (GLA's) Outer London and Riot Recovery funds, and new Local Implementation Plan (LIP) major schemes



Get more from our road network by exploiting the potential to either permanently or temporarily 'free up' space for different uses, for instance for freight, public enjoyment or walking and cycling. We will:

- Trial flexible lane management to explore the potential for innovative traffic management techniques such as use of Light-Emitting Diode (LED) studs to mark different lane allocations, as is used in the Netherlands to alleviate



congestion on their A50 motorway during rush hour

- Maximise the usage of the most efficient and sustainable modes of travel, for example by putting in place additional bus and cycle 'priority points' at key locations on the network to improve journey times
- Work with the boroughs to find opportunities to trial the creation of new public spaces and road layouts through the use of low-cost traffic measures such as planters and temporary street furniture, and to ensure these can be adapted easily to find the best solution
- Explore the scope for more informal use of our roads and streets as public spaces with a programme that allows temporary, traffic-free events for public enjoyment in some of London's iconic locations, such as Regent Street and Embankment

Make it easy and attractive to walk, cycle and take the bus by:

- Taking Legible London to new areas and working with developers and boroughs to achieve the ambition of more than 3,000 Legible London signs being in place by 2021 – ensuring excellent wayfinding across London

- Delivering the Mayor's Cycling Vision, including new cycling arteries across London with east-west and north-south cycle superhighways by 2016; a Central London Cycle Grid to encourage new cyclists into the heart of the Capital, and Quietways to provide direct and attractive routes across inner and outer areas
- Providing more priority for buses on key routes, tackling 30 traffic 'pinch points', which affect around 250 routes that carry some three million people daily, and supporting high-quality bus priority corridors, especially where they can help unlock new development

Deliver a better managed network: dealing effectively with incidents and roadworks, enforcing the rules of the road where needed, and managing the demands on the network at key locations and times. Highlights include:

- Better incident detection through an expanded and more technologically advanced CCTV network, using cameras for automated detection of incidents and queuing alerts by end of 2018/19
- Improved compliance with the rules of the road through a coordinated approach by the Police, Vehicle and Operator Services Agency (VOSA) and other enforcement authorities ensuring activity is focused on reducing disruption and road risk
- Using smart cameras to monitor road works to enable checks on requests for extending Lane Rental permits, and helping to manage this more effectively
- Trialling out-of-hours delivery and servicing pilots to make positive use of lessons learnt from the successful freight programme implemented during the London 2012 Olympic and Paralympic Games

Help London grow with:

- Nineteen road schemes directly supporting more than 300,000 jobs at locations such as Tooley Street as part of the wider London Bridge Growth Area
- New river crossings, such as the proposed Silvertown tunnel programmed to open in 2021 (subject to planning and consents) and a potential crossing at Gallions Reach subject to assessment of options and further consultation
- Ensuring that there is high-quality bus priority where necessary to support new development
- Support for developments that are 'car-lite', by enabling dense attractive developments to be easily accessed by walking, cycling and public transport, and supported by car share and car club schemes

Make our streets safer with a range of measures including:

- Tackling more than 30 key junctions to make them safer, especially for cyclists, pedestrians and motorcyclists, at key locations like Blackfriars, Tower Hill and Swiss Cottage
- Supporting the roll out of 20 mph on boroughs roads and trialling 20 mph on some parts of the TLRN
- Upgrading old technology safety cameras to digital operation at approximately 600 locations on the TLRN and borough road networks by the end of 2016 to secure the safety benefits they deliver
- Trialling innovative cycle-friendly infrastructure to make the case to Department for Transport (DfT) to allow implementation of better designs on street
- Trialling a Community Roadwatch scheme to engage local communities in monitoring vehicle speeds in their neighbourhoods and raising awareness of the dangers of excessive speed and antisocial driving

Making our streets greener by:

- Planting more trees, with more than 1,000 additional trees on the TLRN by 2021/22
- Introducing centrally managed lighting systems that can be dynamically operated to control the on-street lighting levels to suit the location
- Introducing LED and low-energy lighting, with 25 per cent of all replacements to be completed by 2018
- Continuing the roll-out of Extra Low Voltage (ELV) traffic signal equipment
- Funding and working with boroughs to deliver the Mayor's Air Quality Fund



Ensure our assets are fit for the future by:

- Delivering a universally high standard across all our assets including roads, bridges, tunnels, street lights, street furniture and bus infrastructure

- Reinvesting revenue from Lane Rental into developing innovative technologies such as rapid hardening material and techniques like ‘core and vac’ technology, which typically results in faster completion of works and reduce time that roads are closed
- Renewing and repairing 1,800 TLRN structures and 12 tunnels with replacement mechanical and electrical kit and new intelligent technology by 2021/22

Future funding

Delivering the investments outlined above, and detailed in full in our response, will greatly improve our road network and public spaces and the experience of travelling and living in London. However, as the RTF recognises, substantial long-term investment is required in London to secure the major transformation needed and to ensure the city benefits from growth. Therefore to build on the work of the RTF, TfL will begin a series of strategic studies to better define our future transport needs. These will combine to inform a longer-term strategy for investment in London’s roads and public spaces.

While we look to national Government to support our case for investing in London’s road network, we know too that that there is a need across the UK to consider new ways of paying for the investment our transport infrastructure urgently requires.

London must be part of that debate. We welcome the attention drawn to the issue by the London Finance Commission recent recommendations, and the RTF report which highlights the potential for greater use of existing funding such as developer contributions and the Community Infrastructure Levy; alongside new sources of funding, whether through subsidiarity of road tax, the potential for a London vignette or tolling new infrastructure. In taking forward our strategy for investment in London’s roads we will explore fully all such options.

2020 and beyond

By 2020, the benefits of our investment in London and our commitment to the improvements outlined above will be clear to see, with cleaner air, better public spaces, reliable roads and easier journeys for anyone choosing to walk, cycle or use public transport. The benefits will extend from the central area to new inner-city quarters in places like Vauxhall and Elephant & Castle, and regenerated town centres and high streets in Outer London, transforming locations like Croydon and Harlesden town centre.

The investment set out in TfL’s Business Plan, and the further work that will be initiated in light of the RTF’s report, will mean that London is well on the way to fulfilling the Mayor’s vision that: ‘As a place to work, live, study, do business, recreate the soul, London is the greatest city on earth’.

Following the publication of the London Finance Commission recommendations, London will prepare its infrastructure plan. The RTF report means we are ideally prepared to consider the future plan for London's road network. And as we look further into the future, as in any other city in 30 years, London will be a very different place indeed. Future revolutions in information technology and engineering have the potential to further transform the city, bringing possibilities and innovations that are unthinkable today. Whether it be through driverless cars, intelligent speed maps 'talking' to vehicles, or the possibilities of ever more connected systems to manage our networks through new technology, London needs to be ready to embrace such change and benefit from it.

The work we begin now, inspired by the RTF, will set us on the path to this successful transformation, truly taking London into the 21st century.



Chapter 1: Introduction

1.1 TfL and the RTF

The RTF was set up by the Mayor in July 2012 to consider the challenges facing our roads and streets. It is an independent body, which has brought together a wide range of different interests and expertise. Its report, published in July 2013, sets out a new vision for London's roads.

This report is published alongside the work of the RTF, and sets out the approach TfL, as the strategic highway authority for London, will take to implement its recommendations.

1.2 The RTF's agenda for change

The RTF establishes a clear and compelling agenda for change in London. It identifies that while progress has been made in recent years, there are three pressing – and interrelated – challenges ahead:

- **Tackling congestion by improving the efficient use of the network** Even with the investment outlined in the Mayor's Transport Strategy (MTS), congestion is due to increase by 14 per cent by 2030, and will be further impacted by the demands of the other challenges set out below

RTF: 'London needs roads that work efficiently to move people and goods.'

- **Providing better and safer public space and streets**, thereby improving the urban experience for those living and working in a growing city

RTF: 'London needs streets and places that are world-class.'

- **Accommodating growing demands for more walking, cycling and public transport**, which in turn bring health and environmental benefits to the Capital

RTF: 'London needs streets that better support sustainable travel.'

We agree with this analysis and welcome the new framework the RTF sets out to address these challenges. This is based on a clear articulation of the diverse functions and purposes of London's roads and streets. It reflects the understanding

that a 'one size fits all' approaches will not work, nor will simpler hierarchal approaches to prioritising different forms of travel. Rather, the RTF sets out the importance of:







- Recognising the different functions that London's roads and public spaces currently perform (see figure 2)
- Identifying the range of street-types in London (the street family) as a means of better understanding how to prioritise their use by location, the most appropriate tools to achieve this, and the likely 'service standards' different road users might expect in different areas
- Applying the widest possible 'toolbox' of transport interventions to address the range of functions our streets and places perform
- Pulling this all together into a wider strategy to ensure local interventions contribute to a system that operates as a whole and addresses the challenges above

We accept that to embed fully the change in approach advocated by the RTF will take time, and further investment. Doing things differently is not only about delivering different solutions, it also means changing the processes by which decisions are made and how people are involved in these decisions.

As such, this report should be viewed as an early response to the challenges and direction set out by the RTF. As we develop the approaches outlined here, and engage with the boroughs and other stakeholders in the development of a new strategic framework for planning London's roads, the full benefits of change will be realised.



Table 1: RTF’s functions for London’s roads and public spaces

Functions roads/ public spaces	Exemplified by:
 <p>Moving</p>	<p>Eg helping people get from A to B, providing for efficient and reliable movement by different transport modes and supporting access to jobs and services</p>
 <p>Living</p>	<p>Eg providing good places that support vital economic, cultural and social activity, bustling high streets, successful neighbourhoods, thriving town centres and world-class destinations</p>
 <p>Unlocking</p>	<p>Eg increasing accessibility and connectivity of growth areas to unlock the development potential that will create the homes, jobs, and new economic sectors that London needs as it grows</p>
 <p>Functioning</p>	<p>Eg ensuring essential access to premises for deliveries and servicing, effective use of kerb space to support activities in town centres and upgrading utilities under the roads</p>
 <p>Protecting</p>	<p>Eg reducing collisions, particularly for vulnerable users, and helping to ensure that streets are places where people feel secure</p>
 <p>Sustaining</p>	<p>Eg reducing emissions on the road network, supporting greener, cleaner, quieter streets and a healthier, more active city</p>

1.3 TfL and the wider context

The RTF's report is well timed. The approach it advocates for managing the varying demands on our road network complement recent initiatives such as: the publication of the Mayor's new road safety action plan, 'Safe Streets for London'; the Mayor's Vision for Cycling; the ambition that central London should become an Ultra Low Emission Zone by 2020; the Mayor's London Job and Growth Plan; and the Mayor's strategy for increasing housing and supporting Outer London, particularly in those areas affected by the riots of 2011.

The tools and recommendations set out by the RTF provide a coherent framework for managing the delivery of these ambitious plans for London, and engaging boroughs and other stakeholders in the process.

Building on the foundations of the MTS, the emerging London Infrastructure Plan, and TfL's Business Plan, these initiatives (plus others) will combine into a coordinated programme to upgrade the Capital's roads and streets. It is akin to that which has benefited London's Underground and rail networks over the past decade.

1.4 Sustaining investment in London's road network

Everyone living, working, visiting or running a business in London depends on the road network to function in a reliable and effective way. London's continued economic, social and cultural vitality are reliant on the road network being able to keep pace with the growing demands being put upon it. Delivering this upgrade therefore demands a sustained level of investment to support it.

TfL's Business Plan to 2021/22, published in December 2012, doubled the levels of previous planned investment to a new total of around £4bn to deliver significant improvements to London's roads. This investment is, of course, subject to the Government Spending Review, which may impact on the scale and pace of future delivery. But even investment of this scale will not be enough to deliver the full vision of change outlined by the RTF, which identifies the need for substantial investment sustained over a long time period.

RTF: 'A major and sustained programme of investment will be required, at least £30bn over 20 years in addition to basic maintenance and renewals.'

In future therefore, TfL will make a compelling case for further investment in our road network, exploring all opportunities for funding. The valuable direction the RTF has provided will ensure that our case is based on a clear strategy for investment and improvement, and that the benefits to all will be evident. In the following chapters of this report, we set out our proposed approach to taking this work forward.

Chapter 2: RTF – TfL’s response to the challenges facing London

2.1 The road network and current challenges

London’s road network has to work hard. It:

- Supports more than 80 per cent of passenger journeys and more than 90 per cent of freight movements every day
- Has 40 per cent more densely-trafficked routes than any other major conurbation in the UK
- Carries more bus passengers than New York and Paris combined
- Supports an increasing demand for cycling, which already accounts for more than 20 per cent of peak time traffic in central London



As a result, our network is already heavily congested in parts, experiencing as much as 20 per cent of the UK’s total traffic congestion. And with London’s population and economy forecast to grow, our roads are only going to get busier. This means our roads will need to cater for increased demands for bus use, more traffic movement, especially to meet the freight and servicing needs of a growing capital, and a growing appetite for cycling.

At the same time, expectations are rising in terms of what Londoners and businesses expect from our streetscapes and urban realm, demanding:

- High-quality public realm and ‘place-making’ essential to attract new development
- Improved provision for buses, cycling and walking, which represent the most ‘space efficient’ ways of moving people in a densely populated city
- Action to improve air quality to meet increasingly stringent standards and to meet our carbon reduction targets, meaning that we must look to influence both the volumes and types of vehicle traffic on the network, particularly in central London

In spite of the physical interventions and capacity improvements already planned in the TfL Business Plan, we will need to achieve all this on a largely finite road network, often with medieval or Roman origins.

London does not have the wide boulevards of Paris or the extensive grid system of New York at its disposal to reallocate capacity to or from. And it is clear that the public acceptability of any enhancements to the capability of London’s road network – including the creation of new facilities such as tunnels or underpasses to reduce the social and environmental impacts of road traffic – will depend on there being tangible community and business benefits from such enhancements.

Our strategy must, therefore, be to continue to make ever more efficient use of our streets and public spaces; balancing the needs of different types of use in different locations, and providing additional capacity for both ‘movement’ and ‘place’ functions where we can.

2.2 Going from good to better – delivering the TfL Business Plan

We have achieved a lot over the last few years, making significant improvements in the efficiency and reliability of London’s roads that allow better movement of goods and people, including:

- Traffic technology investment, with 1,000 new SCOOT installations
- Reducing disruption from roadworks, traffic collisions and other events, cutting serious and severe disruption by 11 per cent
- Increasing throughput of the Blackwall Tunnel, with a major upgrade and dedicated enforcement measures to reduce disruption from over-height vehicle delays and other incidents
- Delivering major highway improvements, like those at Henlys Corner and Bounds Green on the North Circular
- New cycle superhighways providing safe, direct routes for cyclists



There has also been a sustained programme of investment to create new ‘spaces and places’ on London’s road network. This has been achieved both through direct investment by TfL on the TLRN, and through funding of borough schemes via their Local Implementation Plans (LIPs). Key achievements include:

- Major changes to locations on some of London’s main roads, including Elephant & Castle southern roundabout, Britannia Junction at Camden Town, Kender Triangle, Brixton Road’s central square, Aldgate Circus, Gants Hill, Coulsdon bypass and Upper Street, Islington
- Transforming some of London’s most famous streets, including the diagonal crossing at Oxford Circus, restoring two-way working on Piccadilly, and the groundbreaking ‘shared space’ scheme on Exhibition Road
- Significant improvements to high streets and town centres across the Capital, including Woolwich town centre, Wimbledon town centre, Kingsland High Street, Bexleyheath, Richmond, Woolwich and General Gordon Square, Sydenham High Street, Clapham Junction, Wood Street, Leytonstone town centre and Hornchurch town centre
- Hundreds of small-scale improvements which collectively represent a major upgrade of local public spaces, including St Paul’s Green at St Paul’s Cathedral, Great Queen Street, Russell Square, Byng Place, Gillett Square, Brighton Yard, Jubilee Gardens, Chancery Lane, Strand and Aldwych, Venn Street and Canning Town

We must do more, however. TfL’s Business Plan sets out a range of further measures over the next 10 years, continuing to invest in:

- Our road infrastructure assets, to ensure they are safe and reliable
- Traffic signalling technology that will help us get even more from our limited road space
- Traffic information systems that will allow more drivers to avoid disruptions due to incidents and events on the network, and enable us to better manage our network
- Improved provision for cycling and walking
- Further sustained investment in improving streets and public spaces to support their role as 'living' spaces
- Capacity enhancements at key locations (eg on the Inner Ring Road and in east London) to support improvements to the urban realm and economic development, while helping London move into the future

In addition to the improvements we will make to the main road network of London as the capital's strategic highway authority, we will work closely with the boroughs to fund and support the delivery of schemes benefiting the principal road network and the city's many streets and public spaces. We have welcomed the comments received from the boroughs during the RTF process, on local priorities for investment. These are reflected in part in the schemes set out in Annex A and will be considered further in future discussions.



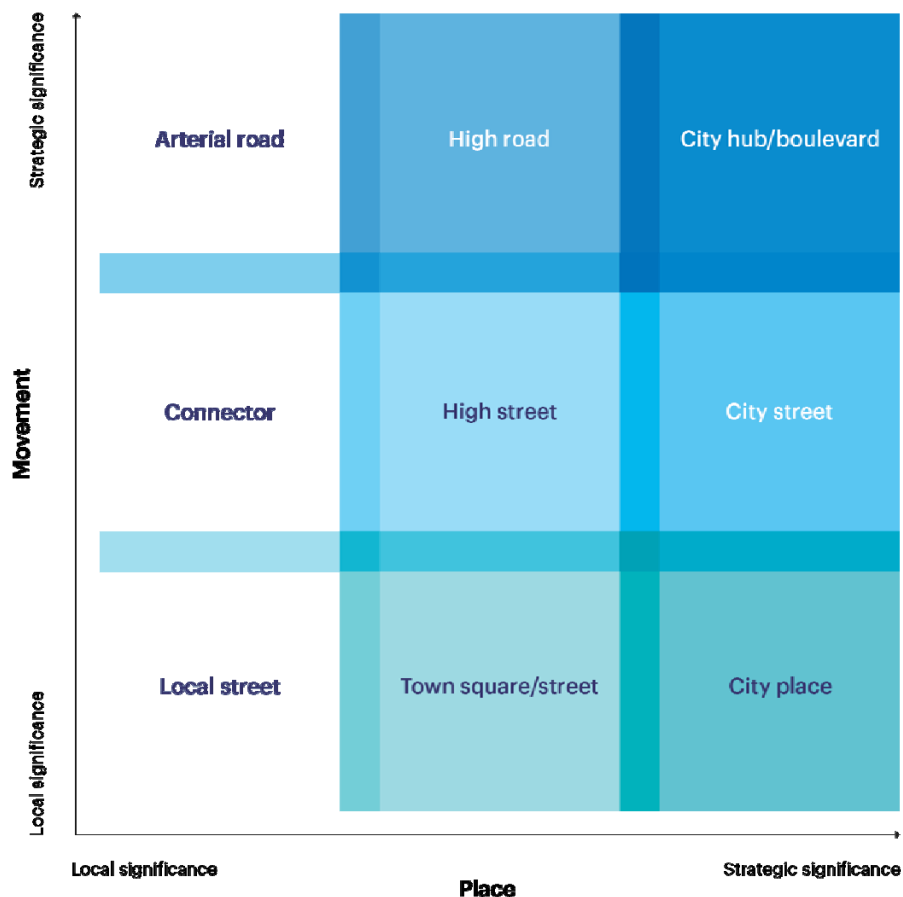
2.3 The RTF's street family

Often new transport schemes result in a win-win for all road users. In other cases, though, there is a need to make choices about how to balance conflicting demands on our road network. We therefore welcome the RTF's clear articulation that the functions that streets and places play can vary in time and space across London, supporting their proposed street family of street-types. This will greatly assist us and the boroughs as we make decisions on the best means of optimising benefits for different road users in different locations.

The street family for London proposed by the RTF comprises nine street-types (see figure 1), according to the balance of 'place' and 'movement' functions they currently perform or could perform in the future. The benefits of this approach is that applying the street-types – in addition to the use of traffic modelling tools – allows us and the boroughs to define more accurately the role of existing streets and places as they are now, or might be in future.

Further work is required to understand fully the application of the street family and to ensure that its 'types' reflect adequately the complexity of London's street environment, including the variety of built heritage and the importance of local character. Nevertheless, we believe the adoption of the street family will play an important role in the future planning and management of London's road network.

Figure 1: The RTF's street family



2.4 New measures for new challenges

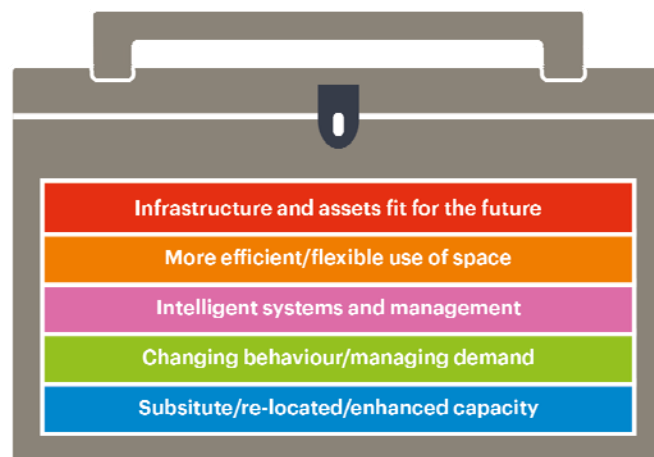
We accept the RTF's challenge that if its vision for London's roads is to be achieved, then we and other agencies need to be willing to adopt a wider range of measures to address the particular needs and functions of the Capital's streets and places.

RTF: 'London needs an expanded 'toolbox' and a greater willingness to use the full range of tools within it. There is no magic wand.'

The RTF's identification of a full range of interventions (set out in the 'toolbox', see figure 2) will enable the most appropriate measures to be used in each location, reflecting different street-types. This could include enhancing the 'liveability' of a high street, or the efficiency of movement on our arterial roads.

Within each compartment of the toolbox the RTF identifies a range of different measures. In section 2.6 we set out in detail our proposals for applying these different measures. In Annex A we also set out our overall investment programme, which will support and complement this approach.

Figure 2: The RTF toolbox and its 'compartments'



2.5 A strategy for the future

If we are to achieve the Mayor's vision of a road network fully fit for the 21st century, which meets the aspirations outlined in section 1.2, we must move away from a 'passive' approach of trying simply to manage the traffic (and other) demands that present themselves on the network. In future, we will need an 'active' approach to traffic and 'road space management' that gets the most from the resources we have and allows us to effectively balance the competing demands for road and public space.

This will include action to:

- Influence the sources of demand, eg through the planning process

- Influence the types of demand, mode choice and times of travel
- Actively manage traffic flows across the whole city with technology that helps keep London moving
- Identify the long-term investment needs of the city, beyond the next 10 years

To do this, we will build on our experience of recent years – in particular the success of TfL’s operations during the London 2012 Olympic and Paralympic Games. The work of the RTF will enable us to set and apply clear priorities and service standards at different locations across the network, and to work with the boroughs to put the new approach in place.

The rest of this chapter outlines where we are ready to put this new approach into action. It explores the different toolbox compartments proposed by the RTF and provides examples of how, when and where we will seek to apply these in London.

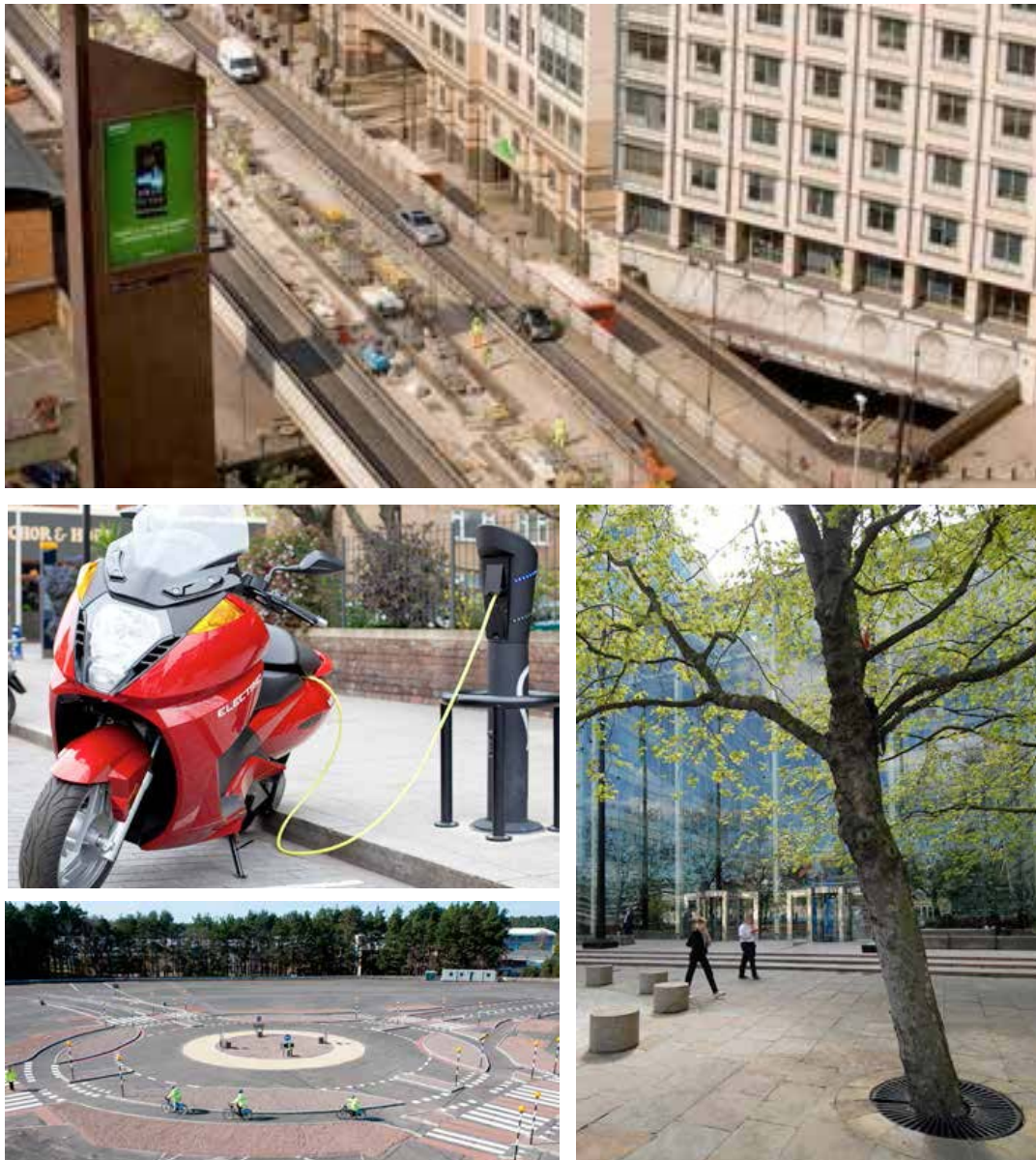
However, we also recognise that to take forward some opportunities flagged by the RTF will take longer, and not everything is on the shelf and ready to go.



2.6 Putting the toolbox into action

2.6.1 **Toolbox compartment 1: Infrastructure and assets fit for the future**

The Capital's roads and bridges must be safe and reliable. TfL is the owner of these assets on London's main roads and we will continually strive to upgrade and make good our roads, bridges, tunnels, traffic lights, pavements and street lighting to ensure they are fit for the future.



Improved asset management

With many of London's tunnels and structures dating from the Victorian age, we will apply life-cycle planning techniques, underpinned by sustained investment, to transform infrastructure built for the horse and cart to withstand today's load-carrying and traffic volume needs. TfL will continue to lead the way with our asset management practices and:

- Apply asset management and value management techniques to ensure a universally high standard across all our assets including roads, bridges, tunnels, street lights, street furniture, bus and river infrastructure (stops, shelters, station, piers etc)
- Use our prioritisation system to enable investment decisions that take account of safety, whole-life costs, and customer satisfaction, working towards PAS 55 Asset Standard as published by BSI British Standards Institution
- Carry out systematic repair and renewal of the 1,800 TLRN structures and 12 tunnels including new intelligent technology installed by 2021/22. This will include substantial refurbishment or full reconstruction of 16 major TLRN structures and five tunnels
- Prioritise investment in maintenance for those structures and other assets most in need of attention, where risks of failure are greatest, and where the most customers will benefit
- Seek efficiencies and minimise disruption by combining asset renewal and replacement with highway improvements
- Continue to remove signs no longer needed and where it is safe to do so, to encourage walking, and support the streets' 'living' functions
- Work with the boroughs to increase participation in the London Highways Alliance Contracts (LoHAC) – a collaborative highway maintenance and improvements scheme contract that offers TfL and its partners the opportunities to drive down costs and provide a seamless customer experience. Savings achieved through the use of LoHAC will allow more schemes to be delivered through LIPs funding
- Develop and enhance the pan-London Traffic Control Maintenance and related Services (TCMS) contract for traffic signals and ancillary equipment to ensure a high level of availability for traffic control equipment through a well-managed maintenance regime

Enhanced safety features

Improving safety for all road users is a priority for the Mayor and TfL, as set out in the recent 'Safe Streets for London' road safety action plan, which aims to achieve a further 40 per cent reduction in the number of KSIs in London by 2020. To enhance safety features we will:

- Identify and treat high-risk locations on the TLRN with engineering solutions, focusing on protecting pedestrians, cyclists and motorcyclists
- Replace old technology safety cameras at approximately 600 locations on the TLRN and borough road networks by the end of 2016, upgrading to digital operation as the existing 'wet film' technology becomes obsolete
- Consider locations on the TLRN and borough road network where average speed cameras may be appropriate depending on their casualty history
- Learn from our current trial of innovative cycle friendly road layouts including 'Dutch-style roundabouts' and low-level traffic signals for cyclists, and to identify, in collaboration with DfT, locations for new layouts in 2014
- Identify new locations for early-start traffic signal technology for cyclists, with implementation in 2014 at sites such as Blackfriars Bridge
- Update, maintain, and make freely available a digital speed limit map of all London's roads, and promote its use with technology developers and manufacturers, so enabling a revolution in intelligent speed technology
- Build on the successful trial involving the installation of 100 blind spot safety mirrors for HGVs at signalised junctions with further delivery as part of standard design of new schemes
- Introduce over-height vehicle detection to protect tunnels and structures at all vulnerable locations by 2016
- Through responsible procurement ensure that all TfL and LoHAC highway contractor and sub-contractor fleet vehicles are cycle friendly, meet the highest environmental standards and that drivers are appropriately trained

21st century roadworks

Roadworks are a major cause of frustration and delay on our roads. London has been leading the way in roadwork management since the launch in 2009 of the Mayor's Code of Conduct for Roadworks. Through this TfL, London Councils and the six major utilities have signed up to specific targets to reduce disruption from roadworks. As a result, in 2012/13, a total of 3,433 days of disruption were avoided through joint working. But we need to go further. TfL will:

- Promote the benefits of Lane Rental charges on London's strategic roads to encourage companies carrying out works to dig up roads at less disruptive

times and minimise the time they spend doing so. Also to increase London-wide permitting, which reduces congestion from roadworks through careful coordination

- Develop the use of smart cameras to monitor roadworks, and enabling a check on the validity of requests for extending permits. This will also help in determining the actual Lane Rental charges. These are planned to be in place by the next financial year

Seek opportunities for the construction of underground 'utility corridors', which are located beneath carriageways and footways and allow engineers to access the utilities using pedestrian entrances situated on the adjacent footway. This removes the need for roadworks at these locations

Innovative materials and kit

The RTF highlights the potential for new road materials and innovative kit. TfL will:

- Continue to reinvest revenue from Lane Rental into the development of innovative technologies such as rapid hardening material and techniques such as 'core and vac' technology, which typically results in faster completion of works and reduces the time that roads are closed
- Make use of newly developed materials where appropriate, and trial if necessary. For example, we will now be specifying Calcium Magnesium Acetate (CMA), with its non-corrosive properties for de-icing specific sections of the road network, to prolong the lifespan of our infrastructure

Future flexibility

Lack of public and road space in London demands we make best use of every inch. Flexible street design can allow for changing use over time. TfL will:

- Adopt the principle of 'future-proof design' wherever possible – that is design and deliver schemes that provide opportunity for easy future upgrades or further improvements, whether by highway improvement or local planning and development
- Work with the boroughs to find opportunities to trial the creation of new public spaces which can change their use over time and be managed through moveable street furniture
- Enable flexible use of road space, through application of TfL's kerbside loading guidance, which optimises the use of the footway for both pedestrians and loading purposes at different times of the day

Basic street improvements

TfL has developed its Better Streets principles, whereby our streets can be improved over time using a holistic highway maintenance approach. In future we will:

- Ensure that, by December 2014, 100 per cent of the TLRN is classified as 'tidy, de-cluttered or relocated or merged', and where all opportunity is taken to combine street furniture in accordance with our Better Streets Strategic Evaluation Framework
- Assess the TLRN in light of the street types with high 'living' aspirations by the end 2014, and implement a subsequent three-year improvement plan
- Prepare a new streetscape guidance document for publication in 2014 to ensure that improvements to London's roads and streets meet appropriate standards that complement the street family
- License trade and highway activity (eg scaffolding and retail signage) to strike an optimum balance between the competing demands for space on the footway
- Enhance the inspection regime to improve the performance of utility companies, particularly to ensure that roads and pavements are reinstated to a high standard 'first time' following any works carried out

Greener Streets

Improve London's environmental performance to enhance its attractiveness as a place to work and live. We will:

- Make our streets greener and more appealing, including new tree planting applying the principle of 'right place, right tree'
- Protect existing trees, shrubs and grassed areas where possible as part of improvements to the road network
- Promote green walls and roofs, including as a requirement in appropriate new developments
- Introduce, by the end of 2016, centrally managed lighting systems that can be dynamically operated to control the on-street lighting levels to suit the location
- Introduce LED and low energy lighting, with 25 per cent of all replacements completed by 2018, including tunnel lighting
- Continue the rollout of ELV traffic signal equipment including LED for all new sites and modernisations
- Fund and work with boroughs to deliver the Mayor's Air Quality Fund, which

will include improvements such as green walls, increased planting, promoting of anti engine-idling campaigns, local green action zones and improved working with schools to reduce the number of 'school runs'

Cleaner vehicles

The Mayor has set out an ambitious agenda for improving the environmental performance of vehicles in London. His proposed Ultra Low Emission Zone aims to have a major impact on cleaner vehicles and is discussed further in toolbox compartment 4. TfL will:

- Incentivise the further development of the electric vehicle market with the new Ultra Low Emission discount for vehicles entering the Congestion Charging zone from summer 2013
- Introduce 120 electric vehicles into our own support fleet and trial hydrogen cars and powered two-wheelers (P2W) by 2016
- Trial new bus technology, including increasing the number of hydrogen buses (from five to eight in 2013) and electric buses which can be charged through using wireless inductive charging
- Actively encourage vehicle manufacturers to bring forward development and promotion of zero-emission taxis
- Continue to transform the emissions performance of our bus fleet by:
 - Increasing the number of hybrids in the fleet to 1,700, of which 600 will be New Bus for London, by 2016
 - Accelerating the uptake of ultra low-emission Euro 6 buses from 2014/15, allowing us to take older, more polluting buses out of service sooner
 - Retrofitting some 900 of our older Euro 3 buses with selective catalytic reduction equipment by 2015 to reduce nitrogen (NOx) emissions
 - Introducing a new Low Emission Zone standard in 2015, applied to TfL buses only. This will mean all TfL buses will meet the Euro 4 standard for NOx and particulate matter (PM)
- Take forward Source London with a private sector partner, to ensure the first London-wide, publicly accessible charge point network has a secure future
- Encourage the use of electric powered two-wheelers (eP2Ws) by continuing to work with the motorcycle industry and providing a network of charge points
- Develop a new Low Emission Vehicle strategy for publication in early 2014
- Outline the next steps in supporting increased uptake of low-emission vehicles in London

2.6.2 Toolbox compartment 2: Making more efficient/flexible use of space

As they grow, modern cities need to constantly rethink their use of street space to ensure that they are maximising the economic, environmental and social benefits they provide. In some situations this means rethinking how people move; in other places it is about rethinking how space is allocated to different uses to improve the quality of life for both communities and road users. Methods to achieve this in London are found in this toolbox compartment, and are complemented by initiatives to manage demand through behaviour change (toolbox compartment 4).



More efficient people movement

Congestion is a blight and can be addressed in part by encouraging the uptake of transport modes that make efficient use of road space, such as the bus (the most efficient), and cycling, walking and P2W. London has already achieved a remarkable nine percentage point drop in the proportion of journeys by car since 2001, but we can do more to encourage efficient travel.

We will benefit bus passengers by:

- Continuing to operate one of the most extensive bus networks in the world, carrying over 2.3 billion passenger journeys a year, and ensuring good access for buses in all areas so that we can provide fast, direct services from stops near people's homes to town centres, stations, and other destinations
- Tackling around 30 'pinch points' on the bus network that affect around 250 routes, which between them carry some three million people daily. We will invest to improve service reliability and efficient access to town centres across London, with programme implementation from 2014
- Supporting high-quality bus priority corridors, particularly where they unlock new development, with a feasibility study to be carried out in 2013

We will deliver the Mayor's Cycling Vision, creating a comfortable and convenient environment for cycling by:

- Upgrading existing Cycle Superhighways and providing new Cycle Superhighway routes including a north-south and east-west axis across the centre of London by 2016
- Working with boroughs to deliver a Central London Cycle Grid with the majority of the Grid in place by 2016
- Working with boroughs to roll out new 'Quietways' across Inner and Outer London, with the first routes in place by the end of 2014

We will ensure walking journeys are encouraged by:

- Expanding Legible London to improve way finding, working with developers and boroughs to achieve the ambition of more than 3,000 signs in place by 2021
- Carrying out a trial in July 2013 to assess the feasibility and impact of issuing Fixed Penalty Notices to businesses and organisations that persist in obstructing the pavement with obstacles such as A-boards
- Engaging with all schools in London to encourage walking and promoting leisure walking to explore London's streets with our regular guided walks in spring, autumn and winter

We will support the use of P2Ws as an efficient use of road space by:

- Encouraging boroughs to replicate TfL's initiative to allow P2Ws access to bus lanes on the borough road network
- Introduce a programme of measures to improve P2W safety, including:
 - Working with P2W stakeholders to develop a P2W Safety Action Plan by autumn 2013
 - Training a further 1,500 P2W riders in safer riding through the TfL-funded Metropolitan Police Motorcycle Safety Team
 - Launching a public awareness campaign for both drivers and P2W riders in summer 2013 to encourage safer driving and riding

Lower speed environment

Following the publication of the Safe Streets for London road safety action plan, TfL will work to make London's roads safer through lower traffic speeds wherever appropriate. We will:

- Continue to fund the roll-out of 20mph zones by boroughs through their LIPs, building on the 400 plus zones that have been funded by TfL and implemented by the boroughs to date
- Trial 20mph speed limits at specific locations on the TLRN, such as the Waterloo Imax roundabout
- Be open to a range of speed limits on main roads in London, including 20mph. Limits relevant to key arterial routes are different to those on routes where people live, work and shop, and we will consider variable speed limits and 20mph limits where appropriate and in line with DfT guidance
- Work with London boroughs, such as Islington, Hackney, Camden and the City of London, which are all seeking to introduce borough-wide 20mph limits on borough roads and on parts of the TLRN, to understand the most effective means of implementation and compliance and the wider application in central London
- Create a Road Fatalities Review Group to bring together road safety experts to learn lessons from fatal and serious collisions 2013 onwards, and develop new and coordinated responses to the issues
- From 2013 trial a Community Roadwatch scheme to help local communities in managing speeding in their neighbourhoods, and to raise awareness of the dangers of excessive speed and anti-social driving

Fun and active streets

As more people and families choose to live in the Capital and its population grows, we need to get the most from our public space, including the roads themselves. Around 4,000 planned events are already accommodated on London's streets every year.

Paris's innovative 'Paris Plage' events or Bogota's weekly cycling Ciclovía, are often cited as examples of how we could do more in London. So we plan to:

- Explore the scope for more informal use of our roads and streets as public spaces with a programme to allow temporary, traffic-free events for public enjoyment in some of London's iconic locations, such as Regent Street in summer and the Embankment. If successful, we will look to manage these as regular events
- Support boroughs to deliver local events requiring the temporary closure of roads or high streets and plan the associated public transport provision
- Look to utilise road closures for public use/enjoyment when roads are closed for other reasons
- Deliver a weekend of Olympic legacy cycling events in August 2013 including a mass participation 'FreeCycle' event in central London and the RideLondon 100 mile event
- Host the final stage of Tour of Britain over a 10km circuit in central London in September 2013, and host the finish of a stage of the Tour de France in July 2014

Providing space for stopping

With tough economic times, it is essential that our town centres and high streets are as vibrant, accessible and inclusive as possible. To encourage this we will:

- Increase cycle parking in town centres, business districts and residential areas to deliver an additional 80,000 cycle parking spaces by 2016
- Deliver attractive, high capacity cycling super hubs at key rail interchanges in London, eg Waterloo and Paddington
- Extend the time people can park on the TLRN to 30 minutes to support stop and shop. Following public consultation the aim is to implement this change in most boroughs by the end of 2013

Re-imagined streets and places

Cities need to evolve to keep pace with the aspirations and needs of today's population. There are a number of locations across London that could benefit from a fundamental redesign and improvement. TfL's Business Plan allocates around £500m to enable the transformation of more than 20 locations. These schemes will address both the way such locations look and feel, and how they cater for the needs of different road users. Interventions will include changes to both the physical and operational design of the locations and will result in safer, more reliable journeys for all customers in more pleasant and easily navigable environments (see Annex A). Highlights include:

- Regeneration of major growth areas such as **Elephant & Castle** will act as a catalyst to replace the northern roundabout with an improved design, along with better pedestrian and cycle facilities and urban realm. The result will be better

public spaces and safer roads, supporting residents' and workers' desire for pleasant, high-quality spaces in which to socialise and spend time

- **Old Street** where the aim is to replace the roundabout, which currently dominates this location, with a new road layout, improved urban realm, interchange and cycle facilities. All helping to transform this location as a centre for new economic activity
- Capitalise on the wider opportunities to improve major rail interchanges, such as **Waterloo**, where major improvements are planned to the road network and public transport interchanges to support redevelopment of Elizabeth House, Shell Centre and the Waterloo station capacity increase
- **Euston Road**, where the arrival of High Speed 2 and the redevelopment of Euston Station creates the opportunity to improve access in the area, decreasing traffic dominance, severance, addressing the urban realm and enhancing pedestrian and cyclist facilities

Re-design of gyratories

Intrusive gyratories increasingly feel out of place in a number of London environments where the emphasis is now shifting to creating attractive places for people to live, work and visit. TfL's programme includes overhauls of several prominent gyratories in London including:

- Wandsworth gyratory, where a new design to cut severance will improve the town centre economy and environment, support new investment and add momentum to the £1bn local regeneration programme. To be completed 2021
- Vauxhall Cross, where there is a need to mitigate the adverse impact of high volumes of traffic through the area as it develops to become a new iconic city quarter, the Vauxhall Nine Elms Battersea (VNEB) area. This will complement the Northern Line Extension and other improvements in supporting 16,000 new homes and up to 25,000 new jobs by 2030. The Vauxhall Cross re-design will be completed by 2017
- Completing feasibility studies of the potential benefits and impacts of also removing gyratories at Stoke Newington, Swiss Cottage, Aldgate and Archway during 2013-15

Better crossings

The RTF calls for an ambitious level of walking and cycling in new inner-city quarters, and improved safety for vulnerable road users. People will only walk more if they feel safe and comfortable in doing so: making it easier for people to cross the road is therefore important. TfL will be improving crossings by:

- Publishing a list of all sites where new crossing points are being considered and all sites where crossing points have been requested on TLRN by late 2014, with a

prioritised implementation plan by early 2015

- Installing 200 Pedestrian Countdowns at traffic signals by April 2014
- Delivering the Better Junctions programme which will address safety at more than 30 key junctions in London. These include Elephant & Castle, Blackfriars and Tower Hill

Informal spaces

The RTF highlights the need for places where children can play and communities interact, the need for wider pavements and more pedestrian space, and the potential benefit of innovative uses of road space in central London. In addition to working with our partners in the boroughs to promote such informal use of space on their local roads, TfL will:

- Support events that make informal use of London's great spaces, for example celebratory events, Regent Street's VIP Shop days, and the Thames Festival
- Fund the redevelopment of key streets, supporting London boroughs' visions for local transformation by creating new boulevards and better public spaces at places such as Tottenham Court Road, Blackfriars Road and Haymarket

2.6.3 **Toolbox compartment 3: Intelligent systems and management**

Intelligent transport systems can greatly enhance our ability to get more out of the road network – improving journey reliability, customer information and targeting priority for the more efficient transport modes. The RTF report rightly highlights the importance of further developing and applying these technologies in managing London's roads and traffic.



Optimised traffic signals

Building on our investment with 1,000 additional SCOOT sites in the run up to the 2012 Olympic and Paralympic Games, we will further invest in state of the art signal technology by:

- Implementing SCOOT at a further 1,500 sites across the network by the end of 2018/19, for 4,500 of London's signals, which is approximately 75 per cent of the total, benefiting both the TLRN and borough roads
- Carrying out further on-street testing of SCOOT for pedestrians and developing cyclist SCOOT by the end of 2018/19. This will enable us to adjust traffic signals in real time, taking into account the number of pedestrians, buses, cyclists and vehicles at a traffic signal, and allowing us to review the impact on emissions
- Further optimising 1,000 traffic signals a year to improve journey reliability and balance the timings for all road users

World-leading real-time traffic management systems

We aim to build on the success of our real-time traffic management systems deployed during the London 2012 Olympic and Paralympic Games, to ensure London is a world leader in this field. TfL will:

- Further enhance the data used to inform our systems telling us when there are problems on the network. By 2016 this will enable even more rapid and effective responses to incidents
- Improve our understanding of how new transport interventions may impact on the network by upgrading our operational modelling capability for all 23 TLRN corridors by April 2015
- Enable real-time network information, by trialling and developing the use of 'intelligent sensors' on the network by end of 2018/19. These will provide a more comprehensive picture of traffic conditions across London, which can then be used to better inform us about the network's operation and management, and our customers through various channels, including social media

More dynamic on-street information

The RTF recommends the use of new technologies, innovation and a more efficient use of road space. TfL will:

- Increase the use of variable message signs (VMS), including mobile VMS, and a range of new fixed sign types, for more effective and dynamic roadside driver information by the end of 2018/19
- Consider the wider application of dynamic parking systems, for example for

coaches in areas of high demand

Effective incident management

Incidents are a key cause of congestion and delay. TfL will:

- Integrate the London Streets Traffic Control Centre (LSTCC) with partner control centre operations by the end of 2014 to enable a fully integrated control system for London's road network
- Improve the functionality of the control rooms to provide greater coverage of the network and increase our capability for responding to incidents on the network. This will also improve real-time traffic information
- Further expand the CCTV network, using smart cameras for automated incident detection and queue alerts by end of 2018/19
- Enhance event planning and management arrangements with the Metropolitan Police Service (MPS) and other key stakeholders, which will improve our response to major events and reduce the impact of delays on the road network by 2013/14
- Encourage customers to report disruption and road defects through social media such as Twitter, mobile apps and online
- Build on the success of the TfL/MPS protocol for re-opening roads following fatal road traffic collisions and agree a new protocol by March 2014 covering all other crimes and incidents where police close the road to traffic
- Create a dedicated 24/7 police unit capable of responding to all incidents that have the potential to seriously disrupt the road network, by April 2014

Strong customer focus

The RTF highlights the importance of improving TfL's customer focus. TfL will:

- Continue to monitor our customers' satisfaction through our regular customer satisfaction and attitudinal surveys to further improve services and delivery
- Launch a new 'mobile first' website in 2013 featuring more detailed live road information, including traffic incidents and roadworks. The information will be easier to access on desktop, tablet and mobile phones
- Develop a new customer-focused strategy and communications campaign in 2013 to explain:
 - TfL's role in managing and enhancing the road network
 - The infrastructure improvements that benefit road users
 - How TfL reinvests net revenue generated from drivers who pay the daily congestion charge or fines
- Publish new sources of traffic data for free use by third-party developers to provide

additional communication channels to stakeholders. Currently this information is published on the London Datastore and includes a wealth of data such as timetables, bus journey routes, accident hot spots, availability of Barclays Cycle Hire etc

- Continue to expand real-time information services to customers through social media, such as Twitter and other mobile communication channels

Congestion hot spot busting

To tackle congestion we will:

- Put in place a programme of integrated local interventions to reduce congestion, including re-shaping junctions, delivered through a Corridor Improvement Programme (CIP) at 150 sites a year up to end of 2021/22
- Implement additional bus and cycle 'priority points' at key locations on the network to improve journey times for these efficient travel modes, from late 2013
- Introduce call-cancel technologies at selected traffic signals across the network. This technology identifies when it is no longer necessary to provide a 'green man' opportunity as pedestrians have already crossed the road or moved away. This will be piloted at two locations and, if successful, will be rolled out at sites along the A24
- Undertake future studies to understand the scope for reducing congestion on the network using new approaches to demand management and/or additional capacity (toolbox compartments 4 and 5)

Better targeted enforcement

Better targeted enforcement where it is most needed will deliver improved compliance with the rules of the road, including tackling behaviours such as illegal parking and failure to obey traffic signs that frustrate road users, delay journeys and increase road risk. Enforcement is proven as an effective driver of behaviour change. Demonstrating that roads are actively managed and enforced can be particularly useful when there is potential conflict between road users and competition for road space. TfL will:

- Prioritise compliance via a coordinated data-driven approach with the police, VOSA and other enforcement authorities ensuring activity is focused on reducing disruption and road risk
- Identify key locations across London where congestion, collisions and antisocial driver behaviour are having a significant impact, and introduce integrated problem solving plans for these locations through 2014, including through:
 - Targeting enforcement activity where disruption and non-compliance is greatest
 - Working to understand and eliminate non-compliance hot spots
 - Ensuring we deal with non-compliance using the most appropriate methods

including education, engagement, prevention and deterrence

- Ensuring TfL-funded enforcement staff work flexibly and are equipped and trained to deal with any issues they encounter on the network, with impact assessed through a 'Comp stat'-style performance management process
- Trialling, by December 2014, a zero-tolerance approach to enforcement at key locations on London's busiest roads to improve traffic flow
- Assess the impact of installing enforcement cameras at the 205 yellow box junctions on the TLRN that are currently unenforceable
- Work with the MPS to establish a single transport and traffic policing command for London's roads by April 2014. The aspiration is to bring together more than 2,000 officers working across London's roads and surface public transport system into a single command structure for the first time, thereby improving safety and reducing disruption
- Work with VOSA and Traffic Commissioners, to enforce against non-compliant, and potentially dangerous, commercial and public service vehicle operators and take proactive action against such operators whose vehicles cause disruption and safety concerns on London's roads

Flexible lanes and management

Flexible management of lanes can be another way to improve road space management and reduce congestion. London benefits from an extensive network of bus lanes with tailored hours and days of operation which demonstrate the flexible use of road space. Moving forward, we will do more and:

- Trial flexible lane management in locations where the use varies significantly through the day (eg between the peak hours), to explore the benefits of new traffic management techniques, such as LED studs to mark different lane uses as is used in the Netherlands to alleviate congestion on their A50 motorway during rush hour
- Work with boroughs to consider where further bus priority measures may be beneficial

2.6.4 **Toolbox compartment 4: Changing behaviour/managing demand**

Recent experience during the London 2012 Olympic and Paralympic Games demonstrated the impact of measures that encouraged people to change their travel behaviour. The Get Ahead of the Games campaign provided targeted information to the travelling public, businesses, and the freight industry on the potential to re-mode, reroute, re-time and reduce journeys.

The results were impressive, with a reduction in traffic levels of up to 10 per cent in central London against normal levels for the time of year, contributing to the efficient operation of the transport system as a whole. The skills and techniques learned from delivering these programmes will be developed to help address continuing transport pressure on all modes of transport.



Re-timing freight

London's economy depends on deliveries arriving at the right place at the right time. By looking afresh at how, where and when deliveries are made in London we can help reduce many of the negative impacts of freight movement and facilitate more efficient journeys. As such, TfL will:

- Work with regulatory authorities such as the Department of Communities and Local Government (DCLG), local planning authorities and traffic commissioners to review and consider possible amendments to planning and operational regulations that could help enable re-timing of freight to allow out of hours delivery outside the morning peak
- Implement up to three night-time delivery and servicing activity pilots to review the range of existing regulations and their applicability, and to embed the lessons learnt from the successful freight programme implemented during the London 2012 Olympic and Paralympic Games. These pilots will assess the feasibility, costs and benefits in 'business as usual' conditions. To report by early 2015
- Build the case and develop proposals for further change in managing freight in London by undertaking a review of existing regulations and incentives governing freight movements by mid 2014
- Improve freight data gathering and modelling to inform future decisions on managing freight in the Capital by the end of 2014
- Undertake a feasibility study working with boroughs and industry to develop proposals for re-timing freight access into central London. For example, by reviewing the impact of possible traffic restrictions, such as daytime or peak period freight restrictions in some areas. To be completed by the end of 2015. This work will complement the development of the Ultra Low Emission Zone for central London

Re-moding freight / services

The RTF recommends the development of freight consolidation models, identifying zones with high potential that could support smarter freight management. TfL will:

- Deliver a campaign promoting freight consolidation initiatives and good practice (such as Regent Street and the London Construction Consolidation Centre) to retail and construction sectors in central London by end of 2014
- Engage with the Port of London Authority, London's planning authorities, relevant suppliers and customers to promote the use of rail and water alternatives by:
 - Identifying suitable facilities and space

- Demonstrating costs and benefits of known examples
- Participate in the EU-funded 'Last Mile LOGistics' (LAMILO) project; delivering a freight consolidation centre in Camden and consolidation activity at Euston Station, with partners including Network Rail, and logistics and major supermarket chains, by mid 2015. The project proposes that goods are delivered to this consolidation centre by rail and delivered to their final destinations by less polluting modes of transport including electric vehicles and cycle freight
- Undertake a pilot commencing in 2013 to demonstrate the potential of logistical information and collaborative ways of working to reduce congestion from the growth of internet shopping, funded by a grant from the Technology Strategy Board. This will aim to reduce the number of vehicle movements through load sharing and promote innovative methods of consolidation and storage to reduce the number of home and personal deliveries
- Undertake further studies needed to improve the management of freight in London including, for example, a comprehensive review of existing knowledge and research with respect to water freight by end of 2014

Smart charging

London led the way in Europe with the introduction of its Congestion Charging zone in 2003. The aim of the charge was to reduce congestion and encourage uptake of less polluting vehicles. The scheme will be continually reviewed to ensure it is up to date in terms of policy and technology. TfL will:

- Introduce the Ultra Low Emissions Discount to the Congestion Charging scheme in July 2013. This will replace the existing discount, ensuring that only the greenest zero or ultra-low emission vehicles driving into the Capital receive a 100 per cent discount. This will spur the use of the cleanest possible vehicles in the Capital
- Undertake a feasibility study during 2013 of the implementation of an Ultra Low Emission Zone by 2020. As part of this work, TfL will consider the role that charging and enforcement can play in achieving the programme objectives
- Undertake a feasibility study to consider future stages of the Low Emission Zone
- Push the national debate on the future means of paying for road infrastructure, whether through subsidiarity of road tax, the potential for a London 'vignette' or tolling new infrastructure
- Consider the use of tolling for new infrastructure

Smart work centres and practices

TfL will:

- Deliver a campaign in 2013 to promote 'flexible working' to London businesses, which will aim to encourage London businesses to change their employment policies and practices (following last summer's Games). This will encourage businesses to better facilitate employees working remotely from home and elsewhere, through changes to employment contracts and investment in the necessary IT and digital communication

Next generation travel demand management schemes

The RTF supports Travel Demand Management (TDM) programmes to encourage 'out of peak' travel, both to reduce demand in the peak periods and to shift people from making shorter journeys by car to cycling and walking. TfL will:

- Use best practice learned during the London 2012 Olympic and Paralympic Games to support a reduction in general vehicle traffic, and disseminate this through our ongoing Business Engagement programme with more than 4,000 of the Capital's businesses
- Identify future opportunities for the tactical use of TDM information that will help customers change their travel behaviour to avoid disruption and inconvenience caused by works to upgrade transport infrastructure (eg Thameslink works at London Bridge station)
- Provide targeted TDM information and customer advice to support new active network management (see below)
- Work in partnership with the car club industry to support its continued expansion. This includes supporting 'car-lite' development, business and stakeholder engagement, marketing and PR support and ongoing research and evaluation
- Deliver TfL's 'cycle to school' partnerships programme to: improve the safety of routes to schools; increase the number of pupils travelling to school and other educational centres by bike; and create a cycling culture, starting from childhood and extending through to adulthood, with the first partnerships to be created in 2013
- Using the planning process, support developments aimed at furthering emerging 'car-lite' lifestyles. This will be supported through the development of best practice advice, pilot projects and support for boroughs

Active network management

A key to the successful operation of London's road network during the London 2012 Olympic and Paralympic Games was the use of smart signalling techniques and

active network management, supported by integrated customer communications across central London. This freed up crucial road space needed for the Olympic Route Network and the overall efficient operation of the road system.

Moving forward, TfL will:

- Use the traffic management capabilities developed for the 2012 Olympics, the enhanced network of new SCOOT sites, and the other tools and technologies in toolbox compartment 3 to give London the ability to manage traffic and demands on the network in real time

Parking policy

The RTF identifies the important role of parking policy. TfL will:

- Work with boroughs through London Councils to encourage appropriate approaches to parking policies while recognising that ultimately these decisions are governed by local priorities
- Ensure that parking policy is fully integrated with intelligent systems and management, which can help reduce the time spent driving around looking for parking spaces
- Produce yearly updates of the Coach Parking Map (for non-scheduled coach services in London), in partnership with the Confederation of Passenger Transport
- Continue to operate the coach hotline, which helps coach drivers who have parking related issues
- Launch a London Tourist Coach Action Plan by autumn 2013, which will address key issues for the tourist coach sector on parking

Land-use planning

The RTF identifies the role of 'car-lite development', advocating spatial planning that reduces the need to travel and presents walking, cycling and public transport as the natural and default choice for people living and working in these areas. TfL will:

- Undertake research to refine our understanding of car-lite development and its application in London
- Complete research into cycle parking standards by the end of 2013, to strengthen the case for more and better provision in new developments
- Work with the GLA to shape the London Plan policy to reflect the Capital's aspirations and potential for car-lite development as the basis of planning decisions

2.6.5 **Toolbox compartment 5: substitute, relocated, or enhanced capacity**

The RTF identifies an ‘urgent need to mitigate the impacts of development and continued growth on traffic and congestion across London.’ TfL will actively consider new opportunities to increase space for ‘living’ functions to benefit London communities and unlock new development areas, as well as space to support sustainable transport modes. It will consider relocated space for motorised traffic to enable this.

A number of schemes are highlighted below, while further investigation and studies are needed in several areas to fully exploit the potential of this toolbox compartment.



Junctions enhancement plan

The RTF calls for a programme of schemes to address main problem junctions on the network and relieve congestion. TfL will:

- Deliver large-scale congestion relief schemes at more complex locations including at Mill Hill Circus on the A1, at the junction of the A243 Leatherhead Road with Rushett Lane at Malden Rushett, on the A40 Acton, and at Fiveways, Croydon, by 2021. See Annex A
- Undertake studies to address remaining sites where congestion for vehicular traffic is not already due to be addressed over the medium to long term
- Undertake a study of the Inner Ring Road, to be completed by end 2014, in recognition of its strategic importance, both in its network function as a traffic distributor and in its 'place-making' role in enabling new development (see section 4.2 for more detail)

New and improved separation, freeing space from traffic impacts, and substitute/re-located capacity

The RTF asserts the need for more radical measures to better balance the competing functions of the road network and to ultimately contribute to its vision of world-class streets, fit for the future. These measures include different forms of suitably located and designed new or substitute infrastructure, such as floating roundabouts for cyclists and pedestrians, high-quality bridges over arterial roads and opportunities for roofing over or tunnelling under existing infrastructure at particular locations. TfL will:

- Establish a rolling research and development programme, the component studies of which will:
 - Review by mid-2014 possible locations for roofing over major roads, to minimise traffic impact, enable development and reduce community severance, especially to reduce community impacts in growth areas
 - Assess the potential for relocating strategic traffic from the surface and free up space for other uses by the end of 2014
 - Assess, by mid 2015, the potential for 'local' re-located space (such as vehicular 'flyunders' or floating roundabouts for cyclists) at particular pinch point locations on the network
- Proactively engage with developers to help promote innovative proposals which provide new public spaces and help support sustainable modes of travel such as the proposed Garden Bridge and Vauxhall Nine Elms Battersea development pedestrian and cycle bridge over the River Thames by mid-2014

Connections to growth areas

TfL will make targeted interventions in priority growth areas to help unlock their potential for new homes and jobs. We will:

- Implement major road schemes to improve conditions for all customers at existing pinch point or problematic locations in (or in proximity to) priority growth areas. These schemes are listed in the annex and, among others, will include:
 - Improvement works in Tooley Street, near to London Bridge station and as part of the wider London Bridge to Bankside growth area, scheduled for completion by the end of 2018
 - Schemes at Old Street and Tower Hill supporting the 7,000 new homes and 70,000 new jobs planned for the surrounding city fringe area
- New river crossings, such as the proposed Silvertown tunnel due to open in 2021 (subject to planning and consents), and a potential crossing at Gallions Reach subject to assessment of options and further consultation
- Create high-quality bus priority schemes and pedestrian and cycling infrastructure to support increasingly popular car-lite lifestyles and provide new residents and workers with reliable, accessible and attractive travel options. These schemes are listed in the annex and include:
 - Supporting high-quality bus priority corridors, particularly where they unlock new development, with a feasibility study to be carried out in 2013
 - The co-funded Connected Croydon programme, to improve pedestrian access and the overall quality of the urban landscape between the metropolitan centre's key interchanges and residential, recreational and commercial (including retail) destinations

This chapter has set out a broad range of 'toolbox' interventions that we and our delivery partners plan to implement in future, and which reflect the aspirations of the RTF report. A comprehensive schedule of these interventions is set out in Annex A.

This is an ambitious programme. Successful delivery will depend on sustained funding, improved delivery capabilities and further improvements to the partnership working between us and our key partners.



Chapter 3 Benefits for London

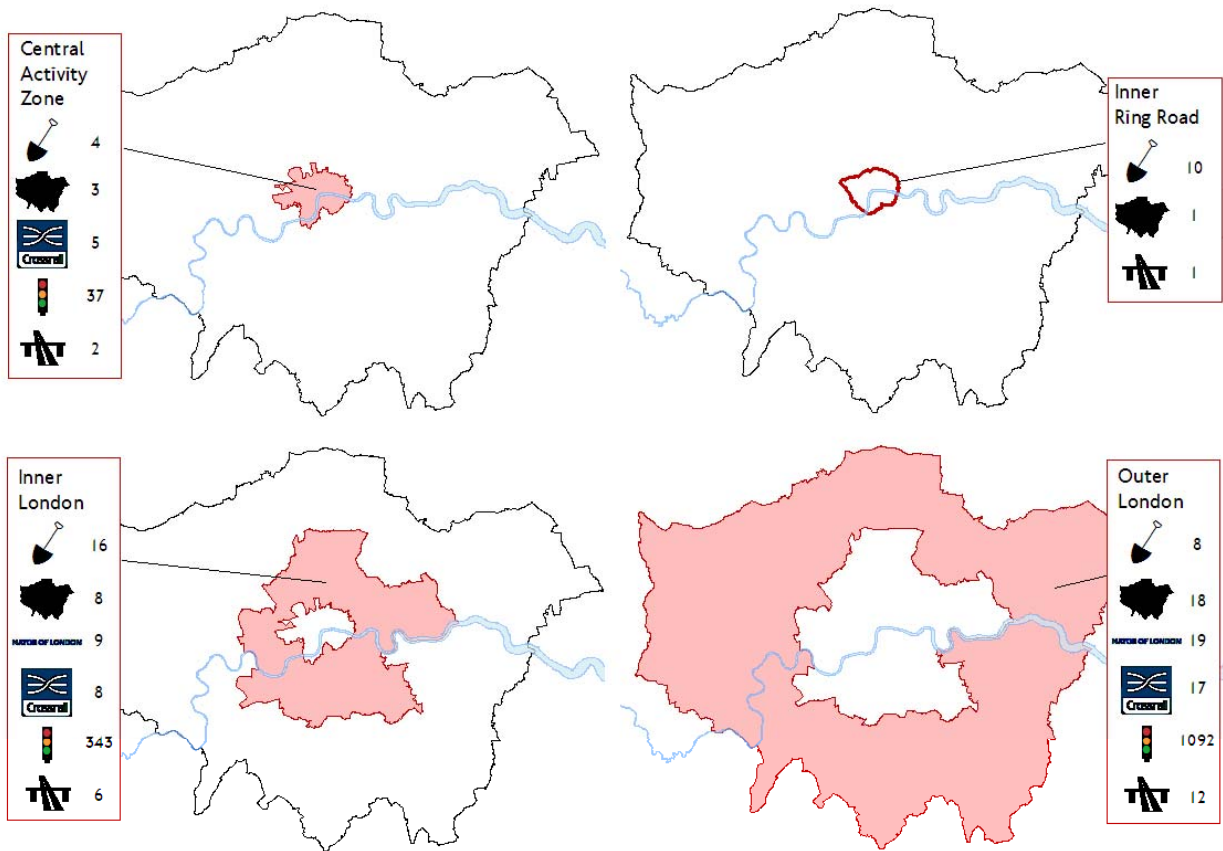
RTF: 'As London enters this new era of change and growth, it is vital that our road network and streets are fit for purpose and perform (better) across a number of functions.'

The RTF defines the different roles that our roads and public spaces perform which include moving, living, unlocking, functioning, protecting and sustaining. In relation to each function, the RTF identifies the outcomes that it believes need to be achieved. In this chapter, we review how far our planned activity up to 2021/22 (detailed in Chapter 2 and Annex A) will deliver progress in achieving these outcomes (listed in **bold** through this section) and ultimately the RTF's vision for London's road network.

In the first instance, however, figure 3 provides an overview of the spatial distribution to planned activity, showing the key activities bringing about the most tangible changes to the network.



Figure 3: Spatial distribution of key activities up to 2021/22

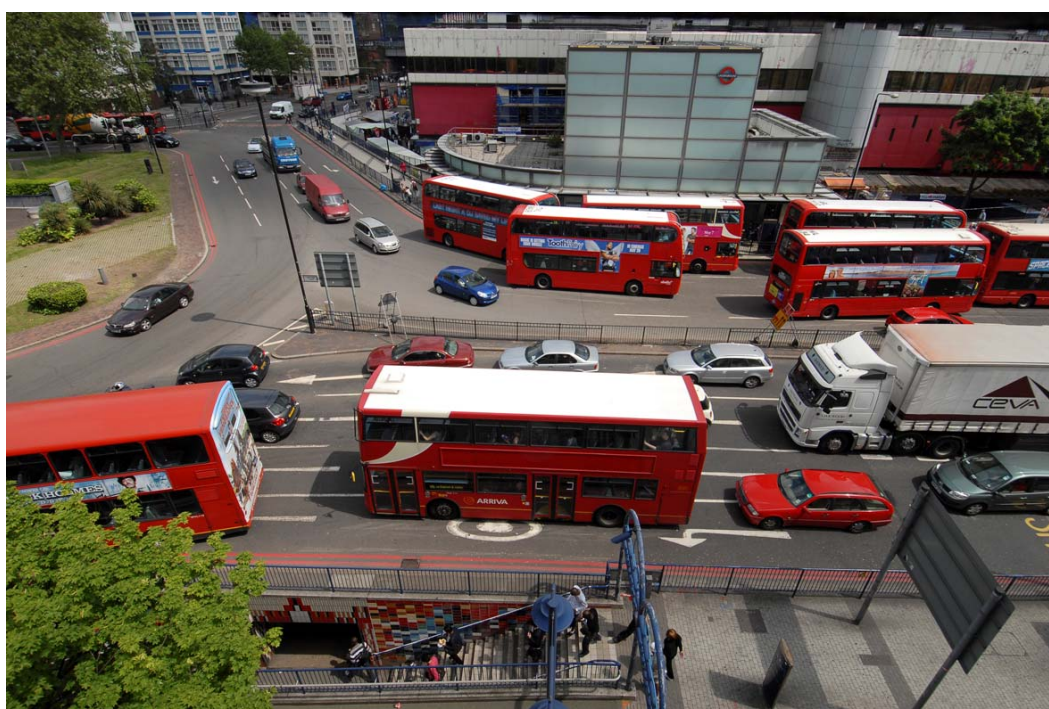


Key	
	TfL major schemes delivered on the TLRN including 're-imagined streets and places' such as Elephant & Castle and Old Street
	LIPS major schemes delivered on borough roads with Local Implementation Plan funding including 're-imagined streets and places' such as Hounslow Town Centre and Holborn Circus
	Mayoral borough schemes providing 're-imagined streets and places' and 'new city quarters' using direct funding opportunities from the GLA such as Outer London Funding and the Riot Recovery Fund (e.g. partial funding of the Connected Croydon programme referred to in toolbox compartment 5)
	Crossrail complementary schemes delivering 're-imagined streets and places' in proximity to new Crossrail stations across both the TLRN and borough road networks including Whitechapel and Bond Street stations
	SCOOT installation at sites across both the TLRN and borough road networks as part of delivering 'optimised traffic signals' across the network [note: some locations still need to be agreed]
	Renewals and replacements of critical bridges, tunnels as part of 'improved asset management' across the TLRN including Hogarth Flyover and Rotherhithe Tunnel

The activity taking place across London will impact on the different road functions and outcomes achieved. Expected progress in these areas is summarised below:

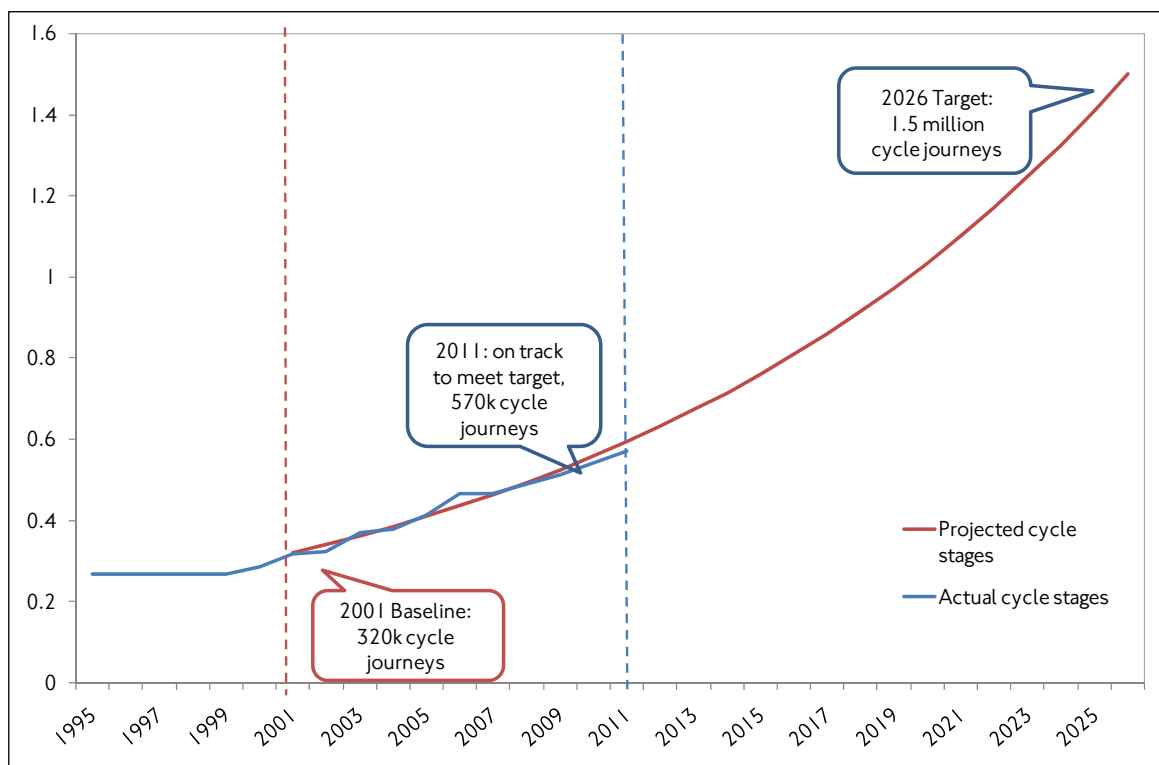
Moving:

- **Assets in state of good repair:** By 2021/22 the percentage of the TLRN in a good state of repair will be greater than today. This will contribute to reduced incidences of unplanned disruption and increased customer satisfaction
- **Network less congested than currently forecast:** In a London where we see improved places, provision for an ever-growing population, and greater travel by sustainable modes, there will be an inevitable squeeze on road space. These pressures will serve to erode the congestion benefits gained from improvements to managing the network and those aimed to tackle current congestion hot spots. As a result, congestion will remain a feature of the network. We will consider what further measures, beyond those outlined in this report, are needed to address this issue (see Chapter 4)
- **Improved journey time reliability on key corridors (and reasonable journey times):** Journey times will become almost universally more reliable. Ninety per cent of average 30-minute vehicle journeys during the AM peak will be completed within 35 minutes in 2021/22. Technology such as pedestrian and cycle SCOOT will also help improve journey time reliability for pedestrians and cyclists
- **Reliable and accessible bus services:** Addressing both current and future bus reliability pinch points will ensure that the reliability of London's buses is maintained at current levels in future years despite the growth in population



- Higher cycling (potentially beyond the Mayor’s current target) and walking mode shares:** By 2021/22 TfL expect to be well on track to achieving the Mayor’s ambitious target for cycling to represent five per cent of the modal share in London by 2025 (see figure 4). In some areas, cycling levels will be even higher. The significant improvements to London’s urban realm and streetscapes should encourage more journeys to be made on foot and further improve the experience of being out and about in London
- Improved environment for walking and cycling:** Wider footways, improvements to pedestrian crossing facilities (including Pedestrian Countdown and SCOOT for pedestrians), targeted reductions to speed limits and public realm enhancements will improve conditions for pedestrians. These will all contribute to the Mayor’s target of one million or more additional walking trips a day by 2031. In addition, the significant funding allocated to delivering the Mayor’s Cycling Vision will transform the experience of cycling in London

Figure 4: Trajectory of cycle journey growth in London and future target





Living:



- Streets that are welcoming and accessible for everyone:** The application of ‘better streets’ guidelines, improved design, and our commitment to ensure that 95 per cent of all bus stops are adapted to all mobility needs by 2016 will help create a more attractive, less cluttered and inclusive environment for all customers
- Revitalised/new city destinations serving large catchment area and reduced severance and increased cohesion of communities:** Roll out of reduced speed limits and improved urban realm design placing sustainable modes of travel (including the bus) at its heart will ensure residents and visitors are able to access and enjoy town centres, high streets and other destinations currently dominated by private vehicular traffic. Several existing gyratories will be removed by 2021/22. There will be more active and flexible streets and places where kids can play



Unlocking:

- Better road connections to support housing and commercial development in major growth areas:** The £300m TfL Growth Fund (of which £170m is assumed for the road network) and TfL’s work with developers will help ensure our investment supports more than 120,000 new homes and over 250,000 new jobs in major growth areas through new connecting roads, the transformation of new city quarters, and re-creating vibrant, accessible and inclusive town centres and high streets

Functioning:



- Efficient access for freight/servicing and good facilities for loading/unloading:** Loading provision and timing controls will better support delivery and servicing activity of local high streets. By 2021/22 our road network will better cater for a greater proportion of delivery and servicing activity

re-timed to out-of-peak and/or undertaken using different modes of transport than that used today

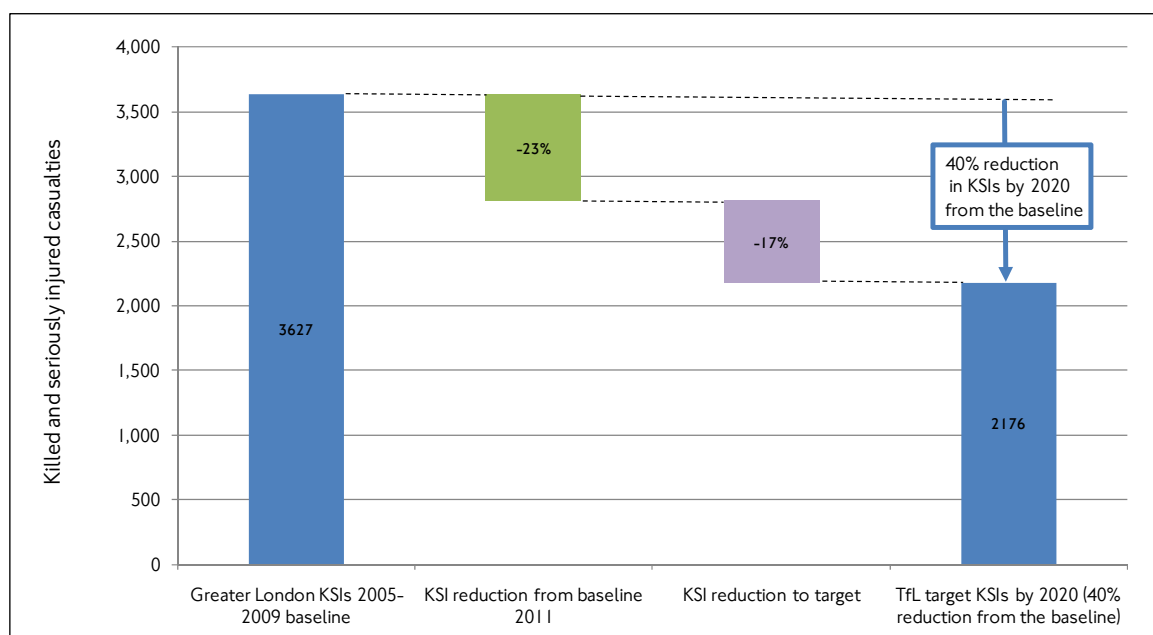
- **Good-quality visitor parking:** appropriate development policies will demand adequate parking for accessible and sustainable travel modes in new developments including 80,000 new cycle parking spaces by 2016
- **Modern utility infrastructure and well-managed works:** The Mayor's roadworks code of conduct will be well established by 2021/22, with a significant reduction in disruption caused by roadworks as a result. Underground 'utility corridors' located beneath carriageways and footways will be more widely spread than now, further reducing network disruption as engineers access the utilities through portals in the footway and removing the need for roadworks

Protecting:

- **Forty per cent reduction in KSIs by 2020:** By 2021/22 London will have achieved its target to reduce the number KSIs on London's roads by 40 per cent (see figure 5). Progress will continue towards achieving the Mayor's ultimate ambition of a London road network free from death and serious injury
- **Improved safety for vulnerable users (pedestrians, cyclists and P2Ws):** Further progress will have been made to reduce the rate of casualties experienced by people walking, cycling and motorcycling in London
- **Streets that feel safe and secure, and reduced street crime:** Incidences of crime will be much reduced in 2021/22. There will be less than eight crimes for every million passenger journeys on or around the bus network (a target due to be surpassed in 2015/16). Targeted enforcement will mean more widespread compliance and more considerate behaviour by users



Figure 5: Trajectory of KSI reductions and target to 2020

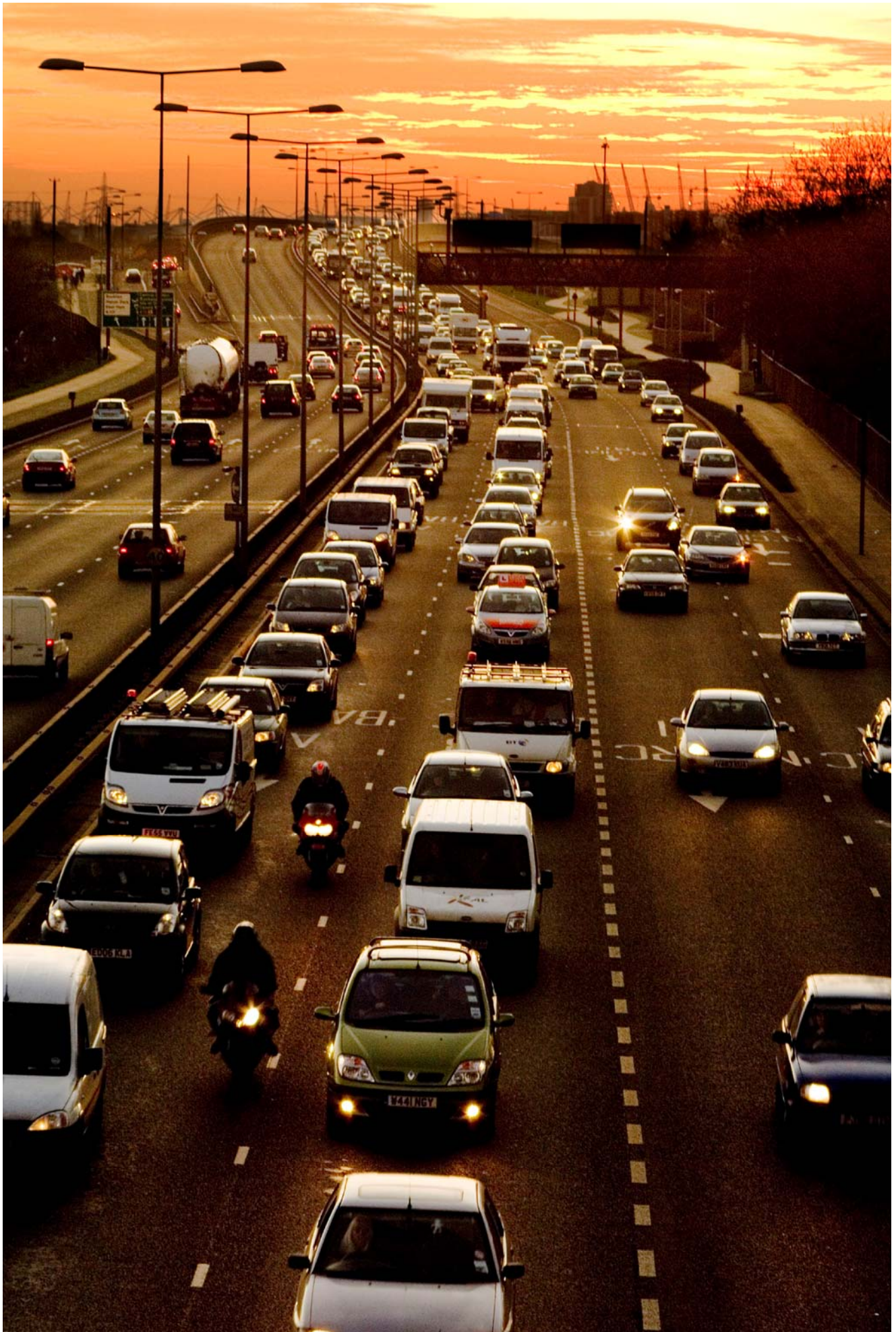


Sustaining:

- **Reduction in per km/person emissions (air pollutants and carbon dioxide):** Having successfully introduced measures such as the Ultra Low Emission Zone, there will be an increased numbers of trips taken by bike and on foot, and more bus journeys on an increasingly 'cleaner' bus fleet. Together these will reduce emissions for each kilometre travelled by customers by 2021/22
- **Reduced impacts of noise:** Noise impacts will be reduced as a result of our and our partners' use of low-noise road surface materials, with quieter fleet and privately owned vehicles common place.
- **More trees and greenery:** The TLRN will be populated with over a thousand more trees than today

This chapter highlights key areas where we will make progress in achieving the RTF's aspirations for London, based on our current planned activity. We recognise, however, that progress may go neither far nor fast enough in all areas, and more is needed. The following chapter outlines the further steps we will take in the light of the RTF's work to develop our strategic approach to managing London's roads.





Chapter 4 Taking the RTF forward

The RTF sets out a number of recommendations for the Mayor and TfL. In this report we have identified those areas where we are ready and prepared to take forward actions to directly address these recommendations. The RTF make clear, however, that individual actions – such as those outlined in relation to the toolbox in Chapter 2 – need to be brought together in a strategic way.

RTF: ‘Only with a combined package of demand management and measures to provide new space for more sustainable modes and maintain vehicular capacity, can the vision for better places (eg gyratory removal), safer streets, more cycling and walking, as well as tackling reliability and congestion be achieved overall.’

In particular, the RTF recommends that TfL and the boroughs adopt and implement the new street family; that we develop our capabilities in terms of managing, modelling and communicating for the road network; and that our activity is brought together in an investment programme for London’s roads over a 20-year timescale. These issues are addressed below.

4.1 Applying the street family

TfL recognises that roads and streets perform multiple functions. Some functions are specific to the place (eg ‘living’), whereas other functions, such as movement, relate to the wider network. The new street family for London is a positive step forward and will aid planners, designers and decision makers in understanding the differing demands on the Capital’s roads and optimising the benefits for road users. However, it should not be taken as over prescriptive; it is intended as an aid to improve development and decision making.

TfL will work with boroughs to take forward the street family approach by:

- Forming a new working group to oversee the development and use of the street family, to include representatives from TfL, RTF and the boroughs
- Seeking to apply the street family for London to the TLRN over the next year. We will work with Boroughs who wish to push ahead with this approach on their networks, in particular the Strategic Road Network (SRN), over a similar period of time, while recognising that other boroughs may want to take longer
- Undertaking an assessment during 2014/15 to identify current performance and ‘gaps’ in levels of service. This will inform priorities for investment
- Updating our guidance including Streetscape Guidance, associated kerbside loading guidance and the London Cycle Design standards

- Working with borough officers, council leaders and Urban Design London (UDL) during 2014 to roll out a series of training days to provide practitioners with the information and tools they need to apply street family principles within their boroughs
- Working with all boroughs and developers to bring forward major schemes and to ensure that the new street-types are adopted over time
- Including the street family framework in our LIP guidance for 2014/15-16/17, and requiring proposals to identify the relevant street-types affected
- Ensuring the boroughs' future LIPs reflect the work of the RTF, including street family for London

Building on existing categories of place and road, such as those contained within the London Plan and Local Development Frameworks, boroughs will be encouraged to adopt the street family for London and apply the street-types to their roads by early 2015. This will help the whole of London to work within a coherent and consistent framework. Going forward, changes on borough or TfL roads that are likely to result in a shift in street-type should, as part of scheme appraisal process, be assessed to ensure that any wider network impacts are fully understood.

As part of the RTF's work, 16 cases studies were undertaken to exemplify how the street-types can be applied in practice. These included locations such as Wellesley Road in Croydon, Elephant & Castle, and Stoke Newington. Our activities outlined in Chapter 2 have flagged where we will be applying toolbox measures to improve such areas, while other case study locations will be further considered as part of our developing delivery programme.



4.2 Developing strategic measures

An increased demand on limited road space means congestion is likely to remain a feature of the network in 2021/22. To address this, we will need to consider new ways of managing demand and providing capacity for living and moving. To understand the scope of change needed and the role of strategic measures, we will begin a series of further studies to understand their application more fully. These will include:

- A study of the Inner Ring Road, to assess its strategic 'moving' function and role in enabling new development
- Assessment of further measures to tackle congestion including increases in junction and link capacity, and enhancements to orbital capacity
- Feasibility studies to assess more radical solutions. For example, physical measures to improve the public realm cater for growth, and increased levels of cycling and pedestrian activity while providing alternative space for vehicle movement
- Assessment of measures to further manage demand in Inner and Outer London, including: 'maximum' application of smarter travel initiatives; time or area-based HGV restrictions; a tougher town centre first higher density, mixed development policy, including parking restraint; and 'car-lite' housing development
- Development of a longer term strategy for delivery and servicing activity in London, potentially complementing work to develop an Ultra Low Emission Zone and including consideration of restrictions on vehicle access to central London

TfL will start these studies immediately, and aim to complete them by late 2015.

4.3 Developing our capabilities

London is a world leader in transport planning, traffic management, technology and engineering. To make further improvements, TfL and the boroughs need to attract the brightest and the best to make sure that we have the right calibre of people who can design and deliver high-quality projects and programmes.

TfL will continue to build on its successful graduate training programme to develop the very best of tomorrow's future transport professionals. Our bespoke graduate training and apprenticeships, both within TfL and LoHAC, will widen the potential for growth, retention and development of our human resources. In future, we also aim to provide placements of staff to support boroughs' delivery of road improvements through shared sponsor, project and operational resources.

We will also take forward our work with other cities in Europe and elsewhere, with whom we can learn new ways of tackling shared problems, such as reconciling use

of public space, influencing travel behaviour, exploring new technologies and applying best practice approaches to the design of new schemes.

TfL has a strong track record in traffic management and both strategic and operational modelling, but we recognise this is a niche area where there is a skill shortage. Continuing to build and retain our capability in this field will be ever more important.

TfL always seeks out opportunities to try new approaches and support innovation. In some cases this will require the relaxation or amendment of regulation or legislation. It is also essential that innovation is not hampered by outdated practices that result from outdated rules and regulations. Examples of how TfL has sought to tackle this issue include our work in trialling innovative new cycling infrastructure (see page 28 – Enhanced Safety Features), and seeking powers from Government to enforce cycle lanes and cyclist Advanced Stop Lines.

In line with the RTF vision, TfL will:

- Develop a new generation of skilled technical operatives, and invest in developing smart network technology and operational modelling capability, to maintain our position as a world leader in this field
- Act as lead employer sponsor for engineering at the new Royal Greenwich University Technical College (UTC). In its first year of operation the UTC will take in 150 Year 10 students and 150 Year 12 students from the Greenwich, Bexley and Lewisham areas
- Build on the recently mobilised LoHAC, which provides an important building block to TfL's ability to deliver the RTF vision for London's roads
- Work with boroughs and developers to develop the means to better communicate and share its plans with stakeholders, and to engage them in discussion, in line with the RTF's emphasis on ensuring effective stakeholder engagement
- Support boroughs wishing to undertake pilots or trials of new approaches through LIP funding, and investigate the potential for setting up an 'innovation pot'
- Challenge existing regulations that are barriers to improving London's roads and streets. We will work with the relevant government departments to allow and agree change, and lobby at both national and European level. To this end, and following the RTF's recommendation, we have developed a list of key regulatory changes needed from national and European government that we will ceaselessly promote

4.4 Working in partnership

TfL works closely with boroughs and developers to deliver schemes both on the TLRN and borough roads. We recognise that TfL's own processes can seem complicated to navigate for external partners and effort needs to be made to improve this situation. Informed by the work of the RTF governance sub group, over the next 12 months, TfL will:

- Review and map existing governance arrangements and make interim 'quick win' improvements to current processes including:
 - Clearer articulation of processes, expected timings for approvals and criteria for decisions and decision makers
 - Setting out the key points-of-contact, account managers and individual senior champions
- Work with boroughs and developers to identify examples of 'efficient' versus 'delayed' schemes to improve future benchmark standards
- Identify processes and people within our existing arrangements, to be accountable for ensuring inclusivity of schemes designed
- Review other local authority processes for best practice, including Planning Performance Agreement (PPA) service level agreements

The part of TfL responsible for roads and streets (Surface Transport) is being reorganised to be more effective in delivery of key strategic outcomes, which align with the vision of the RTF. From 2014 onwards TfL will be able to:

- Ensure high-profile projects are assigned senior TfL sponsors to achieve desired outcomes with a smooth delivery
- Establish a 'one stop shop' on the TfL website by publishing and maintaining details of processes and people involved in scheme delivery including:
 - Processes, timing and criteria for decisions and decision makers
 - Points-of-contact, account managers and champions including those accountable for ensuring inclusivity of schemes
 - Links to all relevant materials and guidance



4.5 A strategy for investing in London's roads

In order to realise the full potential that London's roads and streets can make to the city's economy, a major and sustained programme of investment is needed. A new, strategic approach is not about short-term change, but a long-term approach, which will inform our future investment decisions.

We welcome the RTF's conclusion that the Mayor and Government need to commit to and support a long-term programme of action and investment for London's road and street network, which has also been highlighted by the recent London Finance Commission recommendations. This is as important for the economy and London's competitive strength as having a long-term programme for the Capital's rail networks.

The current TfL Business Plan published in December 2012 set out some £4bn investment in the TfL road network to 2021/22. This significant level of investment represents a major opportunity to upgrade London's road network. In addition, the business plan included funding for other measures supporting delivery of the RTF toolbox, such as funding for borough roads and cleaner vehicles. This means the total investment outlined in this response is £4.7bn. This level of investment would represent a significant increase compared to the last decade (see figure 6) and there are clearly benefits to be realised from a further increase in funding.

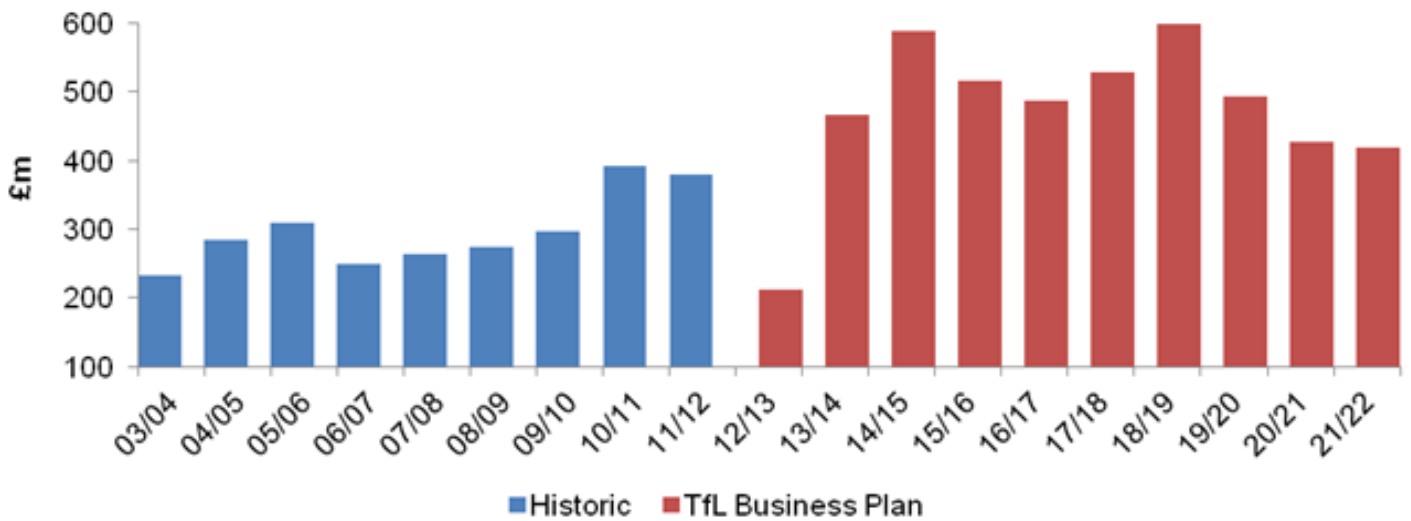
As such, we will articulate the need for, and seek the sustained on-going level of funding necessary, to develop a transformative programme of improvement to London's roads. Ultimately the RTF's vision suggests funding of at least £30bn over the next 20 years, being similar in scale to that which has transformed our public transport networks over the past decade.

While we look to Government to support our case for investing in London's road network, we know too that there is a need across the UK to consider new ways of paying for the investment urgently required for our transport infrastructure.

London must be part of that debate and we welcome the attention drawn to the issue by both the London Finance Commission recommendations regarding self-determined investments in London's own infrastructure and the RTF in highlighting the potential for greater use of existing funding such as developer contributions and the Community infrastructure Levy; alongside new sources of funding, whether through subsidiarity of road tax, the potential for a London vignette or tolling new infrastructure. In taking forward our strategy for investment in London's roads we will explore fully all such options.

Investment in our roads is essential to unlock development and support growth over the next 20 years. TfL and the Mayor will therefore work to identify additional funding sources, both from public and private sources, and will make the case for sustained Government investment in London's road infrastructure.

Figure 6: Past and future investment in London's roads



Specifically, TfL will develop a 20-year programme of investment for London's roads and streets. To take these schemes forward, TfL will seek to maximise alternative sources of funding by undertaking further research into ways that public and private funding can be leveraged, both locally and strategically, while taking into account the recommendations of the London Finance Commission.



Chapter 5 Conclusions

The RTF helpfully highlights the benefits of the interventions that have taken place on London's roads over the past 10 to 15 years. But the RTF also rightly points out that the increased demands being put on London's finite road space requires a more strategic and innovative approach to improving and managing London's roads.

- TfL accepts this conclusion and welcomes the RTF's vision and the new framework for managing the roads in London, particularly in relation to:
 - The new London street family and the steps TfL will take to develop and apply the street-types with its stakeholders
 - Using the toolbox and the measures to address challenges at a street and network level
 - The requirement for TfL to make the case for long-term investment in London's roads
- TfL has outlined the significant investment in London's roads funded through the Business Plan and in light of the RTF report. This investment will start to deliver the RTF vision but more can be done. Hence in the coming years, TfL will:
 - Put in place the means to use the new street family
 - Continue to improve the skills and capabilities of the professional staff designing, improving and managing London's roads
 - Make the case for continued funding for London's roads
- We will work in the long-term to develop the recommendations in the RTF report, particularly by:
 - Developing an overarching strategy for investing in and managing London's roads
 - Working closely with boroughs and other stakeholders as recommended by the RTF to ensure that the strategy gains widespread acceptance in the Capital