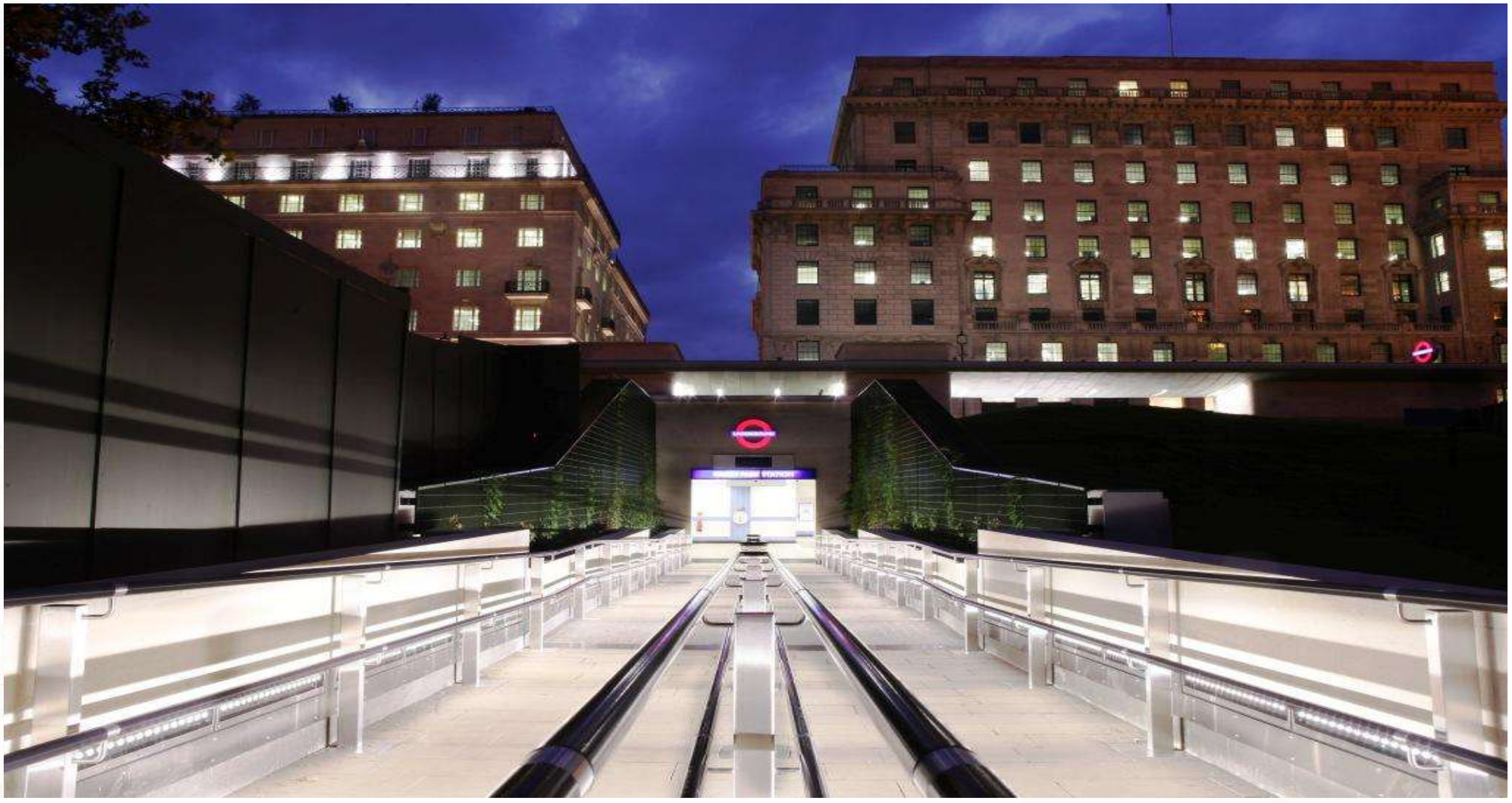


Central London
Sub-regional transport plan – 2012 update

MAYOR OF LONDON

Transport for London

Contents

1. Introduction

Publication of the sub-regional transport plans in November 2010 reflected significant collaboration and joint work between TfL boroughs, sub-regional partnerships and London Councils as well as a range of other stakeholders.

It is now just over a year since the plans were published. The sub-regional process is an ongoing programme, enabling close working with boroughs to address strategic issues, progress medium-longer term priorities and also respond to changing circumstances.

This document, together with its counterparts for the other sub-regions, is intended to be an 'addendum' to the original plan – providing a snapshot of the latest situation and very much rooted in the ongoing collaboration.

An update was considered useful to allow a number of developments to be incorporated, and to bring the plans up to date in a number of respects.

Firstly, it provides an opportunity to report on the implementation of funded transport schemes and progress with other schemes.

Secondly, this update allows developments in other, related, policy areas to be incorporated in the plans. These support a renewed emphasis on facilitating sustainable growth. This is the principal aim of the new National Planning Policy Framework which the Government announced earlier this year. It is also integral to the vision that drives the London Plan, which was adopted in July 2011.

Thirdly, by allowing the latest modelling and analysis to be incorporated the update allows the definition of the challenges to be refined.

Fourthly, the update also allows progress made across the central sub-region e.g., through borough LIPs and through the sub-regional Panels, to be taken account of.

Over the past year there have been some notable successes for London's transport system, many of them on the national and TfL rail networks. The Secretary of State's recent announcement on High Speed 2 marks an important milestone for a project which offers enormous potential to strengthen London's ability to generate economic growth in the future. Ensuring there is adequate capacity on the central London transport network manage demand generated by HS2 will be essential.

The initial stage of the Thameslink project was completed in December 2011. This increases morning peak seat capacity between Blackfriars and King's Cross St Pancras by 17%. Meanwhile, the continuing upgrades to the Tube network will deliver significant benefit to the region.

TfL has continued to work with the boroughs to keep the bus network up to date and improve reliability. 150 hybrid buses have been introduced in 2011 and there will be 300 in service by the end of 2012. A new innovative real time countdown system has now been rolled out across the network, providing timings via the internet, it is the largest service of its kind anywhere in the world. TfL has also recently introduced a new bus for London, further adding to a bus service which is of the highest quality since records began.

Other progress includes the Government's announcements of support for the extension of the Northern Line to Battersea and to renew the safeguarding of the Chelsea – Hackney route in 2014. This will provides an opportunity to ensure a future scheme best serves future needs as currently perceived.

Meanwhile, increasing walking and cycling in London remains critical, with significant potential in central London for the transfer of short public transport trips and after rail trips to these modes. A higher mode share for these sustainable options can reduce pressure on other networks as well as improving people's health and quality of life.

With the growth which is forecast in London it is vital that every effort is made to manage roads and public spaces effectively. It is important that we continue to deliver good quality urban realm. This increases walking and cycling, increases access to public transport, regenerates town centres, and often helps to harnesses third party funding so that we can deliver more for our money.

TfL will work with boroughs in the sub-region to ensure that the long term needs of key corridors and places are balanced, to achieve win-wins where possible, or to make choices about which objectives to prioritise. This approach can be continue to be explored with boroughs in the central region over the coming year.

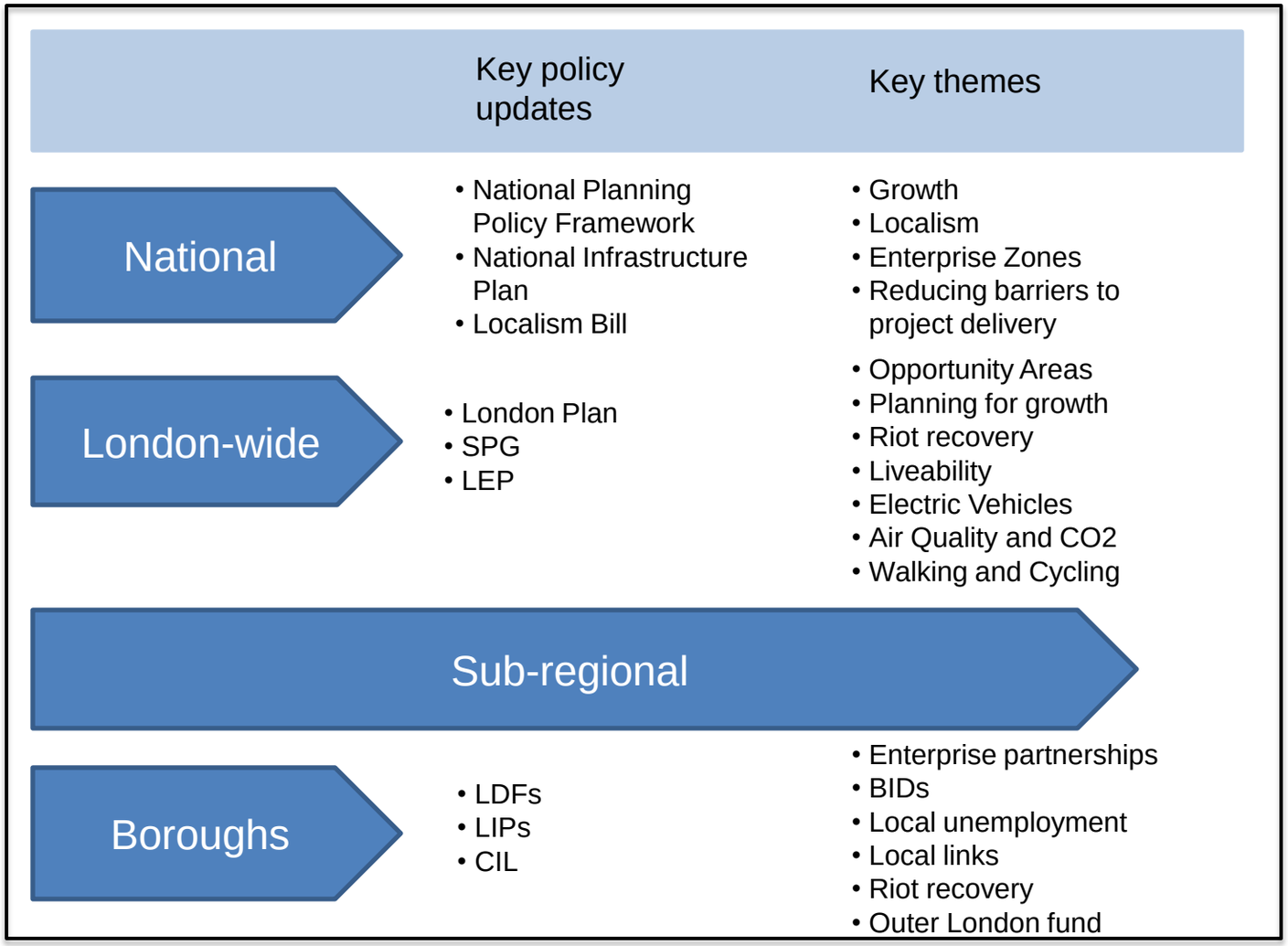
While the financial context remains constrained, it is vital that TfL and the boroughs look beyond the current Business Plan timeframes and continue to plan and address the challenges that a growing population brings. In fact rather than diminishing the importance of this, the difficult economic situation makes this all the more important, for a reason that the Chancellor has made clear - investment in transport infrastructure will play a vital role in stimulating future economic growth.

The experience gained of working through the sub-regional panels and the benefits of the latest sub-regional transport modelling which TfL has undertaken are also incorporated. All this has enabled a better understanding of the outstanding transport challenges facing the central sub-region and to refresh views as to how to these could best be met.

The central sub-regional panel will discuss this draft update with you and agree the next steps. I would welcome engagement and comments on the content and process so that together we can continue to plan this great city and ensure that the central sub-region fulfils its potential.

Peter Hendy
March 2012

2. Context



National level
The increased level of concern over the state of the world economy, and the heightened focus on economic growth, is reflected in a number of policies.

The Chancellor has published a National Infrastructure Plan that the Government hopes will help stimulate economic growth and this includes support for the Northern Line Extension subject to a developer being in place by April 2013.

Funding for the scheme will be sought from the private sector in the form of developer contributions and business rates if the area is made into an Enterprise Zone as is being discussed with government. TfL is also working with the London boroughs of Wandsworth and Lambeth and government to explore mechanisms for financing the scheme.
TfL is also working closely with HS2 and the DfT to fully understand the impacts of the High Speed 2 scheme on London and ensure appropriate mitigation is in place.

The new draft National Planning Policy Framework ("NPPF") abolishes much national planning guidance and in an effort to unlock development adopts a 'presumption in favour of sustainable development', which is aimed at reducing barriers to project delivery. It is unclear what the outcomes will be in the sub-region but transport policy will need to be responsive to changing needs.

The Localism Bill was given Royal Assent on 15 November 2011, becoming an Act. This Bill is intended to shift power from central government back into the hands of individuals, communities and councils.

The health agenda has also increased in prominence, making issues like emissions from transport ever more important.

Regional level
The publication and adoption of the new London Plan, with its emphasis on high-quality growth, collaboration with delivery partners, and fostering localism, confirms that Opportunity Areas will be the focus of growth in London. In central London, there are 14 Opportunity Areas, but in contrast to other regions, growth will in fact be more evenly distributed and not simply concentrated in Opportunity Areas. Planning will need to take account of this more widely distributed growth.

Other Mayoral documents, including Supplementary Planning Guidance also raise transport needs.

This focus on the economy does not mean other outcomes are not important. In fact, the events of this summer in which rioting broke out in many areas of the capital and in other cities in the UK mean that the role of transport in facilitating social inclusion and providing access to employment and other opportunities will be scrutinised more closely than ever. In the sub-region this may mean a redoubled emphasis on ensuring that the urban realm facilitates walking, cycling and a sense of local pride.

The Mayor is setting up a London-wide Community Infrastructure Levy (CIL). CIL will be paid by most new development in Greater London to help capture value of developments for schemes to address growth impacts.

Sub-regional level
A key driver of this update is the issue of how growth across London is planned for and the particular challenges in central London in this regard. The scale of the growth to be accommodated is clear from the London Plan and boroughs' aspirations in their LDFs and added impetus has been provided with the NPPF and the National Infrastructure Plan. Central London will need to play a key role in supporting and driving this growth – but it must be ensured that this growth is sustainable – and that the quality of life for Londoners is maintained and enhanced.

Ensuring that growth is not constrained by inadequate transport supply and that sustainable travel options become an increasing focus should be one of the principal objectives of the ongoing work in the sub-region.

Borough level
The context of the Local Development Framework's (LDFs) and Local Implementation Plans (LIPs) published by the central London boroughs is also critical.

A significant achievement since the SRTP's publication has been that nearly all LIPs in the central sub-region have been submitted by boroughs and approved by the Mayor.

In order to ensure that economic growth does not come at an unacceptable cost to the environment and people's quality of life, this update also seeks to encourage sustainable travel patterns and different ways of thinking about growth and how to embed different behaviour and mode shares.

In terms of new funding sources, boroughs also have the opportunity to introduce borough CILs to meet local needs.

3. Progress report

3. Progress report: 2011 year in review

The Panels

The central London sub-regional Panel met every two months throughout 2011, bringing together borough heads of transport, TfL representatives, Central London Forward and other stakeholders.

The Panel, chaired by central London sub-regional Ambassador Alex Williams, discussed a variety of topics in 2011 and had many lively and interesting debates on some of the key transport issues facing central London.

These included:

- The road network, including the management of buses
- Reference Case analysis from the Central London sub-regional model
- High Speed 2
- Air quality
- The Northern line extension
- HLOS 2 priorities
- Central London termini surveys
- Cumulative impacts of growth
- The London and South East Route Utilisation Strategy
- Local Implementation Plans
- Cycling in central London
- Accessibility Implementation Plan

The Panels provide a forum in which to openly discuss many issues facing central London and the debates have helped inform this updated Plan.

The Panels were also a good platform to share TfL information and news, as well as developments in borough policies

2012 will see a continuation of this work and there are already many topics to discuss, building on the good work and relationships formed during 2011.

Progress in 2011

Over the past year there has been important progress with the implementation of schemes featured in the initial sub-regional transport plans. Those of particular significance to the central sub-region are shown on the map overleaf.

There has been progress in a range of areas including capacity and accessibility schemes on the public transport system and a wide range of initiatives that will help improve the sustainability of the network.

These include the implementation of Phases 3 and 4 of the Low Emissions Zone, a New Bus for London, improvements to the urban realm (which also help improve the accessibility of the network) such as schemes along Grand Union Canal, Exhibition Road, Piccadilly 2-way system and Russell Square and schemes to encourage walking and cycling.

Following the Congestion Relief Pilot at Waterloo station in October there was a 6% net increase in walking for journeys to and from Waterloo and a 16% net increase for other walking journeys (aside from those to and from Waterloo).

The introduction of an all new train fleet on the Victoria Line and the introduction of new rolling stock on the Metropolitan line have boosted capacity on TfL rail systems, with significant benefits in the central sub-region.

The tube closures programme was well managed in 2011, and the launch of the Tube Upgrade Plan microsite helped ensure travellers were informed of planned track and station closures.

The Network Operating Strategy, released for consultation to boroughs and other stakeholders in May 2011, sets out measures including traffic signal timing adjustments, further application of SCOOT, lane rental and permitting schemes, and better computerised management of the network through improved interactive technologies.

The Accessibility implementation Plan was published in March 2012 and the physical accessibility improvements in the last year cover various modes, including step-free access at Green Park station. Urban realm schemes such as Cheapside and Piccadilly, deliver physical improvements for all modal users while also improving the urban realm.

There was also significant progress in making the bus system more accessible, over half of the 19,500 bus stops in London now meet all three of the accessibility criteria agreed by TfL and the boroughs. This figure is over 70% for boroughs in the central sub-region (for both the TLRN and borough roads).

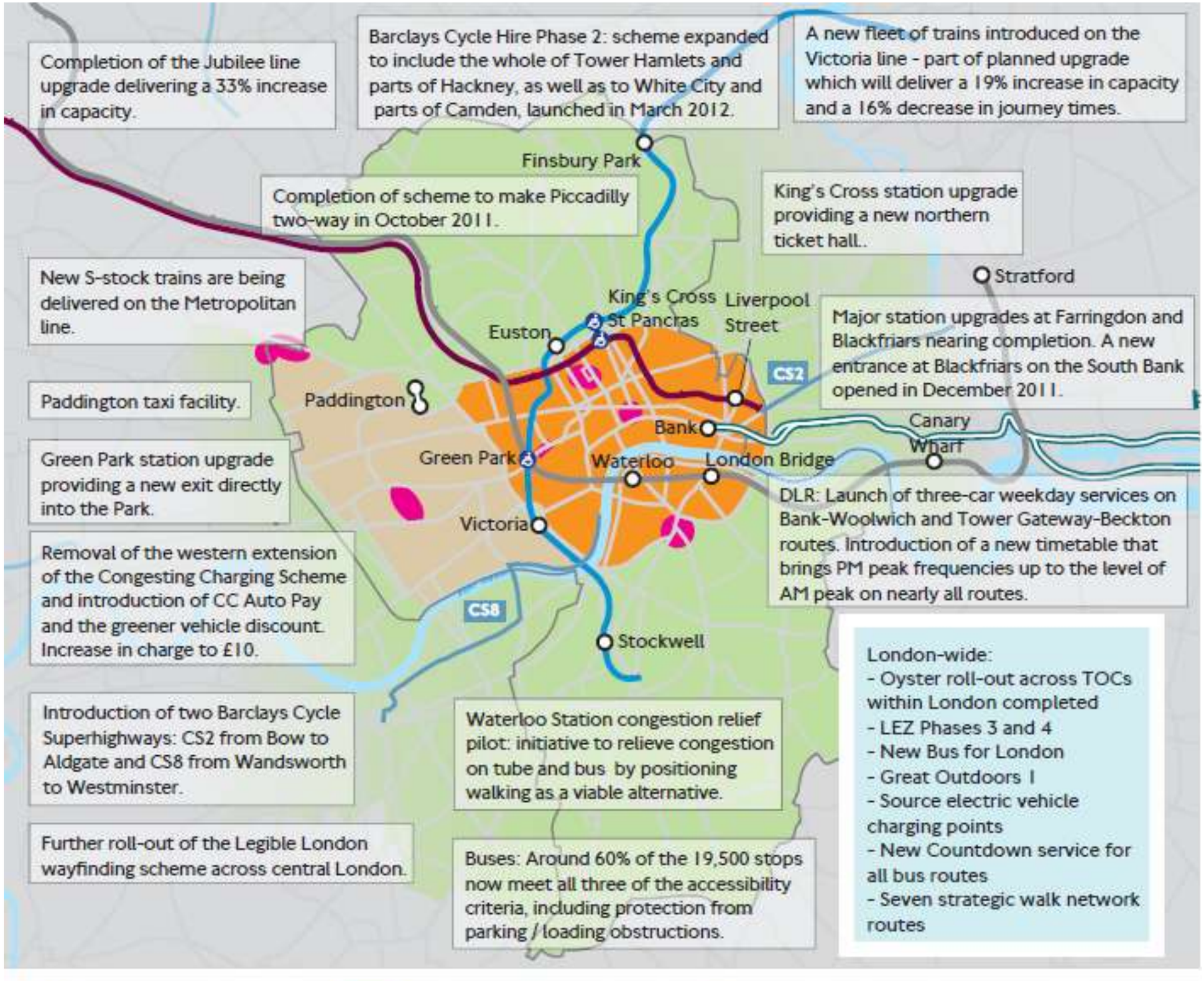
There have been several significant bus service enhancements in the central sub-region over the last year or so including increased frequencies on routes 15, 18 and 25 and their conversion to double-deck operation, as well as extra capacity on the 135 and increased frequencies on the 343. Hybrid buses have been introduced on route 94 and the RV1 route is now currently the only hydrogen bus fleet in the UK and the largest currently in Europe.

Bus information has increased particularly sharply following the introduction of real time information provided by iBus.

TfL funding with borough support has allowed the Walk London Network (nee Strategic Walk Network) of seven pan-London walk routes, six of which are, in part, in the central sub-region, to complete on time and budget for the 2012 Games and Diamond Jubilee.

These schemes and more are presented on the map overleaf.

3. Progress report: Year in review



3. Progress report: committed schemes

London Underground

Victoria Line - new timetable to be introduced in 2013 - route core will have 33trains per hour (tph) capability.

Northern Line - Upgrade is on schedule for 2014 completion. New cab based signalling - core sections will have the capability to run 24tph, an increase of 20%.

Works have commenced on Victoria Station Upgrade, and planning towards TWA Order application for Bank congestion relief scheme continues.

Sub surface lines - New walk-through trains with air conditioning are being introduced are due to be fully in service on these lines by 2016. A signalling upgrade on the District line, set for 2018 will deliver a further 14% uplift in capacity.

National Rail schemes

Thameslink

Three contracts for London Bridge for the track, signalling and station redevelopment at London Bridge have been awarded.

A 1200 vehicle fleet of Siemens trains is being procured for Thameslink which will facilitate commencement of metro style services in 2018.

Buses

During 2012 further diesel hybrid buses will be introduced into the bus fleet and by the end of the year there will be 300 in service. These are expected to yield savings of around 30% in fuel use, and emission levels, compared to standard diesels and a reduction in noise.

Cycling

The Mayor and TfL announced funding to help develop cycling improvements along the Barclays Cycle Superhighways including parking and training. Meanwhile, eight new Cycle Superhighways will open by 2015 and the Barclay's Cycle Hire scheme will be extended eastwards.

Four other delivery priorities have been identified to 2015:

• Working with Biking Boroughs to unlock cycle potential in inner and outer London
• Reducing the number of cyclists killed and seriously injured across London, including targeted improvements at collision hotspots and urgent action to improve cycle HGV safety.
• Improving the cycling experience in London, including improved road maintenance regimes, wayfinding and cycle routes
• Harnessing excitement about the Olympics, including local Greenways; a walking and cycling incentives scheme and a large-scale active travel programme for the Games and beyond.

Walking

TfL funding with borough support has allowed the Walk London network of seven walking routes to complete on time for the 2012 Games and Diamond Jubilee. The Jubilee Walkway and Jubilee Greenway routes both pass through the central sub-region and attract millions of users per year. TfL data highlights for leisure walking opportunities support people to consequently undertake more utility (everyday) walking. TfL aims to work with the boroughs through LIP to support and maintain usage of this network now that physical improvements to the routes are complete.

There have been three key walking routes completed in the central area and another five are being delivered by or in 12/13 which are: Cheapside; Euston to St Pancras; Wilcoxs Road; and Portobello Road & Square.

With the Legible London base map now complete and available for use, TfL and the boroughs are engaged in a significant expansion of the system on-street. – including hoardings on construction sites. As well as the signs on-street, TfL and partners are working to expand the reach of the system. LUL stations and London bus shelters have transferred to Legible London mapping for customer information through a business as usual process. TfL is also working with TOCS to install Legible London maps across London's suburban rail stations.

There is also an opportunity to harness momentum from the Olympics, including local Greenways; a walking incentives scheme; and a large-scale active travel programme for the Games and beyond so that improved levels of walking can be maintained

Urban realm

Inextricably linked to walking is the need to improve the urban realm. There is a raft of urban realm schemes across the region that are set to improve public space, this includes Britannia Junction , Angel town centre, Tottenham Court Road/Gower St, St Pauls and Elephant & Castle to be delivered between the start of this year and 2014.

Accessibility

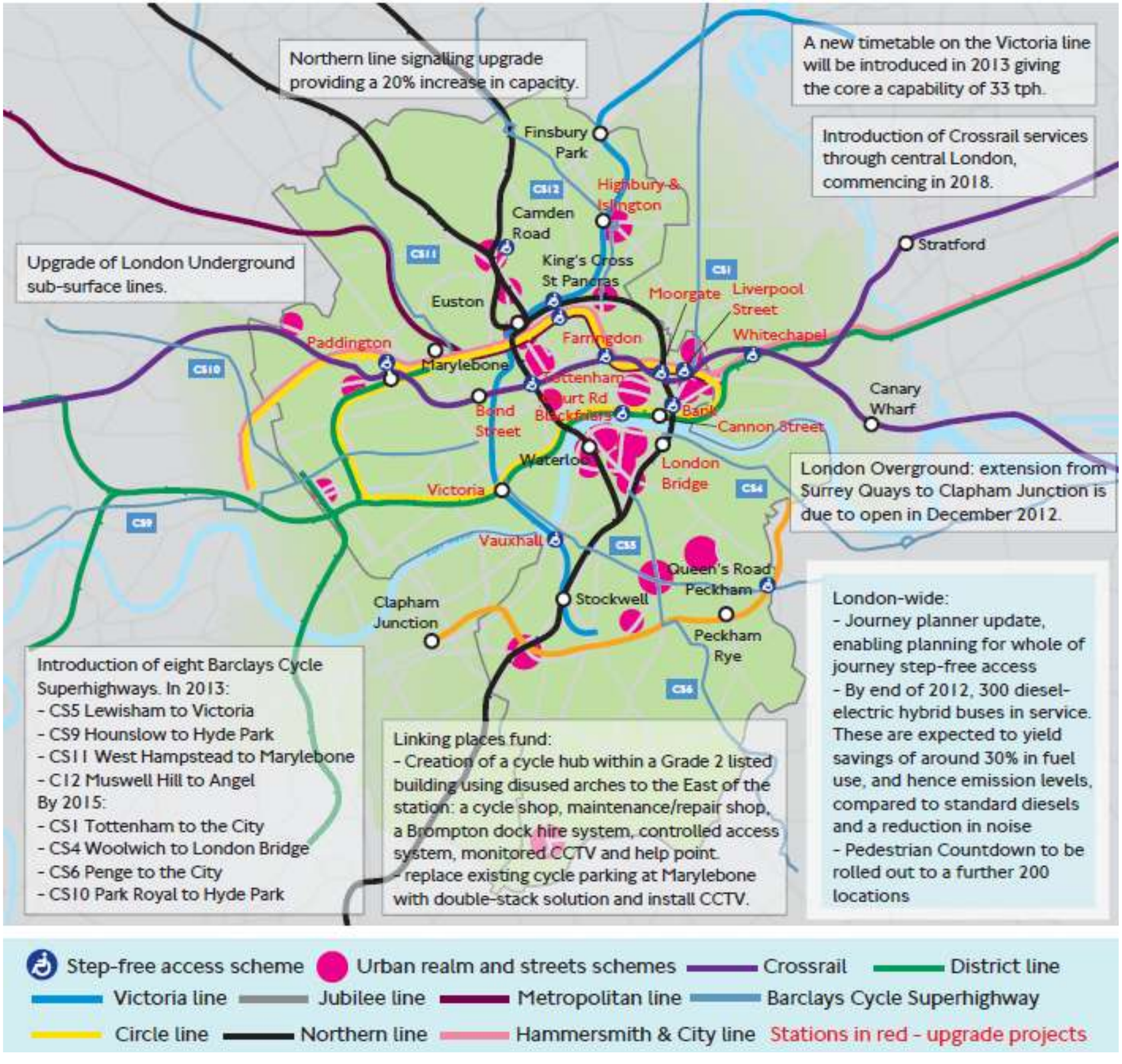
TfL is continuing to develop Journey Planner based on feedback from users and best practice. The Journey Planner is being updated to enable customers to plan journeys with step-free access, not only from street to platform, but throughout the whole journey, including from platform to train. This will significantly improve Journey Planner for those who require step-free access throughout a journey. Furthermore, Journey Planner will feature the additional capability to re-route journeys based on the availability of accessibility related infrastructure. For example, if the lifts at a certain station are out of service, then Journey Planner will be able to re-route the journey to the nearest step-free station.

These improvements are illustrated overleaf.

But despite the major levels of investment, a number of challenges remain for central London specifically and across the sub-regions overall. It is therefore important that – despite the current financial constraints –potential additional options to address the key challenges and plan for the longer term to ensure growth within the sub-region is sustainable are explored.

NB need to ensure comprehensive and central focused.

3. Progress report: further committed schemes



4. Reviewing the transport challenges

Sub-regional challenges	
	Reducing public transport crowding and improving reliability
	Supporting growth areas and regeneration
	Ensuring capacity at rail stations and efficient onward distribution
	Improving the urban realm and promoting walking
	Managing different demands on streets
	Improving air quality
London-wide challenges	
	Improving air quality to meet and exceed legal requirements and ensure health benefits for Londoners
	Transforming the role of cycling and walking in the sub-region
	Meeting CO2 targets

Introduction

As the previous section showed, progress on delivery of many of the schemes and projects identified to help meet central London's transport challenges has been considerable.

This section reviews these challenges. In many cases this is informed by improvements to TfL's modelling and analysis capability made during 2011.

Sub-regional challenges remain a key focus but this further analysis and review of progress against MTS challenges set out in Travel in London 4 have highlighted some growing pressures and need for further action in the medium-longer term across a number of London-wide challenges to which the central sub-region must play its part in responding.

Growth – the underlying challenge

London is set to experience significant growth in both population and employment over the coming years, of which a relatively significant proportion is to be accommodated in the central London sub-region. This growth will place ever increasing demands on the transport network, which must be planned for and managed.

The latest London Plan forecasts show that central London's population will grow from 1.3m to around 1.6m by 2031. Employment growth will be spread across the sub-region , with an additional 450,000 jobs.

The year-on-year rate of growth in bus passenger journeys continued to grow at around 0.5 – 0.7% per quarter in 2011. Buses are able to respond to crowding issues dynamically through incremental changes to the bus network. The outlook is for no net increase in bus km's despite the fact that demand is expected to continue to increase

Meanwhile, Underground passenger journeys decreased by 10 percent in aggregate during the recession, but growth had recovered strongly to pre-recessionary levels of around 6 per cent year on year by September 2010.

Despite the recession, there is nothing to suggest that the pressures identified are likely to abate. Indeed looking ahead the projections indicate significant pressures as population and employment growth continue and the additional capacity delivered by the Business Plan commitments is filled, and the efficiencies achievable from the road network are maximised.

Overview of challenges

The specific sub-regional challenges identified for the central sub-region remain of critical importance and are key to this plan.

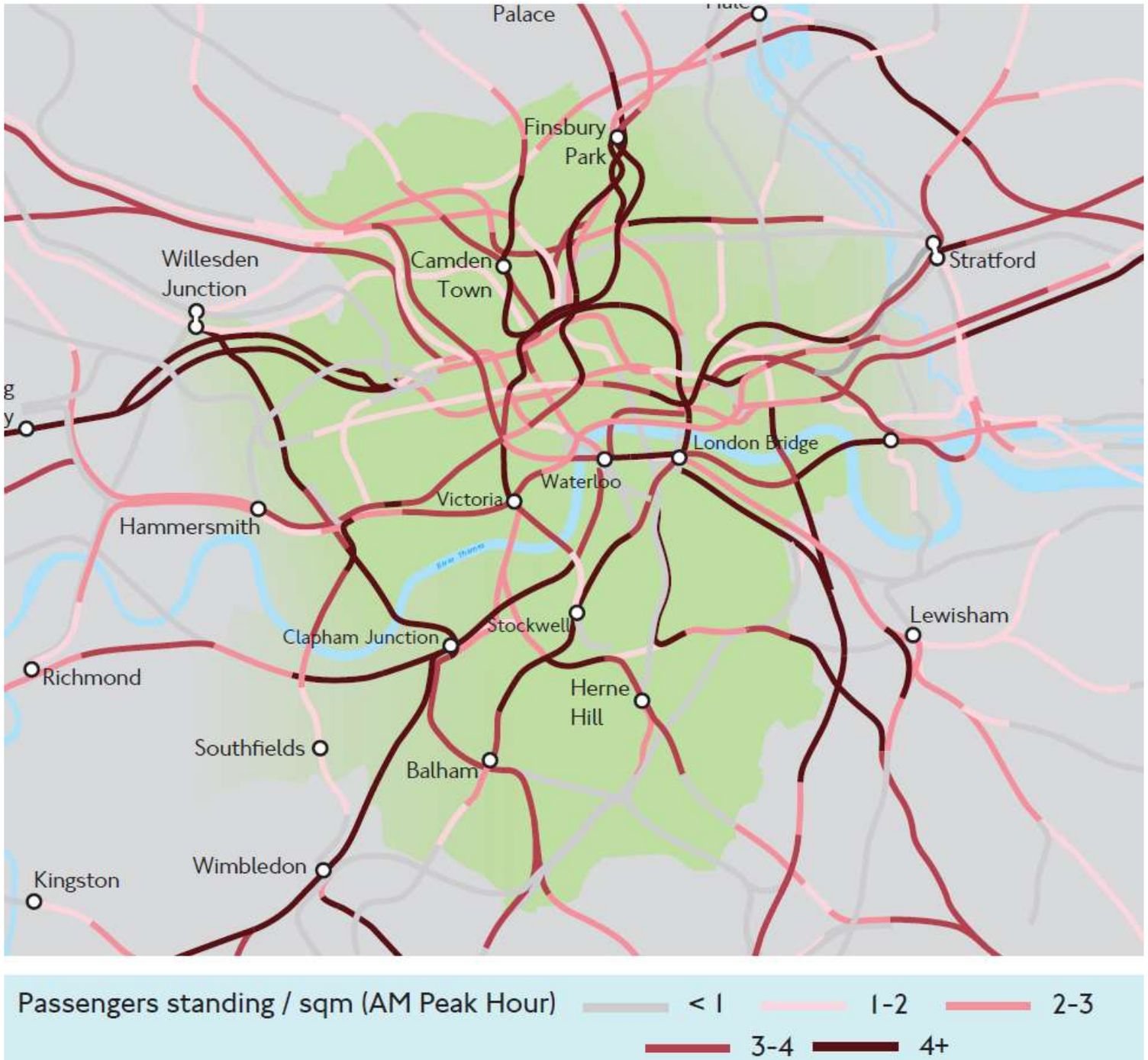
In addition, the London-wide challenges of reducing emissions, and achieving the targets for - and desired outcomes from - an increase in the mode share of cycling and walking all require concerted action at the sub-regional level.

This results in a number of key challenges and there is clearly some overlap between the sub-regional challenges identified for central London and the London-wide challenges that all regions must strive to meet.

The following pages consider these a little further.

4. Central London's transport challenges: key points

Rail and Underground crowding in 2031, with currently committed investment



Reducing public transport crowding and improving reliability

Public transport crowding will continue to be a problem in central London in the long-term, with 'reference case' testing indicating that in 2031, crowding is a particular issue on lines into central London from the north-east e.g., Finsbury Park to King's Cross and on the Northern line through the City.

Ensuring capacity at rail stations and efficient onward distribution

With national rail arrivals in to central London during the AM peak set to increase around 25% by 2026, ensuring the efficient movement of passengers to their final destination will be critical. Work undertaken by TfL suggests that many stations will have capacity issues over the next twenty years. A list of priority stations is set out later in the document.

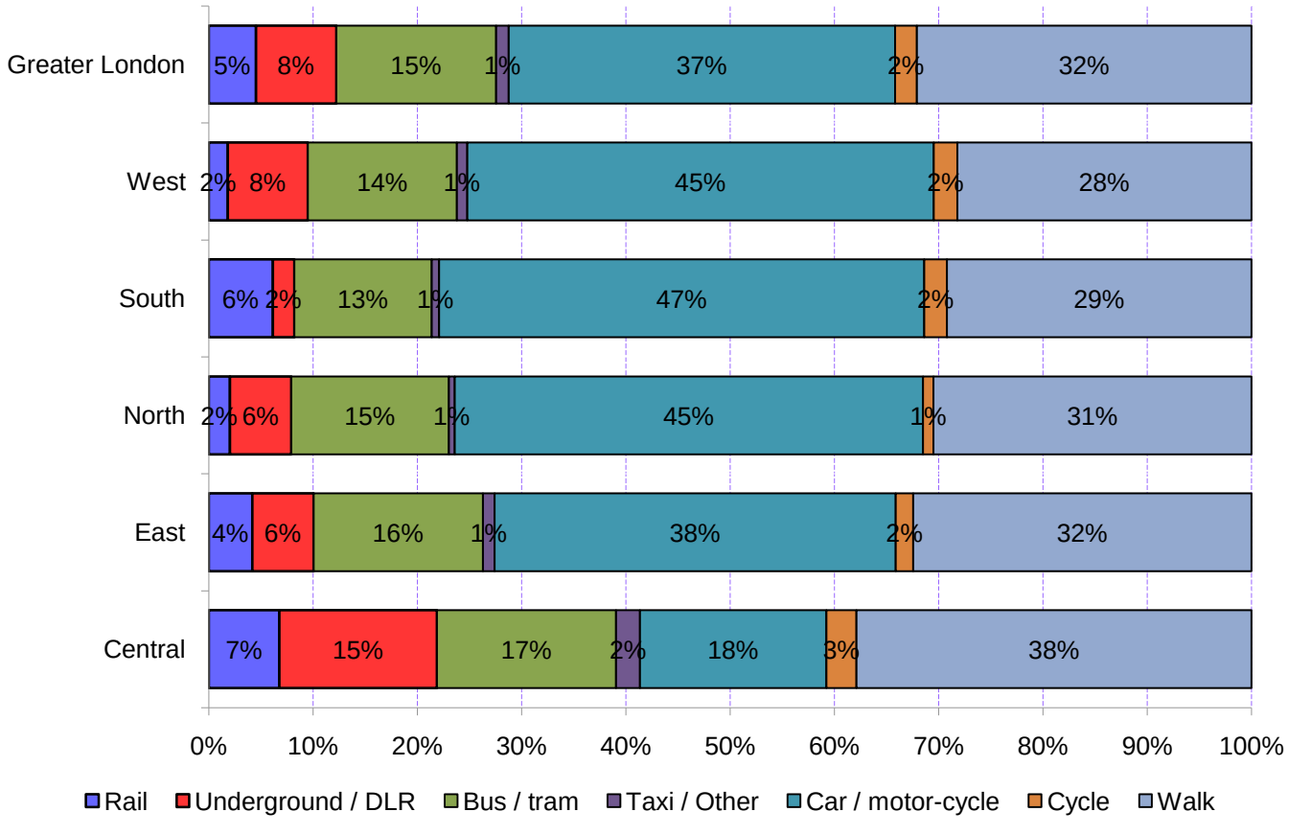
Supporting growth areas and regeneration

With large population and employment growth and 14 Opportunity Areas in the region, managing the demands and maximising the benefits this will generate is key. TfL is currently undertaking analysis to understand the cumulative impacts of growth in central London.

The Opportunity Areas themselves are expected to generate at least 160,000 more jobs and 40,000 new homes.

4. Central London's transport challenges: key points

London mode shares



Delivering mode shift

1. 'Natural increase arising from growth in population & employment

1. London's population and workforce are expected to grow between 2006 and 2031. We could assume that the same proportion of these new trips would be cycled / walked as at present, leading to 'natural growth' in active travel in terms of absolute numbers of cycling and walking trips.

2. Mode shift amongst existing travellers

2. It will also be necessary to achieve mode shift to walking for 'existing' trips so that, in aggregate, trips currently made by another mode are cycled or walked in future.

3. Higher mode share in new trips from growth in population & employment

3. We will also need to deliver a higher mode share for active travel for new trips and in growth areas than current levels. The scope for this will depend on the characteristics and location of the new trips, the demographics of the trip makers and the interventions put in place.

Improving the urban realm and promoting walking

Walking mode share in central London is high, relative to other regions, and surveys undertaken at termini suggest that 36% of onward journeys are walked (for comparison, 40% are via the Underground), nevertheless, to help reduce crowding on public transport and improve people's health and quality of life, more walking and an improved urban realm are a key ambition of the region.

Transforming the role of cycling and walking in the sub-region

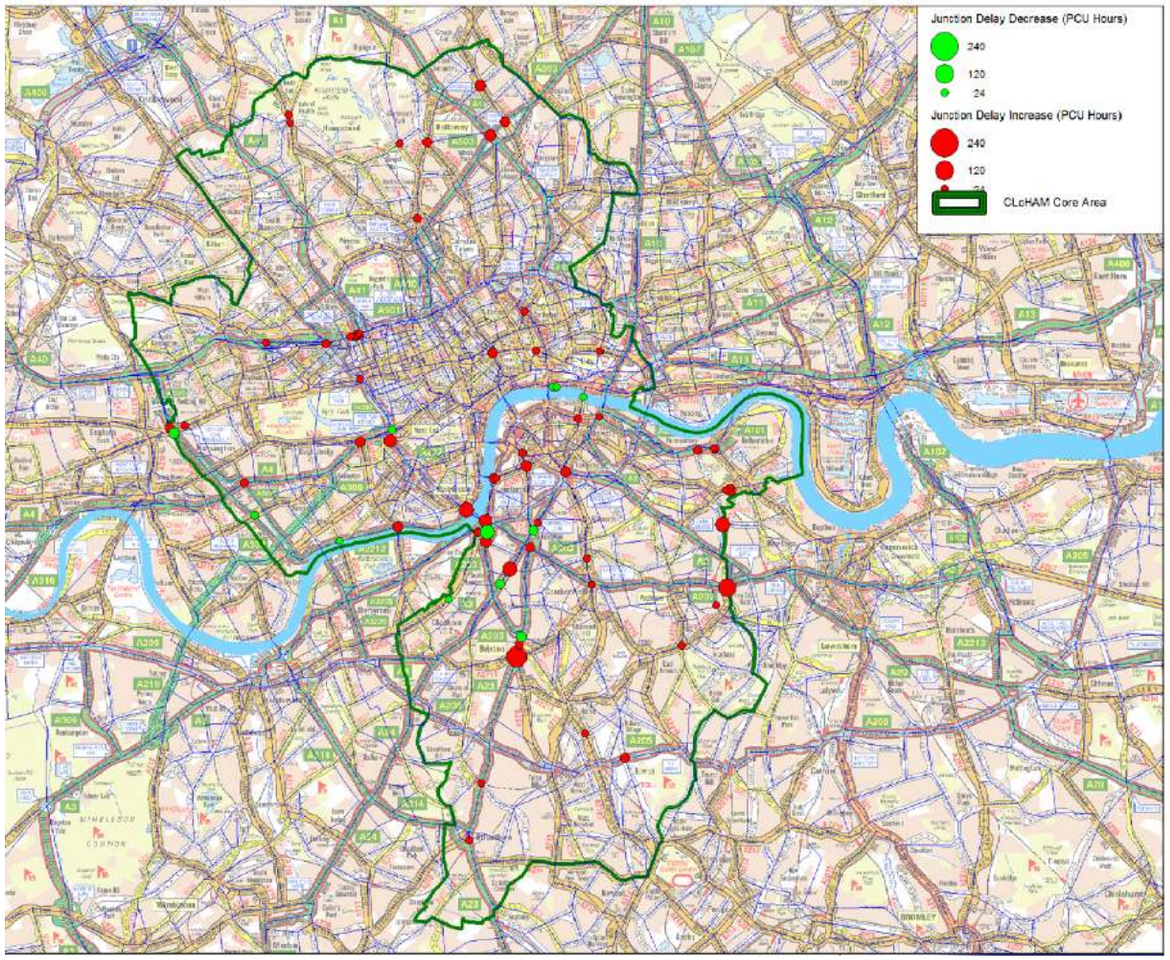
There has been significant progress over the last year or so, but further investment and initiatives are required to meet a five per cent cycle mode share and a 25 per cent walking mode share target London-wide by 2031. For walking this equates to an extra 1.1m walk trips per day across London.

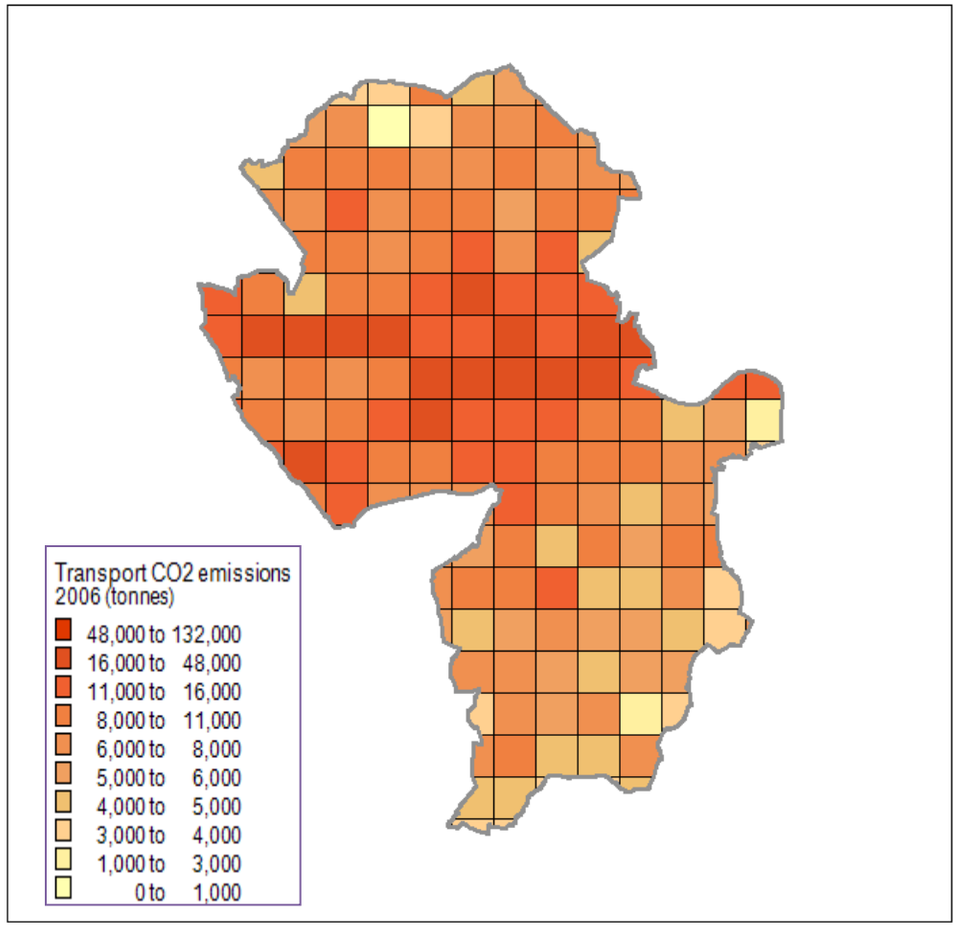
While growth in population is assumed to bring with it a corresponding increase in the absolute number of walking and cycling trips wherever possible it will also be necessary to achieve further mode shift towards walking so that in future trips that would otherwise be made by another mode are cycled or walked.

One of the key ways of delivering a change in mode share in the sub-region will be to ensuring that the proportion of new trips which are made by active modes is greater than the current average (both by existing and new travellers). The scope for this will depend on the characteristics and location of the new trips, the demographics of the trip-makers and the effectiveness and reach of interventions put in place. Each borough will have their own approach, but coordinating between boroughs will help maximise their effectiveness .

4. Central London's transport challenges: key points

CLoHAM AM peak hour change in PCU Hour Junction Delay (2009-2031)





Managing different demands on streets

Traffic volumes have been falling in London over the past decade, and this fall has been greatest in central London (c. 20% down). Falling traffic reflects a combination of demand management (e.g. congestion charging/parking policies), better public transport alternatives, the recent recession and (most pertinently) the deterrent effect of reduced effective road network capacity.

Looking to 2031, forecasts suggest that car usage could increase, and congestion will continue to cause issues in the region – particularly acute south of the river.

The major junction delay increases are concentrated in the area bounded by the river between Vauxhall Bridge and Tower Bridge, extending via Elephant & Castle, Camberwell and Brixton. The other notable concentration is along the north-south axis between Rotherhithe (in the northern part of Southwark) and New Cross Gate. In comparison the north of the region has relatively few affected junctions and these are relatively minor.

This change in congestion is consistent with the concentration of Opportunity Areas and Areas of Intensification in the central sub-region where the majority of population and employment growth is forecast.

Meeting CO2 targets

The Mayor, through TfL and working with other agencies has committed to deliver the required contribution from ground-based transport to achieve a 60% reduction in London's CO_2 emissions by 2025 from a 1990 base. While encouraging a greater use of sustainable modes will play an important role, driving the uptake of cleaner vehicle technology will be critical.

Improving air quality to meet and exceed legal requirements and ensure health benefits for Londoners

Although the reference case measures are likely to achieve both MTS objectives and legal EU limits for particulate (PM) emissions in the short to medium term, NO_x emissions will not be reduced enough to meet either MTS objectives or EU limits. In order for the EU limit value for NO_2 to be met everywhere in London, NO_x emissions within London would need to be over 80%lower in 2015 than current projections.

Across London, exceedence of NO_2 emissions limits will occur primarily along major roads and around Heathrow Airport.

Furthermore, it will be important to continue to reduce PM emissions, with a key focus on smaller particles ($PM_{2.5}$) in order to deliver ongoing health benefits for Londoners – according to the WHO, there is no 'safe' limit for exposure.

5. Responding to the challenges

5.1 Rail: *Making the most of existing networks and increasing capacity*

National rail network

Devolution

The separate management by central government of London's local railways from those run by TfL results in a confusing mix of ticket products, fare levels, service quality standards and information provision.

The Mayor's rail vision offers an alternative. Responsibility for London's inner-suburban rail services should be devolved to the Mayor. It would allow for a single investment strategy, a single fares policy, consistently high levels of customer service and safety and a network fully integrated across all of London.

As demonstrated by the highly successful integration of the London Overground in to the TfL network, devolution can deliver significantly improved service quality and operational performance.

Gross savings through adopting a more efficient franchising model from the Southeastern and West Anglia franchises alone could amount to £100m over 20 years.

Capacity schemes

TfL's submitted a preferred package of solutions to Network Rail in August 2011. These schemes largely affect routes coming in to central London rather than increasing capacity in the region itself. Such schemes could increase pressure on central London termini (discussed elsewhere in this document) and provision would need to be made for this.

Enhanced London Overground services and train lengthening on a number of South Western, South Central and South Eastern services, as well as additional stops at stations in inner London e.g., Denmark Hill and Peckham Rye and some additional trains will all improve rail services in the outer central London sub-region.

Underground upgrades

On the Northern Line, a second upgrade is being designed to take full advantage of the signalling capability delivered by the first upgrade.

This will require additional rolling stock and some reconfiguration of service patterns, with the prospect of delivering a significant increase in capacity.

TfL are investigating options for optimising this second upgrade, understanding its impacts and how best to capture opportunities that arise as part of the wider deep tube upgrade programme.

Looking towards the end of the decade and beyond, plans for upgrades to the Central, Waterloo & City, Bakerloo and Piccadilly lines are being considered. TfL is developing a new generation of rolling stock to replace the fleets on these lines, which would allow the system to be run more efficiently, increasing capacity without a major increase in energy consumption.

Northern line extension

The extension of the Charing Cross branch to two new stations at Nine Elms and Battersea Power Station (BPS) will transform access to and from the Vauxhall Nine Elms Opportunity Area.

Funding will be sought from the private sector in the form of developer contributions and business rates if the area is made into an Enterprise Zone. TfL is also working with the London Boroughs of Wandsworth and Lambeth and government to explore mechanisms for financing the scheme.

The extension will provide significant journey time benefits e.g., reducing the time between Battersea and Canary Wharf by around 25% and to Moorgate by around 40%. The proposed extension would create a direct link to Westminster (5 min), the West End (8 min) and the City (8 min).

TfL consulted on four route options in Summer 2011 . Route Option 2 (extension from Kennington to Battersea Power Station via South nine elms) received strong support - 61% of respondents. Following consultation, TfL updated the draft appraisal of route options, considering both consultation responses and other aspects of the scheme. The decision to take Route Option 2 forward was ratified by the VNEB Strategy Board in late in 2011. The consultation report is available here.

At the end of 2011, the developer of the BPS site went into administration. While a new developer is being sought, TfL will continue to work on the proposal so that an application can be made for a Transport & Works Act Order (TWAO) in late 2012/ early 2013. Subject to Powers and funding a possible extension could be complete and open for use in 2018.

Bakerloo line extension

TfL has confirmed that a route from Elephant & Castle to Lewisham and then to Hayes would offer the most transport benefits, along with a possible link to Beckenham Junction. By taking over the Hayes national rail line, capacity would be freed at central London terminals and release trains that could be used to strengthen capacity on key crowded South Eastern routes. Such an extension could also deliver significant regeneration benefits to south east London.

TfL plans to continue working to develop the case and refine the options. In particular further investigation of route options between Elephant & Castle and Lewisham is needed. One option is to provide a direct route with an intermediate station at Old Kent Road, offering significant regeneration potential; alternatively, a longer route with stations at Peckham and Camberwell would help address connectivity gaps in these locations.

DLR extensions

Further development of DLR routes are considered a promising means of addressing a number of challenges. In central London an extension to Euston could help relieve overcrowding on the Northern Line and accommodate additional passengers resulting from HS2 passengers. Further detail on this is included in the 2010 SRTP.

5.1 Rail: *Managing impact of HS2 on central London's transport network*

Over the past year or so TfL has been assessing HS2 impacts on London and its transport system. Through its response to the Government's consultation on HS2, the Mayor set out a number of changes that would be required in order to support the project. These related to the negative environmental impact on property and people particularly in west London; Euston and onward dispersal and the need for Chelsea-Hackney line or something similar; Old Oak Common and the need to link to the wider transport network; and the HS2 – HS1 connection and impact on North London Line.

The Government's recent announcement that it will progress with a new high speed line between London and Birmingham confirmed the enormous benefits of the project. Over the coming year it is vital that adequate connections to London's two potential HS2 stations are planned and agreed with the Government and TfL will be working closely with the DfT, HS2 and sub-regional partners to ensure that this takes place.

Implications for central London

The majority of the issues relating to central London centre around onward distribution and the need for an expanded Euston station. Onward distribution is an issue not only because of the capacity constraints on the TfL network but also because of the severance issues caused by Euston Road.

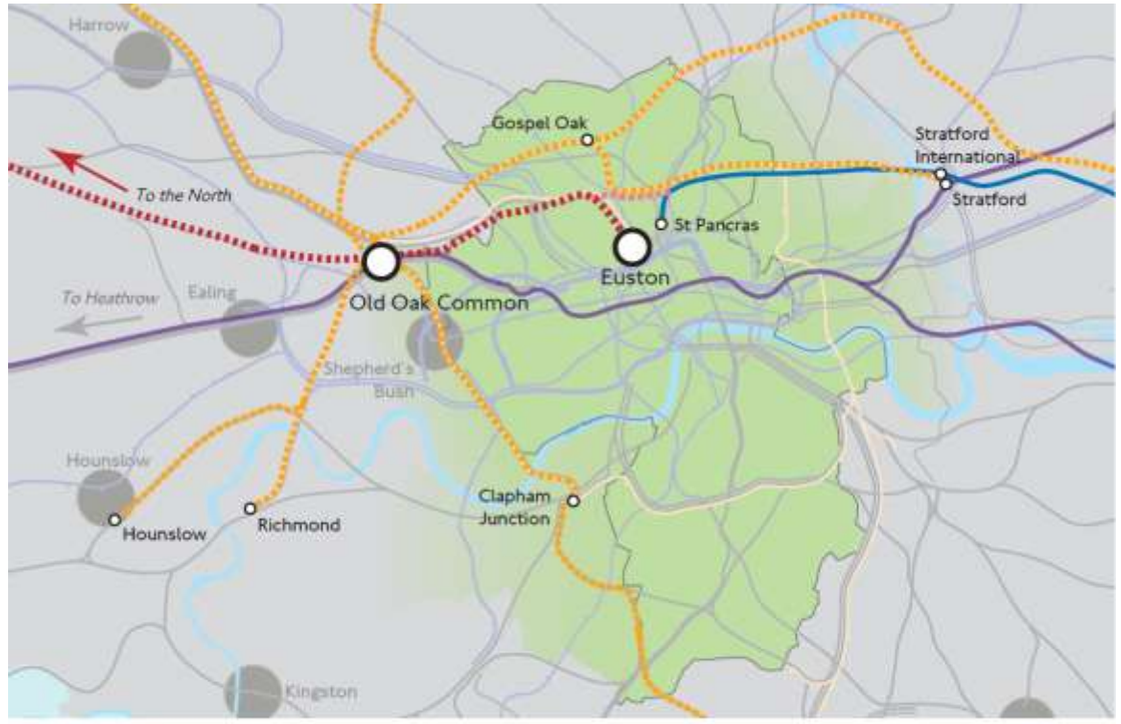
The full HS2 network more than doubles the number of people wishing to access the Underground at Euston over the AM peak period. Any time savings on journeys from Birmingham / Manchester to London will be lost with people queuing to access the Underground station at Euston unless further capacity is provided, and background demand is reduced.

Further analysis has suggested that Crossrail 2 would best address the predicted long wait times on London Underground services caused by HS2 demand. Average wait times for southbound Victoria line services at Euston drop to two minutes with Crossrail 2 in place

In addition to enhanced tube capacity, improved links between Euston and Euston Square stations are required. Currently, interchange between the two stations is an arduous process, involving long walk times. A new direct link would help to spread the dispersal of passengers from Euston onto other Underground lines.

Linked with the importance of facilitating better interchange will be the need to ensure that the urban realm around the station and severance caused by Euston Road is improved. Figures suggest that there are currently 5,000 potentially walkable trips from Euston every day and with HS2 in place this would be likely to increase. Encouraging people to walk to their final destination could also help mitigate the impacts of HS2 on London's rail network.

TfL also believe that taking some London Midland services out of Euston and instead running them as Crossrail services would provide further necessary relief to Euston station.



HS2 Ltd and Government need to continue to work with TfL to address the problem of onward dispersal at Euston. In taking forward the scheme, the Mayor and TfL is seeking the following commitments:

- That Government and HS2Ltd commit to including provision for Crossrail 2 as a part of the redesigned Euston station;
- That Euston Square station is directly connected into Euston station as part of HS2 Phase 1 to improve access from Euston to the City and to reduce Northern Line crowding; and
- For High Speed Two Ltd to work with TfL on other transport issues at Euston such as provision for buses, taxis and facilities for cyclists.

Next steps

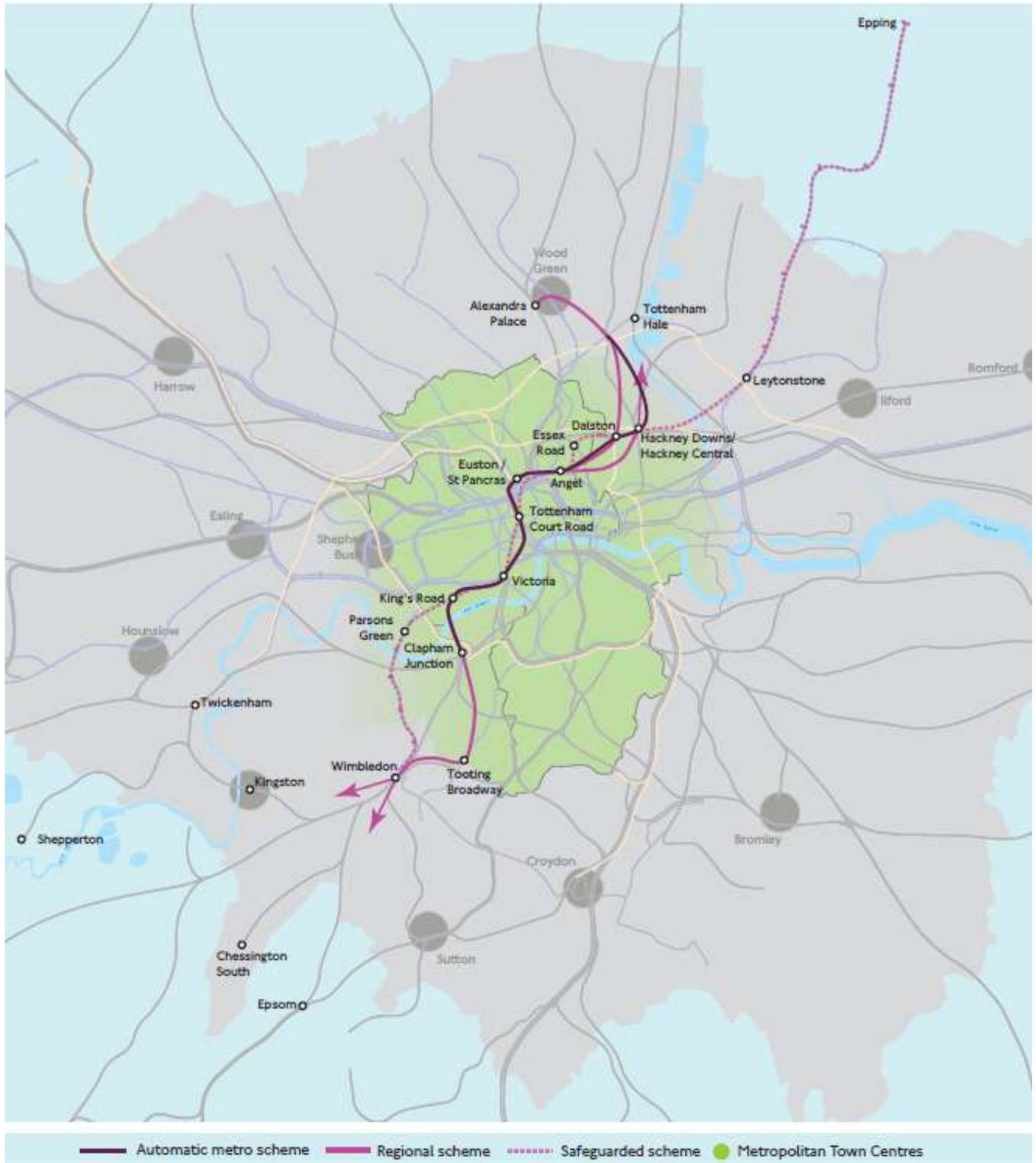
The Secretary of State has outlined a timetable for progressing the first phase of HS2 (London to Birmingham) based on the following key dates:

Phase 2 detailed design released – March 2012;
- Submit Hybrid Bill for Phase 1 –October 2013; and
- Government announces preferred route for Phase 2 – late 2014
- Phase 1 Bill passed – late 2015
- Phase 1 construction begins – early 2016.

TfL will work very closely with High Speed Two Limited to fully understand the impacts of the scheme on London and to progress plans for necessary mitigation.

5.1 Rail: new lines - *Crossrail 2*

On behalf of the Mayor of London, TfL has been investigating possible future route options for a Crossrail 2 project. A number of options are under consideration, including the currently safeguarded route. All options include a common central core between Victoria and King's Cross along the safeguarded route with an additional station at Euston.



In particular, TfL have assessed an **automated metro**, which would operate on a new tunnelled alignment between Clapham Junction & Seven Sisters, and a **regional metro**, which would link existing national rail routes in the south west and north east by means of a new tunnelled alignment.

Both the options provide greater crowding relief to existing lines than the safeguarded alignment. They both also provide much needed capability to disperse HS2 passengers at Euston.

While the automated metro option would be considerably less costly than a regional metro option, it would provide fewer benefits and to some extent be less satisfactory operationally. It would provide relief to the Victoria and Piccadilly lines but it would not offer significant relief to the national rail network. It would also generate very high interchange demand at Clapham Junction which would require significant modifications or a rebuild of the station. A regional metro scheme would deliver substantial capacity and enhanced connectivity and crowding benefits to the SW Main Line allowing many more locations in the sub-region to be directly connected to the core route as the map above shows.

Further work on these options is being undertaken through the whole of 2012 with a view to developing a preferred alignment for Crossrail 2, which will lead to a re-fresh of the safeguarding in due course, likely in 2013/14.

For the time being however, the provisions of the current safeguarded route, issued by the Secretary of State for Transport in 2008, for the Chelsea Hackney Line (Crossrail 2) will remain in force until such time as the Secretary of State issues any new safeguarding directions following the results of the aforementioned development work.

A programme of stakeholder engagement has been established, including:

- Briefing on recent developments to London Councils Rail Group
- Continued and on-going briefings to relevant Sub-Regional Panel meetings
- Further briefing to London Councils Rail Group again in summer of 2012, to update on progress, ahead of reporting back to the Mayor in autumn
- Specific meetings with individual boroughs/groups of boroughs, as desired to cover local issues.

5.2 Enhanced interchange, station capacity and onward distribution

Strategic interchange

As highlighted in the 2010 plan, there are a number of locations across London that are particularly well suited to role of a strategic interchange. Strategic interchange can help reduce crowding on lines and stations in central London by diverting passengers on to other routes before arriving in the centre.

Clapham Junction has arguably the greatest strategic interchange potential in London. The improved Overground service on the West London Line and new entrance to Clapham Junction station on St John's Hill are likely to represent early stages in a programme of measures to enhance both services and infrastructure there. 2012 will see the introduction of South London Line services (Peckham, Canada Water and beyond), and a number of further smaller scale interchange enhancements are possible.

It is anticipated that by 2031 around 24,000 people will interchange between rail services at Clapham Junction in the AM peak. If measures were in place to increase the frequency on the Overground network (Willesden Jct / Stratford & west (Peckham, Canada Water & Whitechapel) to e.g., 8tph then this could increase station usage by around 40%. If some of the current 'non-stop' trains called at Clapham Junction & measures were implemented to improve the convenience of interchange the number of interchanging passengers could rise even more.

In the longer term there is even greater potential. If HS2 is to be built, Clapham Junction could provide connections to Old Oak Common, giving simple onward connections to Birmingham, the north and also Heathrow. If Crossrail 2 served Clapham Junction, crowding pressures could be relieved at Waterloo with interchange at Clapham to reach destinations such as Tottenham Court Road, Euston, or beyond – although this would result in the likely remodelling/rebuilding of the station.

In the central London sub-region itself, *Peckham Rye* is a strategic node in the inner south London rail network and is in a prime location for regeneration. Funding is secured to transform the area in front of the station into a public square with improved bus-rail interchange and 2012 will see the opening of Overground orbital services. Completion of Thameslink in 2018 will see a greater number of through London services.

Potential unfunded schemes include TfL HLOS 2 recommendations of step-free access across the station, a 2 tph off-peak Bromley South to Victoria service. Further potential unfunded improvements include additional stops by currently non-stopping services, further interchange enhancements & increased frequency on Overground, Southern & Thameslink services

Elephant and Castle interchange is the gateway to an Opportunity Area. Enhancement of the interchange is recognised as a prerequisite to significant growth and therefore a local CIL is proposed to contribute towards the major interchange works required.

A vastly improved interchange and Thameslink services could encourage some people travelling from south London to the west end to travel via Elephant and Castle, using the under-utilised Bakerloo Line, rather than via Victoria station and the overcrowded Victoria line.

Termini and stations

Survey work undertaken by TfL at all central London termini in 2010 represented the first comprehensive picture of journey patterns to and from the termini for the first time since 2001. A report of the survey findings is now available on the TfL website.

Although each of the termini is unique, three broad groups can be drawn of termini that share characteristics based on location around:
• City of London – almost all trips involved commuting, high frequency of trips
• City of Westminster – many passengers travelling within the GLA, mix of trip purposes (still majority commuting)
• Northern edge of CAZ – longer trips, more business trips, lower trip frequency, PM peak flows greater the AM peak.

The findings suggest that 12% of journeys from termini that are under 2km long are currently done so by mechanised mode but could be potentially walked.

The analysis has been used as the basis for the recent Congestion Relief Pilot Project at Waterloo and was used as part of the HS2 analysis undertaken which informed the Mayor's response to the consultation.

Looking to the future, the forecasts of both TfL and Network Rail (NR) indicate that passenger demand will continue to grow up to 2031 and possibly beyond.

Analysis suggests that initial strategic priorities for the Underground network in the longer term will need to be:
• Holborn
• Camden Town
• Paddington

Work required at these stations include expanding ticket hall capacity and concourses.

In addition, there is a need to jointly develop suitable interventions at the central London termini, which rely on both NR and TfL services to meet passengers' requirements for convenient travel and access.

Initial internal TfL work suggests that beyond those termini at which there are already planned works, the next phase of development should consider:
• Victoria (NR and LU)
• Charing Cross (NR)
• Euston (NR, LU and Surface)
• Fenchurch St (NR)
• Marylebone (LU)
• Waterloo (NR ,LU and Surface).

This is not an exhaustive list and key to the successful identification of future priorities and schemes is a joint TfL and NR planning group to review strategic plans and to assist with model development and assessment for the central London termini as a whole.

5.3 Managing streets: overview of the different priorities

Different priorities

Congestion

- A key pressure on a number of central London's roads
- Will not always be possible to reduce congestion

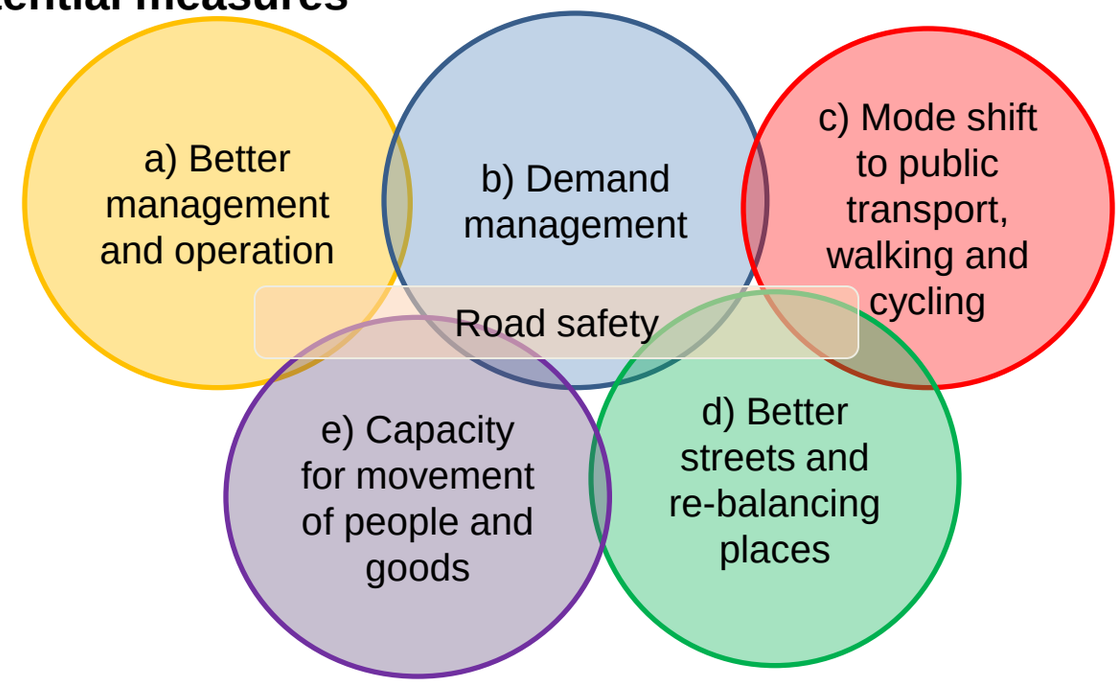
Road safety

- A high priority in all locations
- Frequency and severity of accidents can be improved through good design and measures which reduce traffic speeds

The quality and sense of place

- There is an opportunity to build on the unique characteristics of central London, building on many successful urban realm schemes to further enhance the sense of place.
- This will involved trade offs between different objectives

Potential measures



There is a range of measures that can be implemented in relation to the road network to achieve the different priorities. The balance between them will clearly depend on the priorities at particular locations.

As highlighted in section 4, congestion is already a challenge on many of the roads in central London – and is set to get worse as growth pressures continue (both background and in particular areas associated e.g. with Opportunity Areas) and many parts of the network will reach saturation point. This will impact on all users, including freight/servicing vehicles, private vehicle traffic , pedestrians, cyclists and bus users

The road network plays a vital role in ensuring access to key locations. It is also essential for supporting the increasing needs of freight /servicing that keeps London functioning. And while the strategic links help ensure places are accessible, they can also impact negatively, creating severance and environmental problems, undermining any real sense of place, and seeing conflicts between users with resultant safety impacts.

Tackling congestion and creating a sense of "place" is a priority for much of the sub-region, and with this comes improving road safety, facilitating more cycling and walking and improving the environment.

There are often synergies between the different aims – but there are also potential tensions in particular locations and difficult decisions and trade-offs will have to be made. The need for trade-offs is particularly acute in central London, where demands on the streets (both carriageway and kerbside) is particular intense.

TfL is keen to work with boroughs to assess these issues and to agree the strategic priorities in different areas. The ongoing work via the sub-regions will work to strike a balance between different priorities in different places, identifying the measures needed to support agreed outcomes.

The benefits of better management and operation of the network clearly need to be maximised, but there are inevitably limitations. In growth areas additions to the road network may be required in order to provide access to the surrounding area. On some existing road corridors further action may also be required in order to improve people movement, this could be through measures such as enhanced priority for the most space efficient modes or potentially through increased road capacity for general traffic.

In other areas, place functions and priorities such as walking/ cycling need to be prioritised. As London grows, TfL and the boroughs must not only seek to mitigate the environmental pressures, but think innovatively about enhancing the quality of places and their future 'shape'.

In Opportunity Areas, there is the potential to embed a different approach from the outset and steer less car dependent growth.

In many inner London areas, where public transport accessibility and the density of service provision is relatively high, there would appear to be significant scope for a more ambitious approach, with opportunities to develop inspiring places, reduce car use and promote significantly higher sustainable mode shares.

There could also be potential for integrating freight and urban realm as well as improvements through reducing and re-timing freight deliveries, learning from the Olympic trials.

5.3.1 Managing streets: supporting efficient freight and servicing

One of the biggest highways issues in central London is the impact of the freight and servicing activity. Responding to the current and future challenges will require a flexible and innovative approaches to meet the specific and varied demands across the region.

Continuing to work in partnership, deliver environmental measures, being innovative, as well as harnessing the legacy of the Olympics and utilising planning tools are all critical to meeting the central sub-regional freight challenges.

Partnership working
Partnership working between TfL, boroughs, developers, freight operators and businesses is vital. Businesses need to be encouraged to understand and utilise their power to influence supply chains. The Freight Quality Partnership for Central London, which brings together retailers, freight operators, central London boroughs, and TfL to consider ways to achieve more efficient and sustainable movement of freight will continue to be important.

Environmental measures
The movement of goods can have a significant impact on the environment, in terms of noise, disturbance, and air pollution. We need to investigate opportunities together to:
• Promote alternative forms of freight movement that have lower environmental impacts, e.g., such as the use cycle-freight as an extension to cycle courier services;
• Encourage the use of low emission goods vehicles to minimise air and noise pollution, e.g., providing charging points where necessary
• Provide refuelling depots for low emission goods vehicles,
• Deliver more efficient goods movement
• Undertake out of hours deliveries where appropriate

Innovation
As there is no one solution to freight and servicing, a selection of measures is needed to address the issues in the sub-region and these need to include more innovative and cleaner ways of doing things. An example of this is Camden's cargo freight trial.

Potential for sustainable , accessible and affordable refuelling areas for low emission freight vehicles in central London needs to continue to be sought.

Work needs to continue to be undertaken into clean and innovative ways into managing freight logistics and demand in central London. Good examples already being undertaken in the central sub-region, for example: the Arup Regent Street consolidation; and the inmidtown Business Improvement Districts (BID) group ordering programme.

Further innovative measures for implementation in the central sub-region should include influencing public sector procurement practices to encourage use of consolidation principles (e.g., NHS, schools etc, to reduce the need for separate/uncoordinated deliveries, without the need for consolidation centre technology).

A similar approach could be used within BIDs in the central sub-region to reduce the number or shift the timing of deliveries to an area, e.g., Better Bankside.

Making better use of street-space during different times of day, e.g., shared use of loading space at different times of the day with other uses such as footways; or use of new technology for finding and booking loading bays

Identifying locations where out-of-hour deliveries could be implemented more, building on the 2012 Games lessons for legacy operation.

More consistent enforcement between boroughs to minimise possible confusion and provide clear standards for operators to conform to.

In addition to implementing further measures there is a clear need to get a better understanding of the servicing sector and van use in London overall and also particular areas. Identifying locations in the central sub-region which would be willing to participate in a case study exploring this would be welcomed.

Harnessing the potential of the 2012 Games
The 2012 Games will bring opportunities and challenges to freight and servicing across London, including in the central sub-region. TfL is currently working with businesses to ensure that they are as prepared as possible for the Games, including analysing road network impacts on each Games day. But this also provides a great opportunity to build on the lessons learned during the Games for continuation during legacy.
This will involve testing the long term applicability of the "Four Rs" approach to freight behavioural change for different sectors and areas:

- Reducing deliveries;
- Revising the mode;
- Re-timing; and
- Re-routing

Planning Tools
Using planning tools will help to ensure that the impact of construction traffic and the servicing of future developments are kept to a minimum and opportunities for land acquisition for freight and logistics depots are maximised through development.

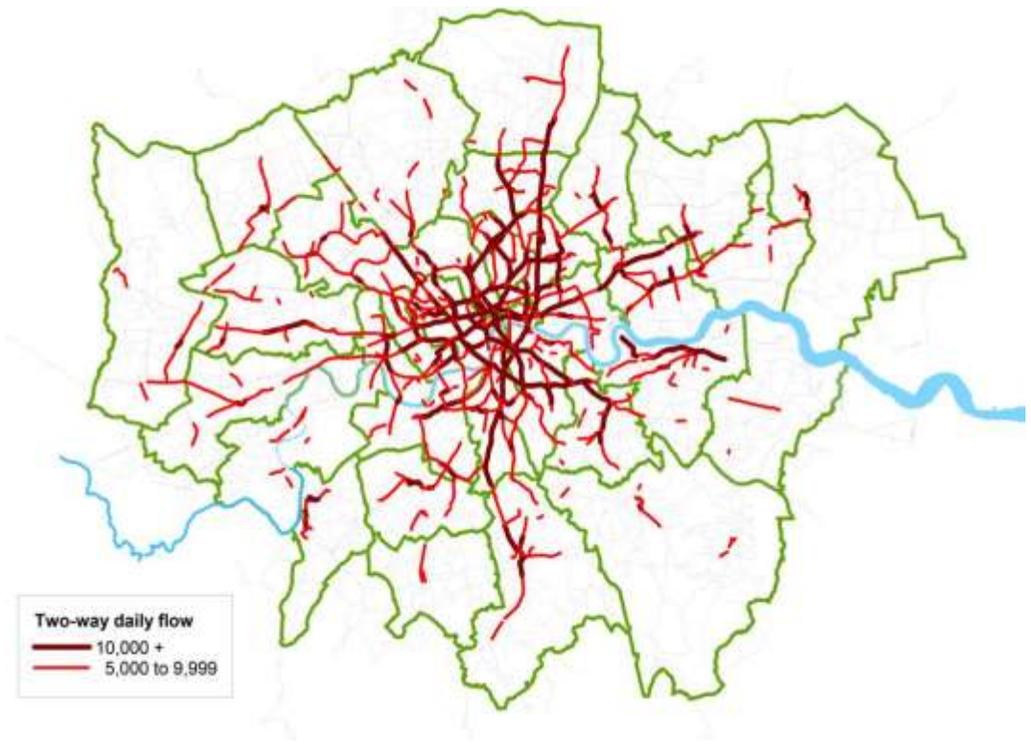
Management of out of hour deliveries and the control of noise in residential areas should be done where possible through the planning process so that adequate enforcement can be undertaken .

S106 agreements need to be used to improve the effectiveness and enforcement of planning conditions related to freight Delivery and Servicing Plans (DSPs) and Construction and Logistics Plans (CLPs).

Planning policy could also be used to require new developments to use consolidation centres, making provision for electric freight vehicles.

Cargo Freight
Camden first began working with Gnewt in 2009 on a cargo freight and electric van trial based in the City of London, delivering stationary for Office Depot. The University of Westminster evaluated the trial over the period of between 2009 and 2010. There was a 62% reduction in CO_2 per parcel compared to Office Depot's previous delivery system. Total mileage over the pilot was reduced by 64% with significant fuel savings. Gnewt now deliver all Office Depot parcels in EC1-4 including businesses in the eastern edge of Holborn within Camden. Camden won a London Transport Award for the project in 2011. Gnewt are now looking to expand its operations throughout the sub-region.

5.3.2 Managing streets: bus network development and infrastructure



Strategy
The development of the bus network will continue, in consultation with boroughs and other stakeholders, with the strategic aim being to maintain a network which is:
- Frequent;
- Comprehensive ;
- Reliable, and;
- Easy to use.

This strategic aim is based on the priorities of existing passengers and potential passengers. However, there are different responses to the challenges over the short, medium and long term.

Short Term
Short term changes in demand from new developments, particularly housing , will be accommodated through adjustments of existing services or extra services where funding is available.

Improvements to reliability will be possible through planning using additional data, e.g., iBus data could provide an excellent opportunity to understand reliability issues on particular corridors and TfL are investigating such a use.

In some cases the scope of bus priority measures may be changed in the short term, with boroughs and TfL working together to maintain the efficiency of existing priority and keeping potential facilities under regular review,

The most important locations will remain the town centres as hubs of the network and corridors with high bus frequencies.

Medium Term
Bus services are designed as part of the wider transport network. Good integration with the rail networks, and walking and cycling helps maximise overall benefits.

The increase in rail capacity associated with the opening of Crossrail will lead to some bus service reductions in the sub-region, particularly in the central area. However, bus usage is also likely to increase in some areas such as around main rail termini, and parts not directly benefiting from Crossrail.

Challenges include:
- Providing new bus stopping and terminating space to meet changes in travel patterns
- Maintaining or improving bus journey times
- Retaining and improving bus access to major passenger attractors, including stations and health facilities.

In the West End it is expected that service levels will be reduced compared to the level reached before Crossrail. This is likely to involve a mixture of frequency reductions and some network configuration, with all roads currently served retaining services. However, some local alterations may be feasible, along the lines of alterations at Oxford Circus terminals in 2009/10 which reduced the flows on the busiest sections of Oxford Street itself.

The impact of introducing two-way movement on Tottenham Court Road and removal of the gyratory system to the north requires assessment of capacity and standing provided .

Ensuring that there is sufficient space for terminals near to where routes end is a key priority for buses to enable the network to operate reliably is important hence capacity preservation at some places. This need must be balanced with other priorities at specific locations.

Initial bus service development plans have been prepared for the VNEB OA to increase provision, linking to the surrounding area and complement the timing of a possible extension to the Northern line. Additional pressure for interchange at Vauxhall and congestion nearby would need to be considered.

Usage is expected to increase on a number of heavily-used bus corridors outside the central area, e.g., Peckham/Camberwell to and from the West End/Victoria.

Long Term
All of the challenges of the medium term will carry through beyond 2020. There may be opportunity to exploit selective additions to the road network where justified by intensification at new developments and in Opportunity Areas, e.g., Euston. In these locations the case for bus priority should always be considered from the earliest stage of design.

If Crossrail 2 is taken forward, this will also have significant implications for the central sub-region.

Supporting growth
Bus is the only public transport mode serving all areas of the sub-region. Bus services and bus infrastructure are therefore relevant to almost every medium or large-scale planning exercise in London.

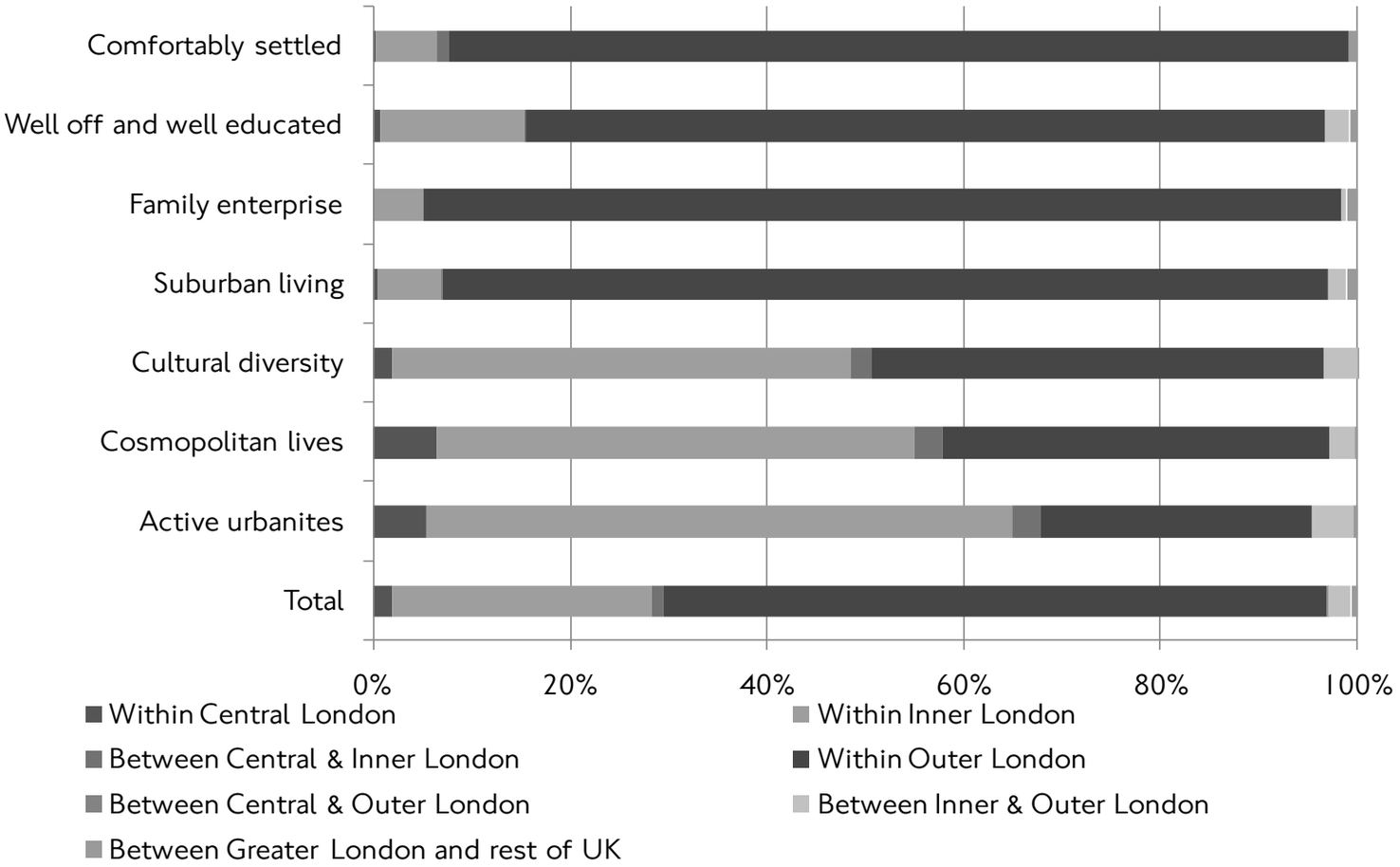
The table over the page shows the main hubs of the bus network in the region and gives examples of residential, commercial and social development which could be supported by investment in bus services or infrastructure. Some are existing sites, others are forthcoming or aspirational.

5.3.2 Managing streets: supporting growth across the sub-region through buses

The effectiveness of bus service improvements always depends on the supporting infrastructure, both in new developments and at other places served by the routes in question. For example, intensification of bus services between a town centre and a new housing area can be supported by bus priority on–site but will also need new terminal capacity in the town centre.

Place-type	Locations in the sub-region	Pressures	Measures to support bus use	Examples where applicable
Central area	West End and City	Population growth creating pressure on roadspace and terminal capacity	• Direct access to major passenger interchanges • High quality interchange facilities • Sufficient terminal capacity • Bus priority on approach corridors	Oxford Street/Regent Street/Bond Street partnership. Crossrail integration, including Tottenham Court Road redevelopment. Network Rail major stations – enhance bus interchange
Major hubs	Camden, Angel, Brixton, Streatham, Peckham, Elephant			Masterplanning exercises in various major town centres. Opportunity to enhance bus facilities within Elephant & Castle regeneration.
Other significant hubs	Kilburn, Holloway, Kensington, Sloane Square, Knightsbridge			Crossrail integration
Residential areas	Throughout the area.	Requires additional public transport capacity	• Direct alignments through the site • High quality bus stops • Bus terminals where appropriate • Bus priority on-site and on adjacent links	Kensal canalside
Commercial sites	Industrial, office, retail and leisure sites throughout the area.			Vauxhall/Nine Elms/Battersea Earls Court
Social facilities	Healthcare and education sites throughout the area.			Healthcare reorganisation schemes, e.g.,. use HSTAT to efficiently plan health services to reduce transport impact

5.3.3 Managing streets: walking



Potentially walkable trips, market segment by location

(Appendix B defines the Walk Market Segmentation types)

Walking is the glue that binds London's transport system together – nearly all trips start or end with a walk whatever mode is used in-between.

Reducing short distance car and public transport travel and shifting to walking frees up capacity. Improving pedestrian infrastructure and the public realm encourages more walking and can support economic vitality.

The original SRTP discussed potentially walkable trips in central London. This analysis, combined with the analysis of the central London termini surveys referenced earlier in this document identify more than 2 million potentially walkable journeys. This is well in excess of a plausible demand forecast and should be thought of as the outer bounds of the available market.

The analysis does indicate that there is sufficient potential to deliver the required growth in walk travel. Using London walking segmentation data, the segment with the highest propensity to walk at present is 'Active urbanites', representing nearly a fifth of the London population (18%). A postcode classified as 'Active urbanites' can be expected to generate 1.5 times as many walk stages as a postcode of comparative population classified as 'Comfortably settled'.

The groups with the highest propensity to walk, 'Active urbanites' and 'Cosmopolitan lives' are concentrated in central and inner London, the south west London and in some outer London town centres. The segments least likely to walk, 'Well off and well educated' and 'Comfortably settled', tend to be located in the outer reaches of the Greater London area.

The focus for increasing walking trips in the central area should be to replace:

- Short distance (less than 1 mile) bus and tube trips in Inner London
- Onward trips from key transport interchanges.

This can be done by:

1.Infrastructure improvements to make walking easier safer and nicer, e.g. Key walking routes, Great Outdoors and other urban realm improvements

2.Information provision to encourage walking journeys, e.g. Better wayfinding like Legible London signs and mapping; and the use of TfL's walking website and journey planner

3.Promotion of the benefits of walking and of London as one of the world's great walking cities, e.g. After-rail walking promotion campaigns, such as the Waterloo Pilot.

A Legible London map and poster campaign was conducted at Waterloo station for two weeks during September 2011. Initial research results showed that, as a result of the campaign, there was a 16% increase in leisure walking and a 6% increase in utility walking (e.g. walking to work) as a result of the campaign. This successful campaign is now being rolled out during the Olympics to increase walking for all short trips during and after Games time at: King's Cross, Euston, Liverpool St, London Bridge, Waterloo, Paddington, Canary Wharf and Stratford.

The central sub-region has the highest level of walk trips of any sub-region and has realised the greatest potential of any sub-region – it's successful and should be recognised as such. A unique challenge for this sub-region is the relatively high number of tourists and other visitors. It is important where practical to encourage these customers to walk rather than use public transport, especially for very short distances.

5.3.3 Managing streets: walking

Key building blocks for growing walking in central London include:

Pedestrian Safety
A key delivery priority for walking is to reduce the number of pedestrians killed and seriously injured across London, using targeted projects at collision hotspots.
5,391 of the 28,889 total London road casualties in 2010 involved pedestrians, this represents 19 percent of all London casualties.

Approximately 913 of the 5,391 pedestrian casualties are classed as KSI (killed or seriously injured). Pedestrian KSIs comprise 32 percent of all London 2010 KSIs in London in 2010.

There were a total of 58 pedestrian fatalities in London in 2010. Of these, 20 (34 percent) were aged 65 years or over, suggesting that older people are a particularly vulnerable subset of pedestrians in relation to KSIs.

The perception that walking is not safe is a frequently cited reason in TfL's annual 'Attitudes to Walking' surveys (along with traffic fumes, dirty streets and poor signage) given by potential pedestrians to explain why they don't walk more.

Pedestrian Countdown
Pedestrian Countdown provides a digital display counting down the time pedestrians have left to cross the road before the red man appears. By replacing the blackout period with a numerical counter, pedestrians are able to better judge whether they have enough time to cross the road reducing uncertainty and helps them to make more informed choices.

In 2010-2011, TfL conducted an on-street trial at eight traffic light junctions across London to test the technology and assess whether it could be approved for use at more locations in the Capital. The results of the on-street trial concluded that pedestrian countdown:
- Is supported by the public
- Reduced uncertainty
- Will smooth traffic flow

Pedestrian Countdown technology will now be installed at around a further 200 locations across the London.

Contracts have now been awarded to two companies to supply the equipment and work to install the technology will begin in summer 2012, with all sites expected to be delivered by the end of 2014. TfL is working with boroughs to establish their interest in potentially rolling this technology out at locations along borough roads.

Legible London
Legible London is a comprehensive and consistent pedestrian wayfinding information system for London. The Legible London base map of Greater London was completed in December 2011. This now allows TfL to provide Legible London mapping for boroughs, developers, landowners and companies.

Westminster, Camden, Southwark, Lambeth, the Royal Borough of Kensington and Chelsea have all installed Legible London signs in their boroughs, as the system expands across the Capital. Examples include: Paddington; Portobello Rd; and West Hampstead. Legible London maps have been installed on all Underground stations, mainline rail stations, bus shelters and cycle hire docking stations in central London. This roll-out is continuing to provide a complete integrated wayfindng system across the central sub-region.

This coverage ensures customers receive consistent Legible London mapping when moving between mainline stations, the Underground, buses and on-street. TfL has also supplied Legible London mapping to landowners, Network Rail LOCOG and Crossrail, ensuring the system continues to spread across London's transport network. In 2011/12 Legible London mapping has been further integrated within the TfL family, including Crossrail hoardings and on Barclays Cycle superhighways routes.

Key Walking Routes
A Key Walking Route links together places that people need to travel between, with high quality walking facilities.

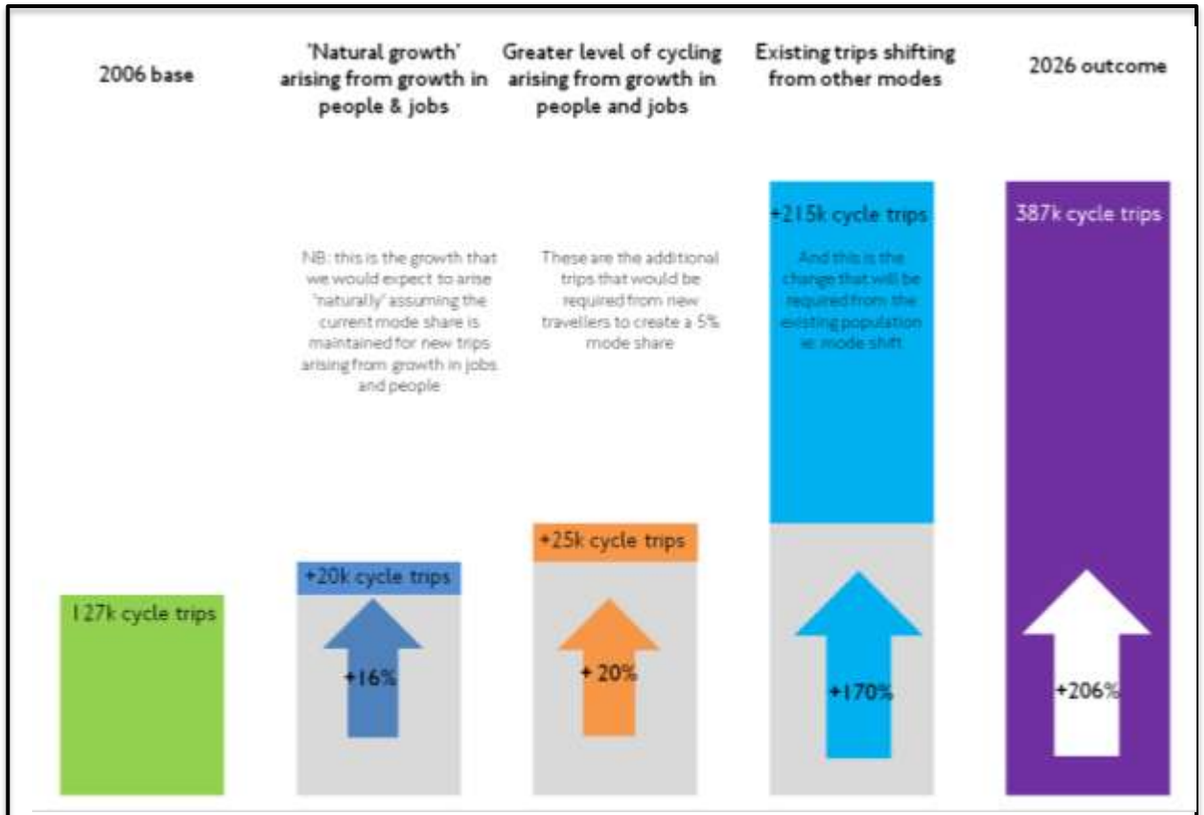
Key Walking Routes offer proven potential to increase walking trips and pedestrian numbers. They also support town centre regeneration and local businesses whilst helping to reduce the number of short car and public transport trips undertaken. The choice to walk to and within town centres across London has to date often been inhibited by poor walking environments that encourage car dependency.

The seven central London boroughs have all implemented key walking routes to date in the central sub-region. Recent highlights include Cheapside and Portobello Square schemes.

The Clear Zone approach to delivering a consistent, coherent and linked network of streets that meets the needs of all road users through the Covent Garden area should be replicated more widely.

Strategic Walk Network
The Walk London Walk Network was delivered in February 2012, in time for the 2012 Games. It consists of seven walking routes (645km in total) that span London, with the newest route, the Jubilee Greenway, which runs through central London commemorating the Queen's Diamond Jubilee celebrations. Over 90% of Londoners live within 10 minutes of the network, which attracted over 7.5 million walkers in 2010/11, an increase of 4.5 million walkers in the year (47%) from 3 million walkers in 2004/05.

5.3.4 Managing streets: cycling



The diagram above shows one possible model for how growth in cycling may be achieved. By focusing activity in growth areas to achieve a mode share above 5%, boroughs could reduce the mode shift from existing trips needed.

Central London has significant cycling potential that is concentrated in the large urban centres such as Angel, Camden Town, Brixton, and Knightsbridge. This offers an opportunity for focused interventions.

Policies relating to road network management, public transport provision and place-shaping can be just as influential as policies targeted specifically at cycling in the choice to cycle (or not).

Using lessons learned from the success of inner London boroughs such as the Haringey Biking Borough, could help capitalise on significant cycling potential – creating a bespoke package tailored to the needs of inner London boroughs (e.g., residential bike parking and security, permeability, etc).

Alongside this, it is essential to keep investing in the delivery of cycling within the Central Activity Zone where safety and cycle parking provision are key challenges. Packages of measure for both type of location are set out on the following page.

On the strategic road network, there needs to be enhanced focus on improving the cycling environment – starting with the review of key TLRN junctions.

TfL and the boroughs should work together to develop a focus on new development. Embedding cycling even more strongly within OAPFs and master planning will be key to delivering the step change required.

There are significant challenges in the medium term and continued investment will be vital.

Key building blocks for growing cycling in central London:
Encouraging more cycling is a challenge, and no one approach is enough. Outlined below are a number of options, which together, can help to increase the rate of cycling in central London by overcoming issues such as safety, parking and permeability.

Cycle safety
The rate of KSIs has decreased by 7% (2008 -2010). However, the absolute number of cycle casualties has increased in recent years and the perception that cycling is not safe is the reason most frequently given by non-cyclists to explain why they don't cycle more. London's roads must feel and be safe for cyclists.

This is why TfL, working with stakeholders, is currently carrying out a review of a number of key TLRN junctions and looking closely at future junction design.

There needs to be an emphasis on reducing conflicts between cyclists and other vehicles, especially HGVs, through a joined up approach of education campaigns focused on sharing the road, more enforcement through the Commercial Vehicle Unit and improvements to road space.

TfL and the boroughs must work with the freight industry to implement innovations in technology /vehicle design such as cyclist sensors and mirrors as well as redesigned cabs that provide greater visibility.

Integration into places
The design of new places needs to include measures for cyclists, from long-distance cycle commuters to young children learning to ride a bike.

TfL see a future for a series of Cycle Hubs (such as that recently announced Peckham Rye as part of the Linking Places fund), particularly in high density destinations – dedicated routes, way finding, secure parking, maintenance, cafes and cycle shops. Opportunity Areas provide a good chance to design in such schemes.

Improvements such as station upgrades need to encourage high quality interchange between cycling and public transport, particularly rail.

There is a need for networks of connecting routes and cycle friendly treatments. In central London this should include fast, direct routes for commuters and improved legibility and permeability of streets.

Cyclists of all abilities require visible and easy-to-follow routes to access shopping and leisure destinations, minimising the fear of losing their way.

Cycle security & theft prevention
Cycle theft is still a big problem in London and is a major factor in putting people off taking up cycling as well as causing new cyclists to revert back to cars/public transport.

Provision of more secure cycle parking and increased cycle anti-theft registration will be crucial to continue the needed growth in cycle trips.

Helping people to make the change
There are many people who are 'just like' cyclists but do not currently cycle, offering a substantial 'near market'. These types of people may be converted to cycling by initiatives designed to encourage leisure travel as a 'first step' such as Sky Rides. These events should be inspiring to get participants and spectators cycling.

To achieve the required growth the appeal of cycling needs to extend to all people, not just those seen with a high propensity for cycling - especially women, people from ethnic minorities & lower income groups.

It is imperative that cycling is made affordable for low income groups through measures such as bike libraries, improving access to cycle-to-work schemes, and rewards for choosing to cycle.

5.3.4 Managing streets: a cycling demonstration in central London

In the centre a key challenge is safety at large junctions and busy roads, whilst way finding , permeability and access to cycle equipment and training may be more of an issue in the inner London suburban districts.

The patterns and reasons for travel are different in the central sub-region compared to other sub-regions, with comparatively high levels of travel at all hours of the day.

Schemes such as Exhibition Road can offer attractive and safe environments for cyclists, and the lessons learned from this scheme will help inform future schemes to ensure they provide as much benefit to cyclists as possible.

The approach outlined below is an initial demonstration of the level of investment and type of measures likely to be necessary to transform cycling in the central sub-region, recognising that there will be constraints at specific locations

The approach needs to be about a package of measures delivered by the boroughs and TfL. Future funding for cycling will be discussed as part of TfL's next business planning process.

Although no specific funding is currently identified for such measures, this work will help shape TfL discussions in the context of Business Planning. We would also encourage boroughs to prioritise measures in LIPs funding, and for both them and TfL to maximise leverage for third party contributions via development and sponsorship.

Inner London Approach

A package of measures to transform cycling in inner London

Safety

Safety is a key concern for cyclists in the central sub-region and TfL is dedicated to improving the safety of cyclists through initiatives such as the TLRN junction review. This ongoing review is assessing all major schemes planned on TfL roads as well as all the junctions on the existing Barclays Cycle Superhighways.

Road maintenance will be key in central London to reduce obstructions that are especially dangerous for both cyclists and pedestrians .

Residential Cycle Parking

New developments can be obligated to provide cycle facilities through planning processes although in the case of inner London, many of these measures will have to be retrofitted.

Permeability

Central London's old and dense network of roads does not natural lend itself to direct, fast routes for cyclists. The Barclays Cycle Superhighways have vastly improved the radial cycle infrastructure in the Capital but investment will need to be made in the central sub-region to create clear cycle routes. This could include the relocation of on street-car parking. Way finding improvements will be key in the implementation of this as will new streetscape schemes. The DIY Streets approach (a scheme run by Sustrans in collaboration with boroughs such as Haringey) offers an inclusive way of delivering local cycle improvements through community support and ownership of such measures.

Central Activities Zone Approach

This is an outline of potential infrastructure measures for the CAZ area of central London. To be effective, new infrastructure needs to be supported by non-infrastructure measures such as cycle training and marketing to make people aware of the options available to them as well as giving them the confidence to take them up. Both types of measures are crucial for successful projects.

1. Barclays Cycle Superhighways

Parking was identified as an issue in the last SRTP. The Cycle Superhighways have been well used by cyclists travelling into central London, however parking infrastructure at the end of these routes in central London needs to accommodate this growth. This should include workplace parking as well as public parking facilities.

2. Cycling in Parks

To encourage apprehensive and leisure cyclists, permitting cycling along certain links through the Royal Parks should be explored with all stakeholders. The Royal Parks could be opened up to cycling, creating attractive routes in a traffic free environment. This could be introduced at first during certain times of the day only, or only during weekdays to encourage commuter cycling.

3. Bridges

To encourage more cycling in inner London, cycling connectivity across the Thames needs to improve. Bridges can be perceived as unsafe for cyclists, due to the traffic funnelling that can occur during peak hours. Improvements such as the cycle lanes on Westminster bridge are essential, but to raise the profile of cycling pedestrian and cycle only bridges could be considered.

5.3.5 Managing streets: delivering better streets and re-balancing places

It is important to improve the 'attractiveness' of key places in central London to live, work and visit, putting pedestrians and cyclists at the heart of planner's thinking. The City of London has taken a pro-active approach to this, with significant attempts to improve walking conditions through the public realm, new residential housing being constructed e.g., The Heron and new retail activity to promote the City at weekends e.g., New Change Mall.

With the forecast increases in population and employment in the sub-region it will be necessary to seek improvements in the efficiency of people movement along certain corridors – ensuring good access to key centres and employment hubs.

Analysis indicates that in central London, it is the boroughs of Southwark and Lambeth that need to support the greatest increases in walking. But more widely there are still reasonable opportunities for modal shift to walking, and there must be an emphasis on delivering a step change in conditions for walking, particularly in some central London neighbourhoods and centres across the region.

'Rebalancing 'in many areas can achieve significant win-wins, in other areas choices will need to be made about which objectives to prioritise. Schemes such as Cheapside in the City of London have demonstrated that public realm can be improved with attendant walking environment enhancements whilst still accommodating motor vehicles including freight, bus, taxi and private vehicles.

Wilcox Road, Lambeth is a good example of better streets and successful place shaping - improving the quality of the public realm, movement for sustainable travel modes and supporting local businesses.

BEFORE

AFTER

TfL has developed a **Valuing Urban Realm (VUR) Toolkit** to provide monetary values for upgrades to the urban realm to help inform business case development. The tool will be launched fully in early 2012. It was developed by TfL with a range of public and private sector partners to provide an evidence base for future investment in the urban realm.

Academically rigorous, the research lasted seven years and incorporated over 1,000 case studies. It has been well regarded in the UK and overseas for its thoroughness and applicability. The VUR Toolkit allows planners and urban designers to evaluate the key scheme benefits of public urban realm investment. It produces outputs of how monetary value has been added.

It uses and builds upon the Pedestrian Environment Review System (PERS), a walking audit tool developed by TRL and LB Bromley to monetise pre-and post-implementation urban realm quality.

Measures to further promote this shift to walking through urban realm improvements include:

- high quality interchange: walking / cycling / PT so that onward journeys are easier and more convenient
- accessible crossings, removal of guardrail, widened footways in key locations, de-cluttered streets
- 'greening' of the street environment
- simplified junction designs, removal of traffic signals, widened footways , raised loading bays and improved accessibility
- improved walking routes and wayfinding through Legible London
- ensuring that all new development inspires people to walk and cycle and includes high quality urban realm and cycle parking facilities
- improved connections to green spaces; green grid links
- development of 'future urban villages / smarter to bring together a comprehensive package of measures to help reduce car dependency, encourage active travel and deliver environmental benefits.
- Utilising development, growth and funding to place shape areas recognises that individual areas have their own particular character, needs and priorities that may need to be managed and addressed in different ways. This is a good way to harness funding in a phased way for public realm and walking improvements. Camden has taken this approach and has nine place plans in the borough including King's Cross and Euston.
- Partnership working at a local and sub-regional level to leverage funding from other private and public sector sources to deliver better places.

Within the MTS the Mayor focuses TfL on delivering Key Walking Routes alongside boroughs, addressing walking severance issues, improving accessibility, implementing Legible London, de-cluttering streets and raising the quality of London's public realm. The quality of public realm is especially important to the Mayor and walking has a key role to play in meeting the Mayor's desire to deliver better urban realm.

5.3.5 Managing streets: London's Great Outdoors

London's Great Outdoors, launched in 2009, brings together a wide range of projects and investment to improve the quality of, London's streets, squares, parks and open spaces. Through the Great Outdoors programme a number of public space projects have been delivered across the central sub-region e.g. Exhibition Rd.

The Mayor's lead provides strategic leadership for regional partners and stakeholders, creates momentum, and brings investment from other sources, including the private sector.

The 2012 Olympics has brought the world's attention to London and thousands into its public spaces. The spirit of collaboration has been exemplary, delivering great places such as Piccadilly-two-way and the Southbank for this global event.

Investing in public space sits clearly within the London Plan, as well helping to deliver on many of the policy aims of the Mayor, such as the Transport Strategy, Biodiversity Strategy, London Health Inequalities Strategy and Draft Climate Change Adaptation Strategy. This follows through to more detailed documents, such as the Supplementary Planning Guidance for the All London Green Grid.

Since 2009, a range of projects have been completed under London's Great Outdoors. By the end of 2011, 45 projects had been completed, and a further 35 are on track to be delivered by summer 2012.

These projects, all investing in the public space to some degree, have been delivered with productive collaboration with the boroughs by Transport for London and the London Development Agency, supported by Design for London, and championed by the Mayor's Design Advisory Panel and others.

One of the successes of London's Great Outdoors programme has been the demonstrable ability to leverage funding from other sources. Since 2009, the programme has expanded from £225million in secured funding to £355million. This investment in public space is not all from the mayor; £171 million has been leveraged from third parties.

The Mayor remains committed to supporting the quality of design of public and open space, across the full range of projects. The Great Outdoors programme will be revisited in 2012 and will continue to deliver the good work from the initial Great Outdoors programme as well as focusing on areas such as High Streets and London's green spaces.

5.3.6 Managing streets: a discussion about new approaches to central London roads

As the previous pages have set out, the streets in central London have many – often competing – demands placed on them. Measures to encourage mode shift, to better manage freight and to improve the efficiency of the bus network will all contribute to tackling some of the transport challenges central London faces but more will need to be done to ensure an efficient network of streets that meet the needs of all users.

Central London has proved itself a world leader in road demand management with the introduction of the Congestion Charging scheme in 2003 and it could be useful to consider other new, innovative solutions.

These types of schemes could contribute towards delivering MTS proposals for accommodating growth and supporting environmental, safety and quality of life outcomes.

In central London there is very little space for new road capacity, however there are still opportunities to think differently about the provision of road capacity in the region. With issues of congestion, cyclist safety and vehicle emissions as well as the desire to improve the urban realm in central London, discussions regarding new approaches to streets could prove useful.

With congestion in central London tending to arise from ‘conflicts’ between different categories of road user (pedestrians, cyclists, buses, deliveries etc) on the same physical street and as London grows there will simply be insufficient space to share out in order to meet the demands.

An area for investigation could be taking a new approach to bridges. Bridges in central London funnel thousands of people every day in to and out of the centre. Could it be worthwhile considering a new approach to the use of this capacity ? e.g., dedicating some bridges to use for pedestrians and cyclists, with others used for motorised traffic. Or could pedestrian and/or cycle bridges be “hung off” existing bridges as has been done on Hungerford Bridge.

Less infrastructure based ideas include considering different approaches to places. For instance, where the use of a place changes throughout the day (e.g., freight in the early morning, pedestrians in the evening), could thought be given to time dependent priority options.

Taking examples from other parts of the world, is there scope to revisit a programme of 'Summer Streets', where road space is given over to pedestrians and cyclists on Sundays for example, as happens in many other world cities.

In terms of vehicles, options for zero emissions zones could also be worth exploring. With central London’s particular air quality and traffic issues, this type of policy approach could help improve conditions for pedestrians and cyclists as well as helping to meet the UK’s international environmental obligations.

The MTS allows provision of new strategic road capacity. Proposal 35 states that TfL will give consideration to new road schemes where there is an overall net benefit when judged against the following criteria:

- Contribution to sustainable development/regeneration including improved connectivity
- Extent to which congestion is reduced
- How net benefit to the environment can be provided
- How conditions for pedestrians, cyclists, public transport users, freight users and local residents can be improved
- How safety is improved

5.3.7 Managing streets: 20mph zones

The MTS acknowledges the role of 20mph zones, particularly on residential roads. 20mph speed limits and zones can deliver benefits, both in terms of improving safety and encouraging more people to walk and cycle.

'The frequency and severity of road collisions and casualties are closely related to vehicle speeds. In residential areas, 20mph zones are generally popular with residents and make the streets safer for pedestrians and cyclists. This in turn encourages more use of these modes, with environmental and health benefits. Research has shown that 20mph zones have reduced casualties by over 40 per cent where they have been implemented in London'.

Borough roads

London has a good track record in implementing lower speed limits and zones across the Capital. Over 400 20mph zones have been implemented in London, many in recent years, where local councils and local communities have supported their introduction. TfL has worked closely with the boroughs on these and other speed management measures, and funded much of this activity via its £150m annual Local Implementation Plan (LIP) funding.

The introduction of borough-wide 20mph zones is the responsibility of the London boroughs. TfL is supporting and evaluating this programme through the funding provided by the LIP process available to all boroughs.

In November 2010, one borough (Islington) implemented a borough-wide 20mph speed limit on all its residential roads to supplement its existing 20mph zones that it had implemented over the last decade. The impacts of this borough-wide speed limit on road casualties over a 36 month period will be evaluated, as is standard with road safety evaluation, in order to understand the impacts of the borough wide approach.

The Transport for London Road Network (TLRN)

The TLRN is made up of statutorily designated strategic roads . They represent only 5% of roads in London, and carry over a third of traffic, thereby relieving residential communities of high volumes of traffic and heavy vehicles.

The management of this network is complex because it provides vital arteries for London's commercial traffic, in addition to their place function and importance for pedestrians and cyclists. This can sometimes cause issues where the link function conflicts with the place function resulting in severance.

As such, in considering lower speed limits on such routes the potential benefits in terms of both safety and liveability of town centres need to be taken into consideration alongside the important transport functions these routes perform.

Historically TfL has not implemented 20mph zones / limits on the TLRN except for trial, legal or structural reasons, such as:
•Camden High Street 20mph limit (traffic signals timing settings): experimental trial
•Rotherhithe Tunnel 20mph limit: legal requirement
•Tower Bridge 20 mph limit: structural reasons
•New Cross Road 20 mph limit: structural reasons

TfL is currently reviewing the management of our road network, as part of the preparation of a Network Operating Strategy, and will shortly be consulting on a new Road Safety Plan for London. Issues of road safety and the many competing demands for London's limited road space are things we are actively considering.

5.3.8 Managing streets: tackling road safety issues

London has achieved substantial reductions in casualties and collisions over the last decade, including the great success in reducing the numbers killed and seriously injured and the numbers of reported slight injuries. Compared to the 1994-8 baseline, the number of people killed or seriously injured in road traffic collisions in the Capital has fallen by 57%, and the number of reported slight injuries by 33%. 3,798 fewer people were killed or seriously injured on London's roads; and 12,994 fewer slight injuries were reported in 2010 compared to the baseline years.

TfL, London boroughs and the Police continue to work extensively to deliver comprehensive road safety programmes which are helping to improve the safety of our roads. TfL have been working closely with key stakeholders over the last year to develop a new Road Safety Plan for London that reflects the needs of all road users in London. The draft Road Safety Plan will shortly be going out to external consultation.

The initiatives designed to reduce road casualties can be divided into two broad categories. The first are those activities that are applied London-wide, with the aim of achieving overall reductions in casualties. The second category are those targeted activities designed to tackle particular issues or the casualties affecting specific road user groups. We need to pay particular attention to the types of travel and traveller who are over-represented in the casualty figures:

- Walking accounts for 21% of daily journeys, but 32% of KSI casualties in London;
- Powered two-wheelers account for 1% of daily journeys, but 21% of KSI casualties in London;
- Pedal cycles account for 2% of daily journeys, but 16% of KSI casualties in London.
- A significant focus for road safety activity in London is, therefore, on providing targeted road safety interventions for pedestrians, motorcyclists and cyclists to address their disproportionate casualty rates.

London-wide

London-wide programmes help reduce road casualties in a variety of ways, including:

Changing the physical environment - using highway engineering to deliver safer streets and public spaces;
Education, Training and Awareness – using public awareness campaigns and a wide range of communication methods to change user behaviour;
Enforcement – action by the police and other agencies to help ensure road users behave safely;
Working with others – leveraging the knowledge, insights, resources and activities of other organisations who have an interest in reducing road casualties.

Targeted initiatives

Besides these London-wide programmes, achieving change depends on the combined actions of many organisations. This collaboration is a central tenet of the proposed approach to achieve progress in the future. In addition, improved information and analysis, and insights from research will assist in targeting specific issues and user groups helps reduce road casualties. TfL will work with other organisations to develop and implement specific programmes where analysis and data suggest further work is required, including:

- Car occupants
- Pedestrians
- Children
- Cyclists
- Powered two-wheeler users
- Tackling excessive or inappropriate speed
- Uninsured / illegal driving /hit and run

Junction reviews

How will junctions be reviewed?

For Barclays Cycle Superhighways, TfL will prioritise junctions for review by looking at factors including customer feedback, collision data, and any findings from post-launch road safety audits.

A number of designs for changes to the junction, aimed at improving safety for cyclists, will then be produced. TfL will also look to make improvements for other road users as part of any scheme.

The designs will be evaluated by a panel of internal experts and external stakeholders, including representatives from the main road user groups and interests, boroughs and the Metropolitan Police. Once a preferred option is agreed TfL will start design and construction work, subject to its consultation and approval processes.

Next steps

TfL began identifying the junctions to be reviewed in late 2011 and internal experts and external stakeholders will now meet regularly to review potential improvements, initially until June 2012.
Any junction improvements will be delivered after the 2012 Games. However, TfL intend to start delivering improvements to Bow roundabout ahead of the 2012 Games.

The junctions in central London where review work has already started are included in the Appendix.

5.4 Opportunity Areas

Background
Accommodating future growth across London is a key challenge for all sub-regions.

Each Opportunity Area (OA) has different characteristics but most require changes in land use type and mix. Typically each can accommodate at least 5,000 jobs or 2,500 homes. The areas often require visioning and master planning to set in place aspirations.

The transport challenges for these areas involve accommodating development trips in already constrained conditions on the highway and public transport networks. Improved connectivity in areas to integrate the area with existing land uses and to improve urban realm and place making with a public transport, walking and cycling led strategy alongside consideration of highway access and capacity requirements.

Development in these areas provide the opportunity to make a difference sub-regionally by improving public transport connections and aspiring to increase mode share for walking and cycling, meeting MTS outcomes for air quality and CO_2 and integrating transport and land use.

This also provides the opportunity to design in urban realm priorities, e.g., offering 'attractive spaces', as an integral part of wider development schemes. Including ensuring good bus, cycle and delivery access, as well as bus priority and bus infrastructure provision (stands and bus stations) where necessary.

Areas of Intensification (AI) are typically built up areas with good existing or potential public transport provision, which can support redevelopment at higher densities.

Opportunity Area Planning Frameworks
TfL works with the GLA and Boroughs to develop transport strategies for these areas as part of Opportunity Area Planning Frameworks (OAPF). These may be produced as a variety of policy or Supplementary Planning documents, Area Action Plans or Opportunity Area Planning Frameworks that are adopted by the Mayor.

The purpose of OAPFS are to provide:

• A strategic and design-led approach to spatial planning, specifically considering how key development sites fit together with the existing and emerging policy context

• Positive planning to identify and resolve contentious policy issues at an early stage in planning process

• Give greater certainty to the development process and investment

• Building consensus with public and private stakeholders

• Strategic overview in respect of cross borough issues

• Process as valuable as the end product

Progress on transport challenges and opportunities in the OAs and AIs in the central sub-region

The London Plan highlights 14 OAs and 2 Areas of Intensification in central London.

Although the quantum of growth is projected to be more evenly distributed across the sub-region cumulatively these areas will still have a significant impact . The size of each development, with the opportunities for regeneration that arise, that will change the number and distribution of trips arising and provide opportunities through the planning system to influence good practice and meet MTS outcomes.

Since the central SRTP was published a Supplementary Planning Document (SPD) has been produced for Earls Court and West Kensington in partnership with Hammersmith and Fulham, Kensington and Chelsea, GLA and TfL. Progress on this is set out on the following page.

In 2012, a particular focus in the central region will be the Euston Opportunity Area. Euston is an area that will undergo a significant amount of change over the next twenty years both as a result of the growth that is forecast and the delivery of HS2.

Euston Road, where vehicle traffic dominates, will be a particular challenge. Its use as an important east-west route for vehicles results in severance and poor air quality.

Meanwhile, Euston Underground station itself has been identified as a problem for many reasons, including congestion around the station, the poor quality of the environment around the bus station and taxi waiting station and poor access for pedestrians and cyclists.

TfL will be working closely with the GLA, boroughs and other stakeholders to take this work forward.

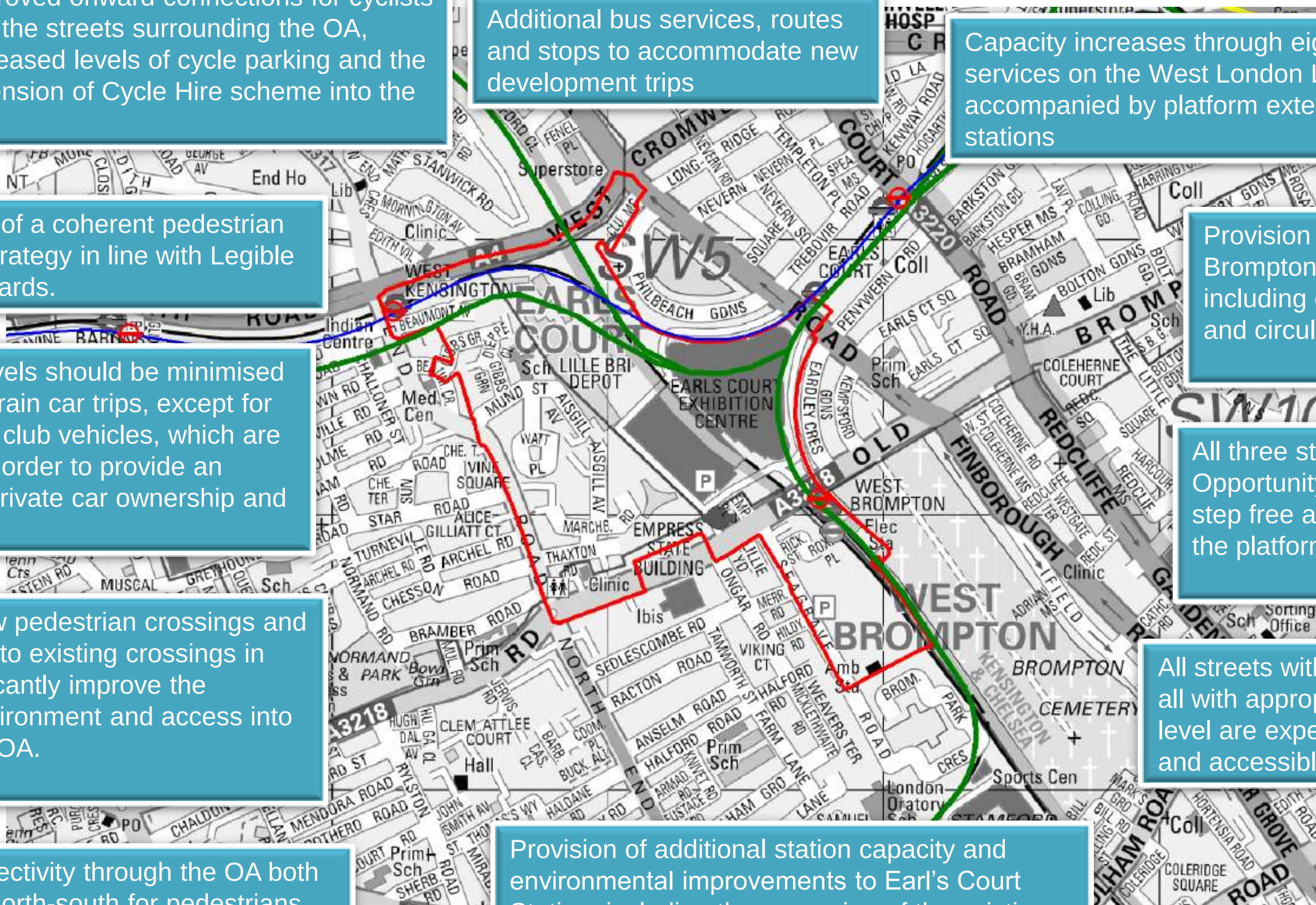
5.4 Opportunity Areas: Earl's Court & West Kensington

The Earl's Court and West Kensington OA presents a significant opportunity for regeneration comprising housing and employment as well as exploring the potential for a strategic leisure, culture and visitor attraction. A joint Supplementary Planning Document (SPD) has been produced in partnership by the London Borough of Hammersmith & Fulham, the Royal Borough of Kensington & Chelsea , Greater London Authority and Transport for London.

The development includes proposals to create a minimum of 7,000 jobs and 4,000 homes in the OA.

Transport and Connectivity objectives in the SPD

- Maximise the number of trips by walking and cycling, ensure excellent access to and increased capacity on public transport as well as managing the demand for freight and deliveries whilst minimising unessential motorised travel to mitigate traffic impacts and congestion on the road network
- Ensure interventions are put in place to accommodate increased travel demand from development and that these interventions do not have any unacceptable impact on the transport network or wider environment
- Ensure a holistic approach is taken to walking, cycling and public transport that delivers a high quality public realm and improves local connectivity.
- Design well proportioned streets that respond to those in surrounding area and encourage walking and cycling.



Improved onward connections for cyclists into the streets surrounding the OA, increased levels of cycle parking and the extension of Cycle Hire scheme into the OA.

Additional bus services, routes and stops to accommodate new development trips

Capacity increases through eight car services on the West London Line accompanied by platform extensions to WLL stations

Development of a coherent pedestrian way-finding strategy in line with Legible London standards.

Provision of additional capacity at West Brompton and West Kensington stations, including enlarged gate lines, ticket halls and circulation space.

Car parking levels should be minimised in order to restrain car trips, except for parking for car club vehicles, which are encouraged in order to provide an alternative to private car ownership and use.

All three stations serving the Opportunity Area should provide step free access from the street to the platform

Delivery of new pedestrian crossings and improvements to existing crossings in order to significantly improve the pedestrian environment and access into and out of the OA.

All streets within the OA should be accessible to all with appropriate gradients where changes in level are experienced, generous footway widths and accessible crossing facilities.

Increased connectivity through the OA both east-west and north-south for pedestrians and cyclists

Provision of additional station capacity and environmental improvements to Earl's Court Station, including the reopening of the existing pedestrian tunnel beneath Warwick Road

5.5 Meeting the environmental challenges: air quality hotspots progress

Transport's contribution to both AQ and carbon emissions is significant. The following pages discuss both AQ and carbon initiatives separately, but importantly, the measures outlined apply to both types of emissions.

Air pollutants such as nitrogen dioxide (NO_2) and particulates (PM_{10} and $PM_{2.5}$) are associated with short and long term adverse health effects including respiratory, cardiovascular illness and premature death.

Particulate Matter
Modelling suggests PM_{10} annual and daily mean limit values are expected to be met from 2012 onwards. However, atmospheric conditions can cause extended periods of high concentrations, meaning a number of sites in central London will still see some exceedences of the daily mean limit value. This, along with the benefits to health of further reducing PM concentrations – and in the future, particularly $PM_{2.5}$,- will mean continued efforts are made to reduce PM.

Clean Air Fund
As part of the wider Mayor's Air Quality Strategy, TfL has delivered a package of local measures to address hotspots of high PM_{10} concentrations. This package includes both measures aiming to reduce exposure to emissions – such as the use of dust suppressants, found to reduce re-suspension of particles by up to 14 per cent – and measures to influence behaviour and awareness, such as the no engine idling campaign and engagement with businesses. TfL will be publishing a report later in 2012 with details of the impacts of the measures implemented through the Clean Air Fund programme.

Schools Toolkit
There has recently been much research into the impact of poor air quality on young people, particularly with regards to lung function and the onset of asthma.

The GLA and TfL are seeking to develop advice to schools that would help them:
•promote student understanding of the causes and impacts of pollution;
•maximise the air quality benefits of school travel plans and energy efficiency programmes;
•take practical measures to reduce exposure of staff and students to poor air quality.

NO_2
Based on current trends, EU limit values for NO_2 are not forecast to be met within central London by. 2015. Defra currently state that that 'compliance with the annual limit value is estimated to be achieved in 2022. Therefore, further action will be needed to reduce NO_x emissions.

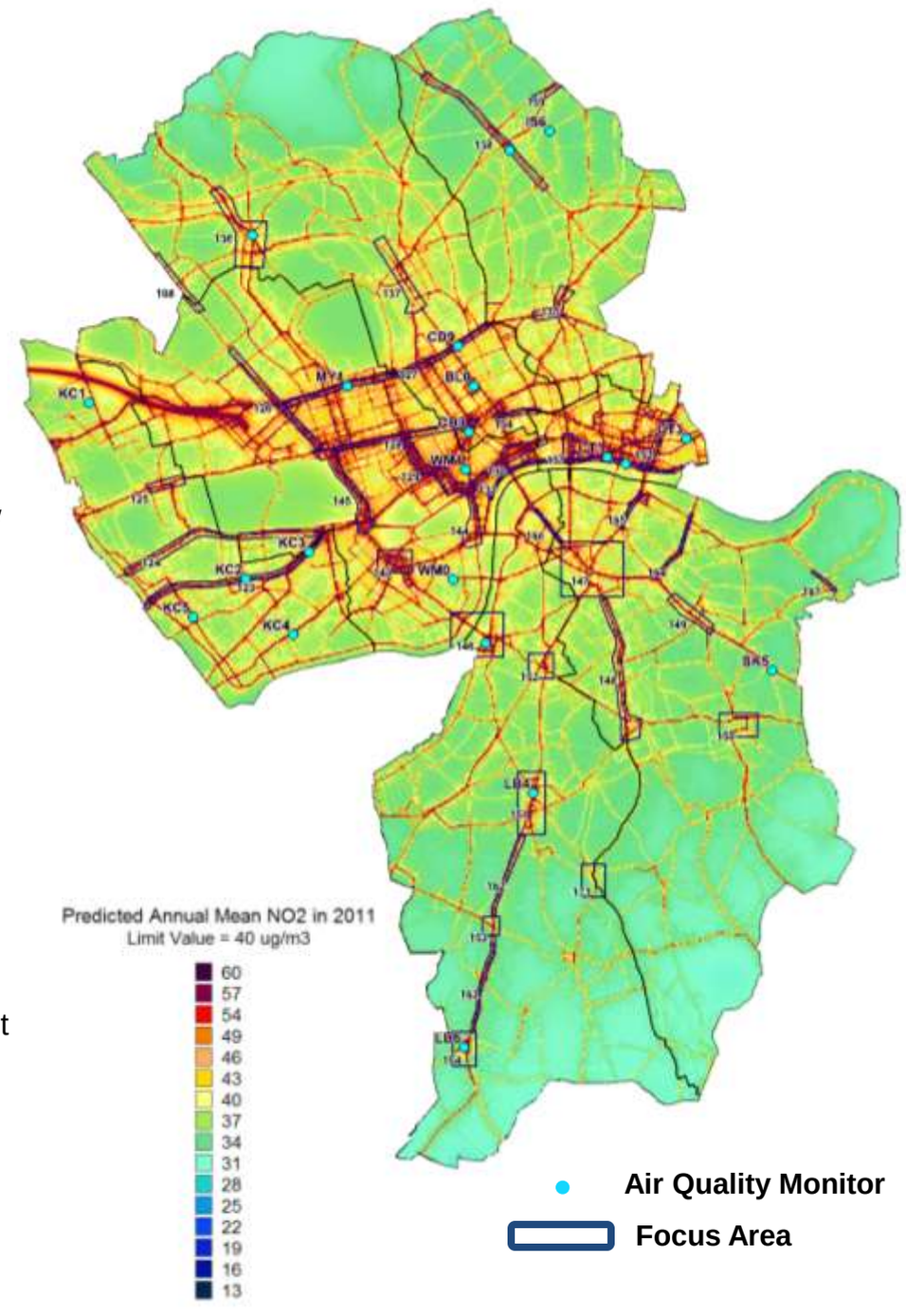
Although road transport is the cause of 45 per cent of NO_x emissions across central London, there are other major sources that will also need to contribute to a reduction in emissions. Amongst the biggest contributors is domestic gas, which, along with commercial and industrial gas, could have NO_2 emissions reduced through following best practice in new development, or through programmes such as RE:NEW and RE:FIT.

Local measures to tackle NO_2
While the Clean Air Fund was delivered within TfL, a similar package of local measures to tackle NO_2 will require a new approach with greater collaboration between TfL, the GLA, and the central London boroughs.

Bus SCR retrofit
TfL has secured £5million of funding from the DfT for the fitment of Selective Catalytic Reduction equipment to buses in order to meet the Euro IV standard for NO_x. With a further £5million provided by TfL, around 900 buses will be fitted with this equipment. In total, this programme will reduce NO_x emissions from the bus fleet by around 10 per cent.

The deployment of this equipment will be prioritised based on intersection with NO_2 focus areas and contract information.

NO_2 concentrations in central London, 2011



5.5 Meeting the environmental challenge: A package of local measures to tackle NO_2

Meeting the NO_2 limit value is challenging and the problem is much more widely spread across London than the remaining PM_{10} hotspots. Many roadside locations in the central sub-region currently exceed, and are likely to do so in future years based on current trends.

The 2010 SRTPs identified 187 focus areas for NO_2 across London. These areas were identified based on a number of factors including modelled and monitored concentrations, levels of exposure, local characteristics, and predictions of future trends.

From these, a smaller number of priority sites for action on NO_2 have been identified, as set out in the map.

Building on the success of the Clean Air Fund in delivering measures to address PM hotspots in central London, a package of local measures to address NO_2 is being developed by TfL and the central London boroughs.

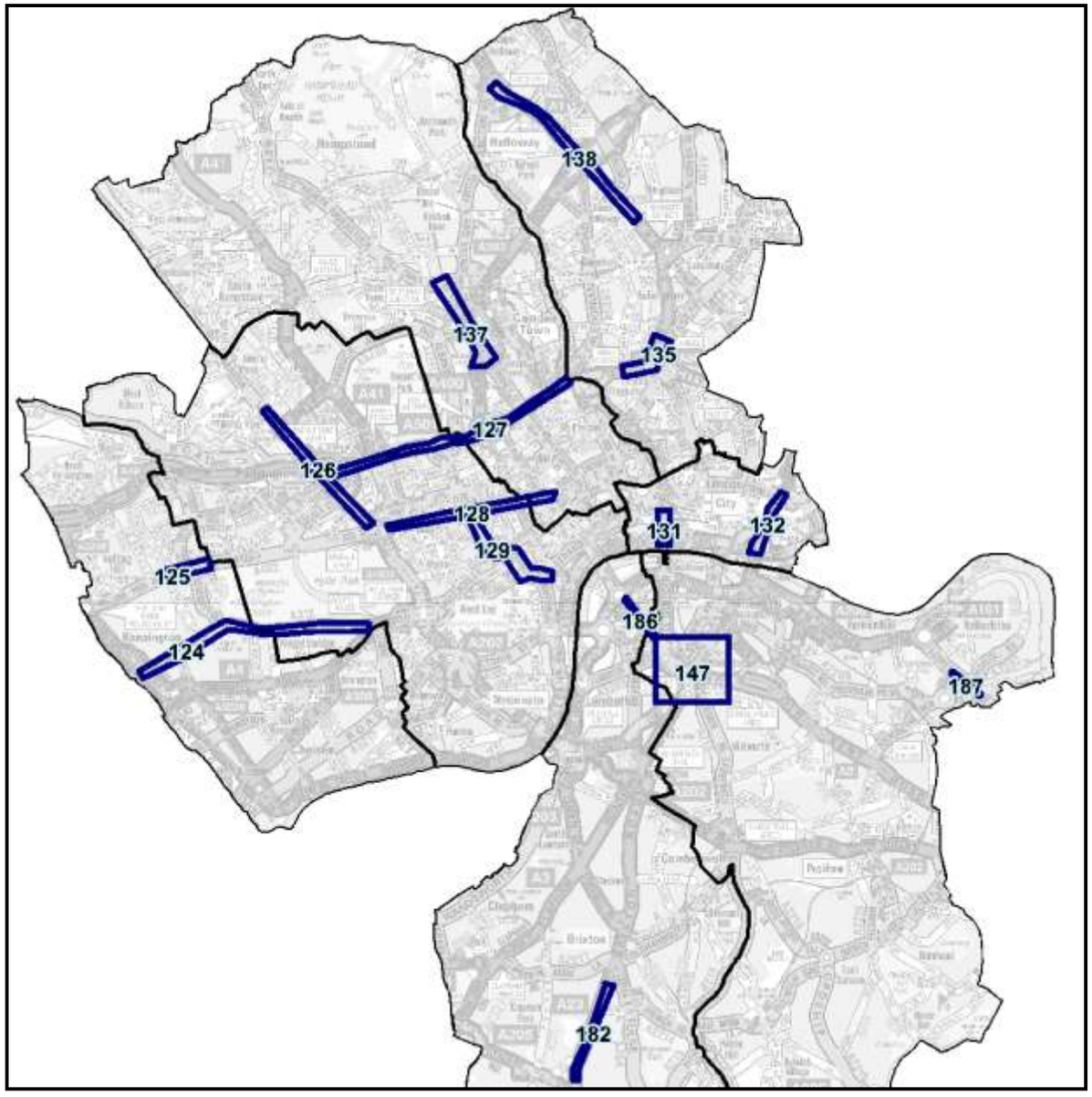
A package of local measures would build on schemes already being delivered by TfL, the GLA and central London boroughs.

Measures could include:

- Further efforts to encourage mode shift locally
- Small scale traffic management schemes and other measures to smooth traffic flow
- Low Carbon Zones
- Incorporation of addressing idling engines into enforcement regime
- Trials of innovative technology and processes (e.g. photocatalytic surfaces)
- Incentives for less polluting vehicles, such as differential parking rates, that have resulted in a shift to less polluting vehicles
- Local freight consolidation schemes.
- Retrofitting schemes to reduce NOx emissions from gas heating
- Urban greening
- School and business engagement campaigns (including local 'air quality champions')
- Promotion of accessible air quality information
- Local neighbourhood design schemes
- Influencing master planning and design to minimise the impact on air quality of developments.

Many of the priority focus areas identified will see development in the coming years. The air quality impact of these developments will be particularly important given the already high local concentrations of NO_2.

Providing taxi ranks can also play a role in helping to improve air quality and reduce congestion by reducing the amount of time taxis spend driving around waiting for a fare. Targeted work can also be undertaken at ranks to reduce unnecessary engine idling and encourage smarter driving behaviour. In order to make the best use of available highway space taxi ranks can be designated to operate only at certain times and also in areas that may have other uses when the rank is not operational, e.g. a late night taxi rank can be appointed in a loading bay that is operational in the daytime.



124 Knightsbridge – Kensington High St

125 Notting Hill Gate

126 A5 Edgware Rd – Seymour St

127 Marylebone Rd

128 Oxford Street

129 Charing Cross – Regent St

131 Farringdon Rd & New Bridge St

132 Gracechurch St - Houndsditch

135 Islington High St & Upper St

137 Camden High St

147 Elephant & Castle – St George's Circus

138 A1 Holloway Rd

182 A23 Brixton Hill

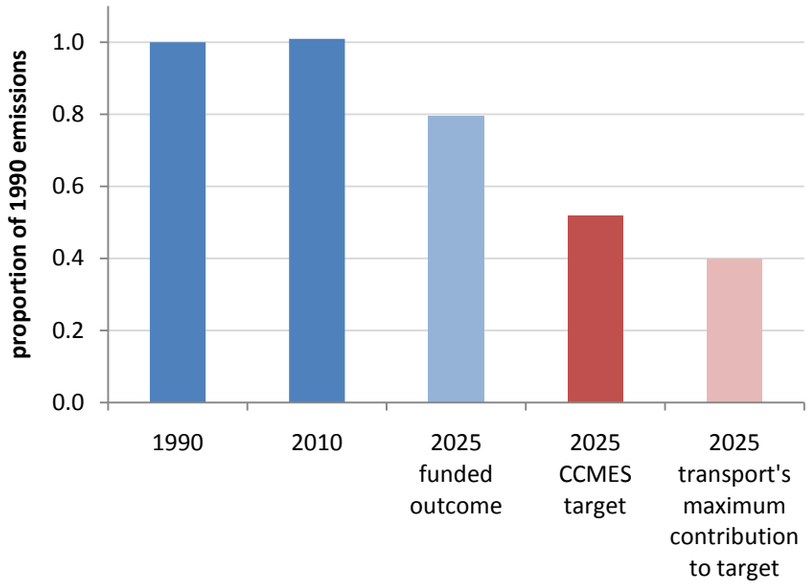
186 Waterloo Rd

187 Lower Road A200 Surrey Quays

5.5 Meeting the environmental challenge: CO2

London's CO_2 reduction target is to reduce emissions by 60% from 1990 levels by 2025. Currently funded transport schemes achieve only a 20% reduction compared to 1990 levels.

The CCMES was published in October 2011, setting out a range of transport and other measures to tackle climate change. While CO_2 reduction is a London-wide - and indeed global task – action must also be taken at a sub-regional and local level. The challenge is clear and evidence suggests that with the growth that is forecast, more must be done to meet emission reduction targets.



Measures to support people in making a switch to more sustainable modes and changing their behaviour will play a key role in reducing the environmental impacts of growth. Technological change will also play a critical role in helping to meet the CO2 targets in London.

Car clubs
Car clubs are increasing in prominence and 46% of the London adult population are with a 5 minute walk of a car club vehicle.

With evidence suggesting that that for every car club vehicle, 20 private vehicles are taken off the road (either from deferred purchase or selling of vehicles), encouraging the use of low emission vehicles within car clubs will also be important and help contribute to a reduction in CO2 emissions.

Further use of ultra-low carbon vehicles The Mayor is introducing low carbon buses, with 300 hybrid buses coming into service by the end of 2012, including the New Bus for London which has fuel consumption expected to be nearly 40%. better than a conventional diesel double decker bus. The Mayor is also working to introduce hydrogen-fuelled vehicles into London.

Electric vehicle rollout
New charging infrastructure is being rolled out to support the introduction of 100,000 electric vehicles on London's streets. Source London was launched in May 2011.

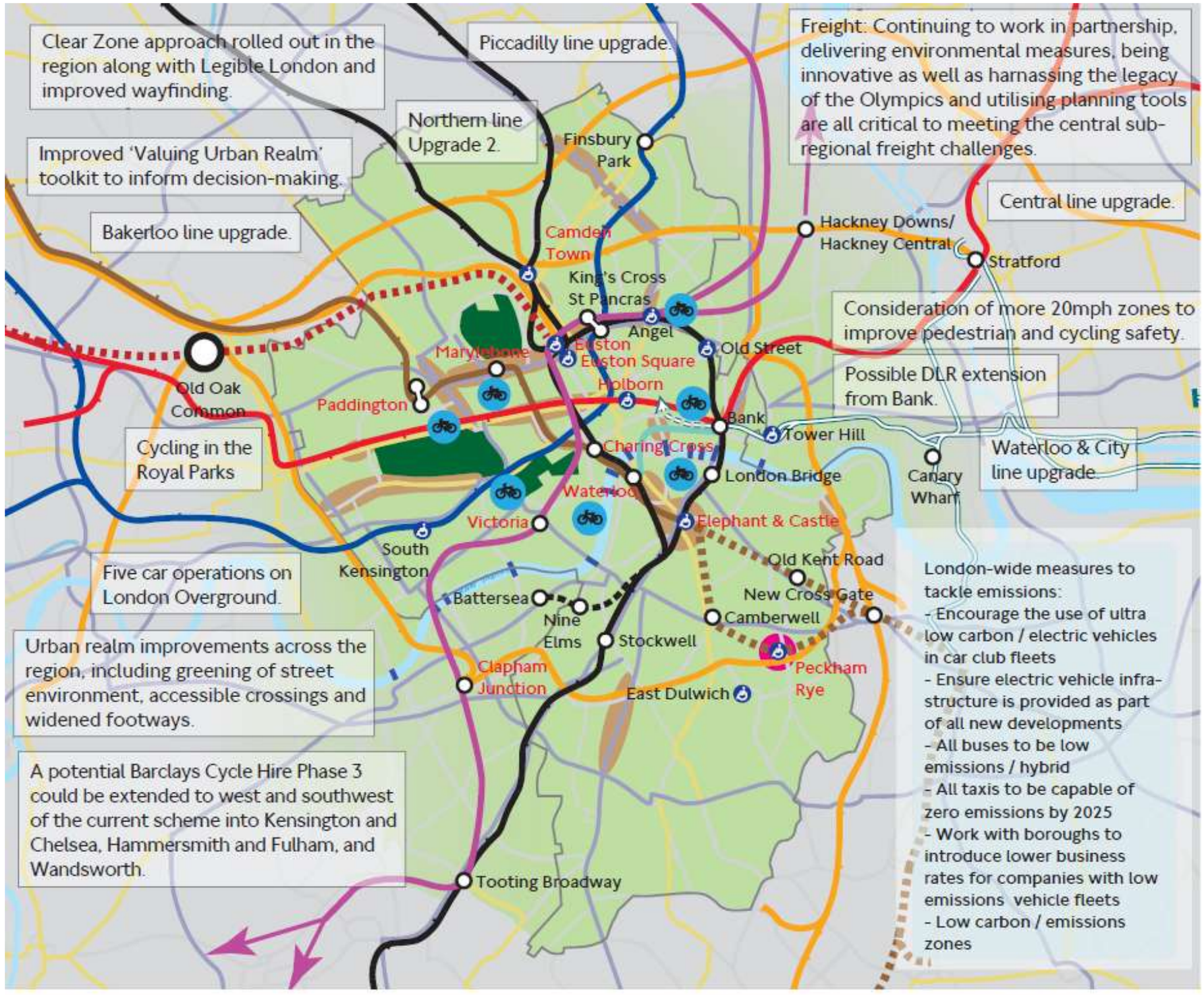
This is the UK's first citywide electric vehicle charging network and membership scheme.

In the medium and long term there is a raft of measures that can help in meeting CO2 reduction targets

Medium term:
- Develop a partnership approach with Energy companies and local authorities to increase network of publicly accessible charging points to 10,000
- Require new residential development parking space to be required EV charging point enabled
- Discounted Low Emission Vehicle adverts on TfL network
- Collaborating with the taxi manufacturing industry to develop an affordable taxi capable of zero emission operation by 2020.
- By 2020 all cars in car clubs to be low carbon vehicles maximum of 90 co2 g/km
- Working with boroughs to introduced lower business rates for companies with low emission vehicle fleets

Long term:
- Working in a partnership approach with energy companies, and local authorities so that every residential parking space (on street and off street) by 2031 to have an electric charging point
- Requiring every new residential development parking space to have EV charging point by 2020
- All buses to be low emission / hybrid by 2021
- Introducing a LEZ for all vehicles for CO2 targets in the 2020s
- All taxis to be capable of zero emission by 2025
- All cars in car clubs to be maximum of 50 CO2 g/km by 2025

5.6 Summary of potential initiatives beyond the Business Plan



FUNDING and IMPLEMENTATION

6. Scheme assessment, funding and implementation

Strategic assessment of proposals to deliver the sub-regional plan

Transport for London (TfL) has developed a Strategic Assessment Framework (SAF) to help examine different project options and their contribution to the delivery of the Mayor's Transport Strategy (MTS) goals and outcomes. The SAF is intended to ensure that project development and ultimately, funding decisions, are informed by the assessment of the broader strategic impacts of interventions against the MTS and their deliverability. Thus ensuring due consideration of cross modal solutions to key transport challenges.

Funding

The availability of funding is a critical issue. The gap between what is assumed to be funded and what is needed widens through the medium and long terms.

The importance of working in partnership with businesses, BIDS and other third parties is critical to securing match funding and maximising delivery. For example, since 2009, 45 projects have been completed under the Mayor's Great Outdoors Programme, and a further 35 are on track to be delivered by summer 2012. This £355million investment in public space is not all from the Mayor; £171 million has been leveraged from third parties, which is an approach we should continue to seek.

The figure below illustrates the potential sources of funding for 'core' business and extensions to the transport system. London's growth creates opportunities for funding schemes that otherwise could not be delivered.

In summary, therefore, it will be increasingly necessary to harness additional resources to enable the services and investment needed to meet long term outcomes through: partnership working, match funding, making the most of Government grant for basic service provision and asset maintenance and renewal; and developing and lobbying Government for innovative sources of income for network extensions to support development of the transport system.

	Maintain & Renew	Enhance	Expand
Traditional funding sources *(Government grant, fares, efficiencies and savings)*	Renewal of life-expired infrastructure Replacement rolling stock, signalling, escalators etc Replacement highway infrastructure Infrastructure maintenance Core service provision Improvement in air quality and a reduction in CO2	Additional rolling stock Increased track capacity Better streets & highway development Operational enhancements Station and interchange schemes Bus service capacity enhancement	
Innovative funding sources *(eg CIL, business rates, tolls, EU)*			•Schemes with localised impacts which enables value capture eg extensions to growth areas (suited to CIL and other planning contributions) •Major highway development / river crossings which generate value / encourage development •Major new London-wide schemes with large network impacts (would require BRS) •Business Improvement District and landowner contributions for public realm schemes and servicing and delivery improvements •European funding which funds or match funds transport innovation

Potential sources of funding for 'core' business and extensions

6. Implementation Plan

Implementation Plan

The Implementation Plan is set out in Appendix D and lists the schemes planned for implementation in the central sub-region, their phasing and whether funding has already been or is yet to be secured. Funded schemes are shown in yellow, unfunded in red. Some schemes are labelled as unfunded as they require further funding to be made available before they could be taken forward, or because they fall outside the timeframe of TfL's current Business Plan.

The schemes identified in this plan are shown in three time periods for delivery:

- Short term: The period up to and including 2014
- Medium term: From 2013 up to and including 2020
- Long term: From 2021 up to and including 2031

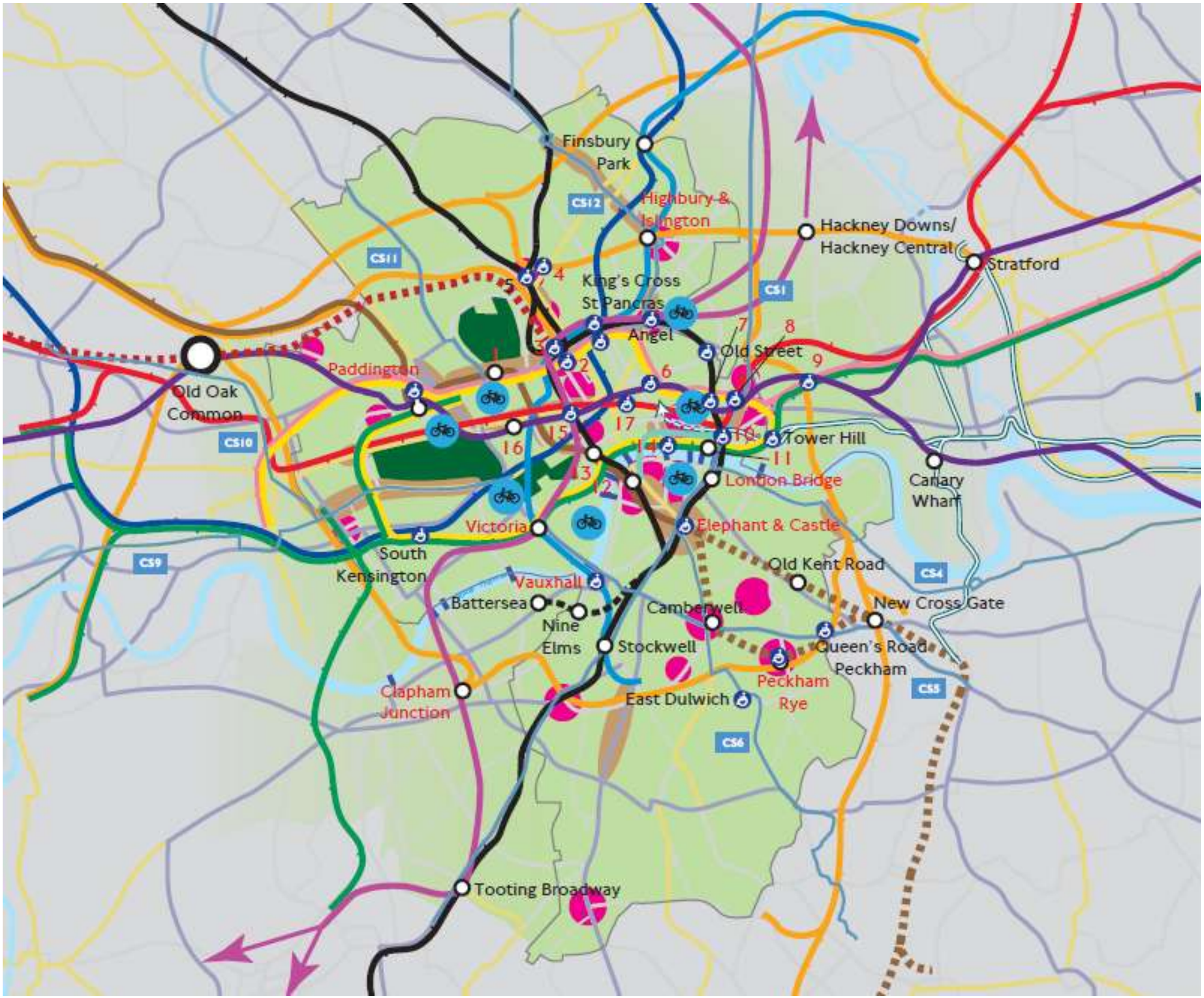
The Implementation Plan reflects the current delivery priorities which include Local Implementation funded schemes. The plan will be regularly reviewed through the TfL Business Plan, the GLA Corporate Plan and the DfT's Network Rail and Highways Agency investment programmes to ensure ongoing alignment with priorities. Longer-term unfunded schemes are at varying stages of development. Scheme development will be regularly reviewed to ensure alignment with policy priorities, value for money, deliverability and to take account of opportunities for funding that may become available.

This Implementation Plan is consistent with the MTS and London Plan implementation plans published earlier in the year, while providing more detail, where appropriate, of schemes particularly relevant to each of the sub-regions.

The reference numbers used in this table are common to all five sub-regional plans – this is to aid cross referencing between plans, hence the numbering is not sequential as some measures are not relevant for this sub-region.

SUMMARY

7. Combined map



7. Combined map

- Bakerloo line
- Bakerloo line extension
- District line
- Northern line
- Northern line extension
- Victoria line
- Circle line
- Piccadilly line
- London Overground
- Central line
- Waterloo & City line
- Hammersmith & City line
- Crossrail
- Crossrail 2
- Potential HS2 alignment
- Londonwide corridors
- Sub-regional corridors
- Barclays Cycle Superhighways
- DLR
- Step-free access scheme
- Cycle Infrastructure
- Priority air quality focus area
- Urban realm and streets scheme
- Pedestrian or cycling bridge

Stations in red - congestion relief schemes

Committed schemes:
- A new timetable will be introduced on the Victoria line in 2013 giving the core a capability of 33 trains per hour.
- Northern line signalling upgrade providing a 20% increase in capacity.
- London Overground: extension from Surrey Quays to Clapham Junction is due to open in December 2012.
- Upgrade of London Underground sub-surface lines.
- Introduction of Crossrail services through central London.
- Journey planner update, enabling planning for whole journey step-free access..
- By end of 2012, 300 diesel-electric hybrid buses in service. These are expected to yield savings of around 30% in fuel use, and hence emission levels, compared to standard diesels and a reduction in noise.
- Pedestrian Countdown to be rolled out to a further 200 locations.
- Introduction of eight Barclays Cycle Superhighways In 2013:
  - CS5 from Lewisham to Victoria
  - CS9 from Hounslow to Hyde Park
  - CS12 West Hampstead to Marylebone

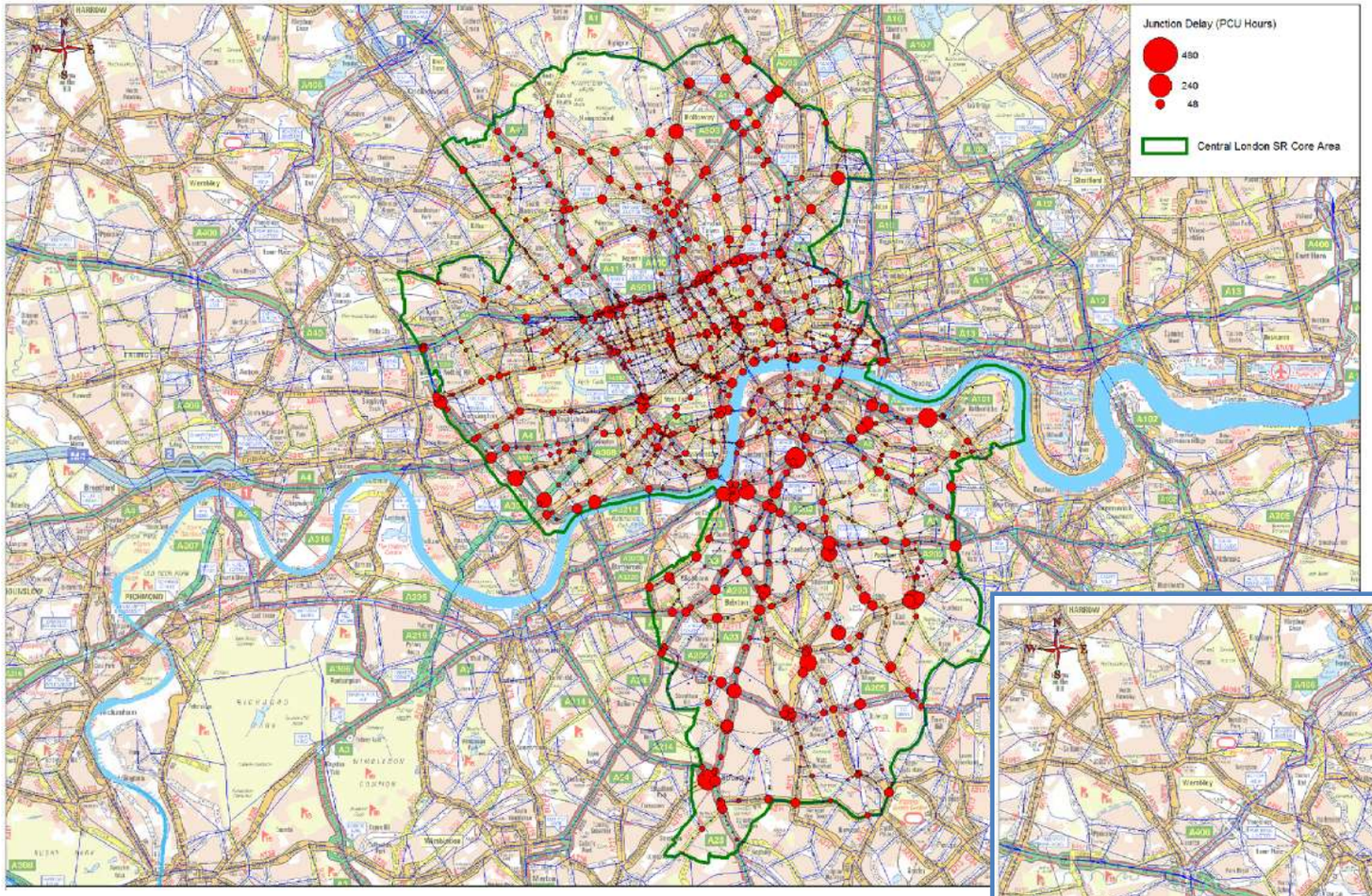
By 2015:
  - CS1 Tottenham to the City
  - CS4 Woolwich to London Bridge
  - CS6 Penge to the City
  - CS10 Park Royal to Hyde Park.
- Linking Places fund:
  - Creation of a cycle hub at Peckham Rye within a Grade 2 listed building using disused arches to the East of the station: a cycle shop, maintenance/ repair shop, a Brompton Dock hire system, controlled access system, monitored CCTV and help point.
  - Replace existing cycle parking at Marylebone with double-stack solution and install CCTV.

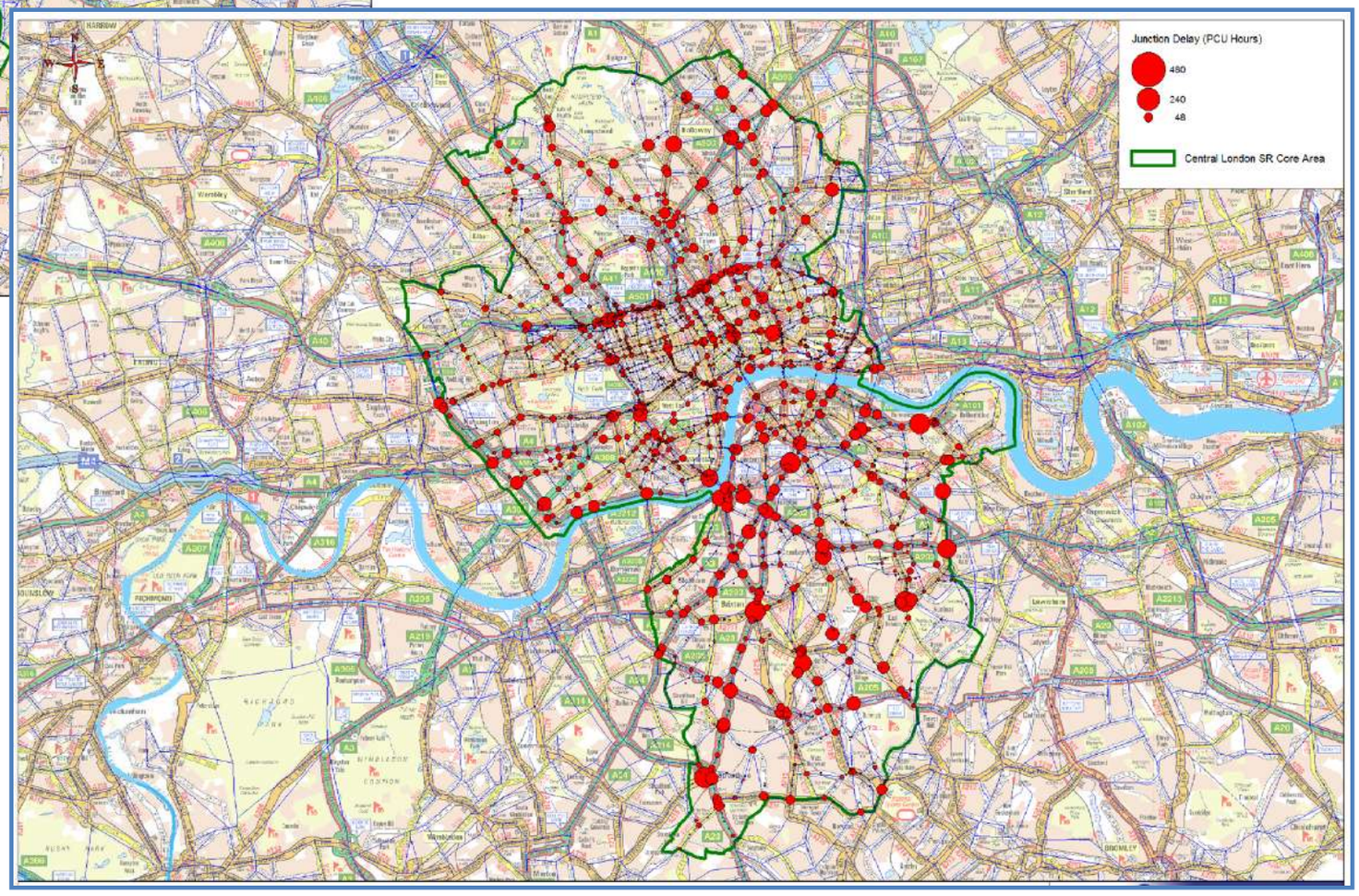
Potential initiatives beyond the Business Plan:
- Bakerloo line upgrade.
- Central line upgrade.
- Waterloo & City line upgrade.
- Northern line Upgrade 2.
- Piccadilly line upgrade.
- Cycling in Royal Parks.
- A potential Barclays Cycle Hire Phase 3 could be extended to west and southwest of the current scheme into Kensington and Chelsea, Hammersmith and Fulham, and Wandsworth.
- Urban realm improvements across the region, including greening of street environment, accessible crossings and widened footways.
- Possible DLR extension from Bank.
- Consideration of more 20mph zones to improve pedestrian and cycling safety.
- Improved 'Valuing Urban Realm' toolkit to inform decision-making.
- Clear Zone approach rollled out in the region along with Legible London and improved wayfinding.
- London-wide measures to tackle emissions:
  - Encourage the use of ultra low carbon / electric vehicles in car club fleets
  - Ensure electric vehicle infrastructure is provided as part of all new developments
  - All buses to be low emissions / hybrid
  - All taxis to be capable of zero emissions by 2025
  - Work with boroughs to introduce lower business rates for companies with low emissions vehicle fleets
  - Low carbon / emissions zones

Stations numbered on the map:
1 Marylebone
2 Euston Square
3 Euston
4 Camden Town
5 Camden Road
6 Farringdon
7 Moorgate
8 Liverpool Street
9 Whitechapel
10 Bank
11 Cannon Street
12 Waterloo
13 Charing Cross
14 Blackfriars
15 Tottenham Court Road
16 Bond Street
17 Holborn

APPENDICES

Appendix A: CLoHAM AM peak hour absolute PCU Hour Junction Delays in 2009 and 2031





Comparing junction delays between 2009 and 2031 highlights worsening conditions around the Vauxhall Nine Elms Battersea (VNEB) Opportunity Area, particularly the Vauxhall gyratory.

Appendix B: Walk Market Segmentation - London segments

Segment	Description	Average walk stages per day	% of London population
Active urbanites	A prime target for walking. Tend to be quite young, well educated and reasonably well-off. Have very busy lifestyles and usually live close to town or city centres. Many choose to live without a car.	4.8	18%
Cosmopolitan lives	Affluent professionals, living and working in central locations. Enjoy a cosmopolitan lifestyle and use a variety of modes to get around, including walking.	4.7	13%
Cultural diversity	With below average incomes and concentrated in central areas, they tend to be young families of mixed ethnicity. Above average users of public transport but only around average for walking.	4.4	26%
Suburban living	Commonly families with children on middle incomes, living in pleasant suburban areas. Tend to be white collar workers, using their cars in preference to public transport or other modes for work and leisure. Walk less than average, both in terms of the number and length of trips.	3.6	21%
Family enterprise	Low to middle class couples and families with high aspirations but relatively limited means. Typically live in areas of social housing in outer parts of the city. Likely to have access to a car and walk less than average.	3.5	7%
Well off and well educated	Affluent older couples with a high level of disposable income. Live in exclusive suburbs and enjoy active social lives, travelling in to central locations to access restaurants, bars and theatres. Less likely to use public transport and tend to have access to more than one car.	3.5	10%
Comfortably settled	Mature families or older couples on middle incomes. Often live in family homes or older town houses on the periphery of a town centre. Tend to travel by car for work and leisure. Of all the segments, have the lowest propensity to walk.	3.3	7%

Appendix C: TLRN Junction Review

Junctions on the Transport for London Road Network in the central London sub-region where review work has already started:

Junction	Borough
Albert Embankment (Lambeth Bridge/Lambeth Road)	Lambeth
Euston Circus (Euston Road / Tottenham Court Road / Hampstead Road)	Camden
Highbury Corner	Islington
Queens Road / Asylum Road	Southwark
St George's Circus (Blackfriars Road / London Road / Borough Road)	Southwark
Swiss Cottage Gyratory	Camden
Waterloo (including IMAX roundabout – York Road / Stamford Road / Waterloo Road / Waterloo Bridge)	Lambeth

Junctions on the Barclays Cycle Superhighways in the central London sub-region where review work has already started:

Junction	Superhighway
Aldgate Gyratory (Mansell Street)	CS2
Chelsea Bridge / Grosvenor Road	CS8
Clapham Common / The Pavement	CS7
Clapham South	CS7
Claverton Street / Aylesford Street	CS8
Horseferry Road	CS3
Lambeth Bridge	CS8
Lupus Street	CS8
Vauxhall Bridge / Grosvenor Road	CS8

Reference Number	Scheme	Description	Completion 2010– 2012*	Completion 2013– 2020†	Completion Post 2020	Status update
	Rail (DfT/Network Rail/TOC led schemes)					
2	High Speed 1 domestic services enhancements	Enhanced domestic services				Completed
3	High Speed 2 - new line from London northwards	London to the West Midlands and beyond with Strategic interchange at Old Oak Common and terminus at Euston. Opportunities to link into West London line, North London line, Crossrail and Heathrow Express as well as High Speed 1				Government announcement made about route and further work underway through OAPF process.
4	Thameslink phase 1	Phase 1: 12-car capability on most of mainline and 16 trains per hour through core				Capability provided Dec 2011
5	Thameslink phase 2	Phase 2: 24 trains per hour through core, expanded network				Anticipated for completion in 2018
6	Thameslink - potential further enhancements	Lengthening more shoulder peak services to 12 cars				Proposals subject to future development, current focus is on delivery of Thameslink programme.
7	West Anglia enhancements	More trains lengthened to eight cars on inner services and Twelve-car capability (outers) to Stansted and Cambridge				Completed December 2011
8	West Anglia enhancements	Lea Valley four-tracking - potential for enhanced frequency (4tph to local stations) and journey time improvements for longer distance services.				HLOS 2 proposals for partial four-tracking submitted to DfT and are currently being considered.
9	West Anglia enhancements	Potential scheme to provide rail access from Chingford to Stratford via Hall Farm Curve, requiring increased platform capacity at Stratford				Not being progressed due to capacity constraints at Stratford regional station.
10	West Anglia enhancements	Provision of Seven Sisters to Enfield/Cheshunt shuttle service				Due to recent capacity enhancements this scheme is not being progressed but it remains a longer term option for increasing the frequency of services via Seven Sisters.
11	Essex Thameside enhancements	Twelve-car capability on all routes				Completed
12	Essex Thameside enhancements	Further capacity increases - 12 car shoulder peak trains				Proposals subject to future development
13	Chiltern enhancements	Enhanced inner suburban service				Completed September 2011
14	South central London enhancements	Ten-car capability on inner suburban				Platform extensions underway and largely completed.
15	South central London enhancements	Twelve-car East Grinsted services				Project completed giving 12-car capability on the route
16	South central London enhancements	Further capacity increases (including, redeveloping Victoria station with more platforms for Southern services, and further train lengthening (more inners to 12 car))				Victoria Station redevelopment in early stages of development with Network Rail.
17	South central London enhancements	Longer distance services to stop at Denmark Hill and Peckham Rye when East London Line extension phase 2 opens in 2012				Due end 2012
18	Southeast London enhancements	Train lengthening on services to Cannon Street/ Charing Cross - this includes 12 car capability at peak on all inners via London Bridge				Proposals subject to future development by Network Rail. There are some issues around availability of sufficient rolling stock.
19	Southeast London enhancements	Lengthen all South Eastern outers to 12 cars.				Proposals subject to future development
20	Southeast London enhancements	Conceptual scheme to redevelop Victoria station with additional platforms for South Eastern and grade separation of rail routes at Herne Hill				Proposals subject to future development, see item 16.
22	Southwest London enhancements	Ten-car capability on inner suburban and Windsor lines				In progress - station work underway, rolling stock re-formation underway

Reference Number	Scheme	Description	Completion 2010– 2012*	Completion 2013– 2020†	Completion Post 2020	Status update
23	Southwest London enhancements	Lengthen inners and more outers to 12 car and reopen Waterloo International for domestic services				Included in TfL's HLOS 2 proposals to DfT
24	Great Western enhancements	Train lengthening on long distance services				Train lengthening underway for short term. Electrification and new rolling stock will provide long term capacity increase
25	Great Western electrification	Electrification - initially Paddington to Oxford and Newbury via Reading, followed by further potential enhancements				Electrification (to Cardiff) is approved by DfT
26	Great Northern enhancements	Platform and train lengthening to 12 cars on outers				Completed
27	Great Northern enhancements	Additional inner suburban services (delivered by timetable re-structure and limited infrastructure works)				Proposals subject to future development
28	Great Northern enhancements	Further capacity increases (including potential transferring some Great Northern inner services onto Thameslink, instead of only outer services, as part of Thameslink programme)				Anticipated to be implemented with Thameslink in 2018
29	Great Eastern enhancements	Additional and longer outer services, plus more trains calling at Stratford				Completed
30	Great Eastern enhancements	Additional inner services (2 extra trains)				Delivered with December 2011 timetable change.
31	Great Eastern enhancements	Further capacity increases (outers only)				Proposals subject to future development, reccomended in RUS.
32	Airtrack service to Heathrow	Link Southwest London railway network to Heathrow (partly BAA funded)				BAA withdrew the TWA application in early 2011 given insurmountable technical issues and the withdrawal of public sector funding
33	Rail service standards	Improved first and last train time consistency, and off-peak service frequencies to be at least four trains per hour including weekends				Achieved on Southern. Included in HLOS2 proposals for Lea Valley line
34	Improved rail freight terminals to serve London	New and/or expanded rail freight terminals to serve London				Radlett (Herts) Midland main line Colnbrook (near Heathrow, Great Western) and Brent Cross Cricklewood schemes being progressed through the planning process.
35	Improved rail freight routes	Conceptual freight link from Barking to Gospel Oak line to West Coast Main Line				Proposals subject to future development
	Rail (TfL led schemes)					
36	Crossrail 1 core scheme	Core scheme: Maidenhead and Heathrow in the west to Shenfield and Abbey Wood in the east				Under construction, due 2018-19
37	Crossrail 1 westerly extensions	Westerly extensions and/or increased frequency west of Paddington - potentially to Reading and/or to connect with West Cost Main Line, possibly with an interchange with HS2 at Old Oak Common				Under consideration - links with HS2 work
38	Crossrail 1 easterly extensions	Easterly extension to Gravesend				Proposals subject to future development
39	London Overground enhancements	Completion of extension to Clapham Junction. 4tph to run Dalston Junction - Clapham Junction				Due end 2012
40	London Overground enhancements	Lengthen East London Line services and platforms to 5 cars				Included in TfL's HLOS 2 proposals to DfT
41	London Overground enhancements	Further train lengthening				Included in TfL's HLOS 2 proposals to DfT
42	London Overground enhancements	Diversion of Watford Junction services to Stratford (instead of Euston) to release capacity for High Speed 2 at Euston				Under consideration - links with HS2 work

Reference Number	Scheme	Description	Completion 2010– 2012*	Completion 2013– 2020†	Completion Post 2020	Status update
45	Crossrail 2	Enhanced southwest – northeast London capacity and connectivity. All new infrastructure will be fully accessible.				Safeguarding under review - report to the Mayor (to inform DfT discussions) due before end 2012.
	Stations and interchanges					
46	Tube station congestion relief schemes	Works at Tottenham Court Road, Kings Cross, Farringdon, Liverpool Street / Moorgate, Bank, London Bridge, Blackfriars, Victoria, Paddington and Bond Street stations to relieve most severe congestion pinch points on the network, as well as providing step-free access				Schemes in delivery or development
47	Further Tube station congestion relief schemes	Targeted station capacity expansion programme				Vauxhall station and Finsbury Park schemes have been approved and funded. Prioritisation study for further schemes is underway
48	Tube station refurbishment/ modernisation programme	Continuing programme of refurbishment/ modernisation of stations				166 Tube stations have been refurbished since 2008
49	Rail termini enhancement	Passenger congestion relief/onward movement capacity enhancement works. Schemes under development				Termini report published
50	Develop strategic interchanges	Programme of schemes under development including increasing frequency on orbital London Overground routes, stopping more trains at strategic interchanges, and improving pedestrian routes				Revised design developed for proposed link between Hackney Central and Hackney Downs stations. Overground service upgrades introduced May 2011. ELLX Phase 2 to open to public in December 2012.
51	Rail station refurbishment/ modernisation programme	Delivery of National Station Improvement Programme (NSIP) in London, and other service standards as agreed in rail franchises (Station facilities, notably availability and quality of CCTV, help points, shelter, lighting, passenger information, cleanliness, cycling facilities such as parking, and availability and quality of ticket retailing)				NSIP works nearing completion at Norbury and Balham. New Greater Anglia franchise will deliver station deep cleans and extra cycple parking facilites by 2013. Lobbying continues for enhancements on other routes.
58	Improved surface-rail interchange	Improvements including enhanced bus services, interchange and urban realm at selected Crossrail and/or Thameslink stations				Rolling programme of master plans being developed with local authorities at all Crossrail locations, initial work reviewing bus needs underway.
60	Elephant & Castle interchange improvements	Interchange improvements between bus and Underground at Elephant & Castle (developer funded)				Advanced negotiations with landowners and Local Authority ongoing.
	Tube					
62	Jubilee line upgrade	Jubilee line - upgrade involves installation of new signalling to provide faster more frequent services and provide 33% more peak capacity and 22% reduction in journey time				Signalling upgrade complete
63	Northern line upgrade phase 1	Phase 1: Northern line upgrade to provide additional capacity and improve journey times				Signalling upgrade underway. To be completed 2014
64	Northern line upgrade phase 2	Phase 2: Northern line Upgrade 2 to deliver a further 33 per cent increase in peak capacity through the simplification and recasting of service patterns				Options under consideration.
65	Northern line extension	Extension to Battersea, developer-led, to support the regeneration of the Vauxhall/Nine Elms/Battersea opportunity area				TfL progressing the proposed extension
66	Victoria line upgrade	Victoria line upgrade including new rolling stock and signalling to provide additional capacity and improve journey times				Largely complete - new trains and signalling in place - new timetable to be introduced 2013
67	Piccadilly line upgrade	Piccadilly line upgrade to provide additional capacity and improve journey times				Under development as part of Deep Tube Programme
68	Sub-Surface Line Upgrade	Circle, District, Hammersmith & City and Metropolitan line upgrade (including new air-conditioned rolling stock and new signalling) to provide additional capacity and improve journey times				New trains being delivered, signalling work underway, due to be complete by 2018.
70	Bakerloo line upgrade	Bakerloo line upgrade: Including new energy efficient and high capacity rolling stock and signalling				Under development as part of Deep Tube Programme
71	Bakerloo line extension	Potential Bakerloo line southern extension from Elephant & Castle via Lewisham to Hayes and Beckenham Junction.				Scheme options to be further reviewed.

Reference Number	Scheme	Description	Completion 2010– 2012*	Completion 2013– 2020†	Completion Post 2020	Status update
72	Cooling the Tube programme	Enabling operation of services post line upgrades and improved passenger comfort.				The programme continues to improve the network ventilation system by returning out of service fans to beneficial use. The station cooling projects at Oxford Circus and Green Park have been accelerated and are on track to deliver cooling in time for the Olympic period.
73	Tube network core asset renewal	Programme of core asset renewal to lock-in benefits from the upgrades and maintain assets in a state of good repair				Ongoing
74	Energy-saving initiatives	Initially, a programme of trials to include low energy lighting, smart electricity metering at stations and low loss conductor rails				A detailed study has been prepared looking at factors such as inverter substations, extra low loss conductor rail, coasting, sectionalisation and changes to voltage and current settings. A trial is being planned for an inverter substation on the Victoria line and key energy saving initiatives are being considered as part of the base case for the deep tube programme. These include full use of extra low loss composite conductor rail in tunnels, higher voltages (750 v) and higher regenerative braking currents (4,500A). Additional measures such as inverter substations, amended sectionalisation and permanent magnet motors are under current review and will be incorporated into the base case if determined desirable.
75	Regenerative braking and automatic train control	To be implemented as an integral part of the Tube upgrade programme				Ongoing
	DLR					
76	Network-wide capacity upgrade	Infrastructure enhancement to enable three-car operation network-wide				Completed
77	Network-wide capacity upgrade	Provision of additional rolling stock to provide further three car services				Funding to be secured
79	DLR extensions	Potential extension westwards from Bank				Scheme options to be further reviewed, subject to development of sub regional plan
	Tramlink					
	Bus					
91	Bus network development	Regular review of bus network, including reviews of the strategic priorities underlying the process approximately every five years, to cater for population and employment growth, maintain ease of use, attractive frequencies and adequate capacity, reliable services, good coverage and good interchange with other modes				Regular reviews ongoing. Bus service to be discussed with sub regional panels during 2012
92	Bus network development	Re-patterning of bus services to take in to account new infrastructure and the related changes in demand				Impacts of Crossrail currently being assessed and discussed with boroughs, see item 58.
93	Development of a New Bus for London	Pilot to create new iconic bus for London (which will include enhanced accessibility design features)				First bus entered service Spring 2012
94	Phasing out of 'bendy' buses	Anticipated by the end of 2011				Completed
95	Low emission buses	Intention that all new buses entering London's fleet post 2012 be low emission (initially diesel hybrid)				300 diesel hybrid buses are to be introduced by 2012.
96	Enhanced real time service information	Delivery of Countdown 2; enhanced real time information at stops, on internet and mobiles				Largely complete
97	Bus priority	On a case by case basis, implement bus priority measures to maintain service reliability				Bus service to be discussed with sub regional panels during 2012
98	Provision of suitable bus infrastructure to support Opportunity Areas/new developments	Review individual developments on a case by case basis and provide as necessary bus priority measures, accessible bus stops, additional bus stands, upgraded or new bus stations. To be delivered in phases to support development in area				This is an ongoing requirement and will be particularly important in serving some of the large new developments which are planned in east London. A recent example is the opening of the Stratford City bus station in September 2011 which was paid for with developer contributions.

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99	Provision of suitable bus infrastructure to respond to new rail infrastructure such as Crossrail, Tube Upgrades, HLOS upgrades	Review individual sites on a case by case basis and provide as necessary bus priority measures, accessible bus stops, additional bus stands, upgraded or new bus stations. To be delivered in phases to support development in area.				New rail services may mean that amended or new bus infrastructure is desirable at interchanges, depending on demand and service changes. TfL is currently discussing the potential Crossrail-related bus demand changes around stations with the affected boroughs. See item 90.
100	Additional bus stands and upgraded or new bus stations	On a case by case basis, provide additional bus stands and/or upgraded or new bus stations to support demand in specific locations in order to increase capacity and improve service reliability				This is an ongoing requirement which involves discussion with all of the key stakeholders including boroughs.
	Cycling					
101	Barclays Cycle Hire scheme	Around 6,000 bikes for hire in central London, scheme opening in 2010				Completed
102	Barclays Cycle Hire scheme enhancement	Possible expansion of area covered and/or additional bikes in Barclays Cycle Hire scheme where demand justifies				East extension to Bow will be delivered in Spring 2012
103	Additional cycle parking	Around 66,000 additional cycle parking spaces in London				Excellent progress has so far been made towards meeting the Mayor's aim to secure the delivery of 66,000 additional cycle parking spaces by the end of 2012.
104	Barclays Cycle Super Highways	Two initial trial radial routes to central London, followed by further routes				Four of twelve routes delivered, four more will be opened in 2013
	Walking and the urban realm					
107	London-wide 'better streets' initiatives to improve pedestrian connectivity and urban realm	Improvements to urban realm and pedestrian environment				Since 2009, a range of projects have been completed under London's Great Outdoors. By the end of 2011, 45 projects had been completed, and a further 35 are on track to be delivered by summer 2012.
108	Access to stations and surroundings	Targeted programme of works to improve accessibility and personal security on walk and cycle routes to stations and bus stops, prioritising activity based on current demand and future growth				This is being delivered as part of Better Street initiatives. Recent improvements have been made to Green Park and Clapham Junction.
110	Walking information and campaign	Walking campaigns, including the '2011 year of walking', that will focus on walking routes, wayfinding , events and activities				The Making Walking Count Campaign was run successfully in 2011. One of the highlights was the public transport congestion relief pilot held in September 2011, promoting walking trips
111	Improved wayfinding	Targeted introduction of on-street wayfinding specifically designed for pedestrians, for example, using 'Legible London' principles				The Legible London base map of Greater London was completed in December 2011. TfL supplied Legible London mapping to Network Rail; train operating companies (TOCs), LOCOG and Crossrail, ensuring the system continues to spread across London's transport network. In 2011/12 Legible London mapping has been further integrated within the TfL family, including Crossrail hoardings, Barclays Cycle Hire docking stations and on Barclays Cycle Superhighways routes.
112	Urban realm improvements as part of the Mayor's Great Spaces initiative	Urban realm improvements to revitalise some of London's recognised and lesser known streets, squares, parks and riverside walks				Schemes along Grand Union Canal, Exhibition Road, Piccadilly 2-way system, Britannia Junction and Russell Square delivered, amongst others.
113	Urban realm improvements in town centres	Urban realm improvements				The new Great Outdoors programme will focus on town centre regeneration. Most of the key walking routes below are linked with town centres.
114	Improving urban realm and walking conditions on key routes which have high demand, for example between stations and town centres	Urban realm improvements				Ten Key Walking Routes were delivered in 10/11. Another nine Key walking Routes will be delivered by March 2012. These include: Cheapside, Euston to St Pancras, Camden, Ruckholt Road, and Bromley North Village.
115	Investigation of merits of Event days (e.g. traffic free days in appropriate locations)	Urban realm improvements				Investigations are ongoing about traffic free days, including lessons learned from the 2012 Games and ORN/PRN use.
116	Schemes to re-model junctions to reduce severance and improve safety and urban realm, such as at Elephant & Castle	Urban realm improvements				These schemes are continually being delivered like: Clapham Junction; Elephant and Castle; Exhibition Rd; Piccadily two way; Britannia Junction.
117	Pedestrian and urban realm improvements in the vicinity of major rail termini and stations, in particular new Crossrail stations	Urban realm improvements				Pedestrian and urban realm imporvements have continued to be developed and delivered in the vicinity of rail terminni, including Crossrail stations. Schemes include: Tottenham Court Rd station; Kings Cross Station; Victoria Station; London Bridge; Green Park; and Clapham Junction.
118	Urban realm improvements in key locations in central London	Pedestrian and urban realm improvements, potentially in locations such as West End (e.g. the vicinity of Piccadilly, Pall Mall and St James), vicinity of the river (e.g. Jubilee Gardens) and other key locations with very high footfall				Schemes along Grand Union Canal, Exhibition Road, Piccadilly 2-way system, Britannia Junction and Russell Square delivered, amongst others

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119	Increased tree and vegetation coverage	Additional 10,000 street trees by 2012 (funded), with a target of an additional two million trees in London's parks, gardens and green spaces by 2025				Over 5,000 trees have been installed in the Olympic Park and London is set to meet its 10,000 street tree target by the end of 2012.
	Roads					
120	Improved traffic control on London-wide and sub-regional corridors	Improved traffic control systems, for example further roll out of SCOOT				Ongoing
121	Improved management of planned interventions on London-wide and sub-regional corridors	Minimising the impact of planned interventions on the road network with the potential to disruption traffic flows through the use of the permit scheme for road works for example				Ongoing
122	Improved management unplanned events on London-wide and sub-regional corridors	Minimising disruption from unplanned events (accidents, emergencies etc) in 'real time' as they occur and returning the network quickly and efficiently to its planned steady state operation as soon as possible				Ongoing
123	Review of loading and waiting restrictions in central London and elsewhere	Review and report on potential improvements - using a targeted demand led approach				The Intelligent Transport Systems (ITS) sector is developing a 'virtual' loading bay solution designed to help reduce congestion. As the technology comes to market, TfL will investigate possibilities for deployment on the TLRN and borough road network, in conjunction with borough councils.
131	Potential gyratory and one-way system improvements, for example to remove one-way systems Tottenham Court Road / Gower Street	Improvements to make greater contribution to urban realm, environmental, safety and quality of life goals, for example, as well as enabling appropriate vehicular movement and smooth traffic flow				Feasibility being assessed
137	Further highway enhancements and/ or changes to the local road network	Consideration of further highway enhancements that will smooth traffic flow and/ or changes to the local road network related to major developments in response to increased local demand				TfL's Capital Development Team continues to enhance the Transport for London Road Network (TLRN) through the delivery of small schemes including new cycle lanes, revisions to pedestrian crossings and urban realm improvements.
138	Achievement of state of good repair of road infrastructure	Ongoing programme of maintenance				Ongoing
139	Continue trials of intelligent speed adaptation technologies	Continue trials and technology development				Ongoing
140	Encourage further implementation of average speed camera technology	Continue trials and technology development				Average speed cameras were implemented on the A13 in 2011 with enforcement by the Metropolitan Police. TfL is closely monitoring collision rates and initial results are positive. TfL's network of speed cameras are currently being renewed and average speed cameras are likely to replace existing speed cameras on suitable sections of the TLRN.
141	Investigation of merits of 20 mph zone or zones	Assess contribution of 20 mph zone or zones in central London or elsewhere to MTS goals including safety, air quality, CO2 and congestion benefits				Some boroughs have implemented, further investigation to take place
142	Car club support	Support expansion of car clubs				With support and funding, 46% of London residents now live within 5 minutes' walk of a car club vehicle.
143	Low Emission Zone enhancements	Further LEZ enhancements and vehicle coverage				LEZ phases 3 & 4 delivered
144	Provision of infrastructure to support low emission road vehicles	Introduction of electric vehicle recharging points by 2015 and support distribution networks for other alternative fuels such as hydrogen and biofuels (unfunded)				Source London has delivered 300 publicly accessible charge points, set to grow to 1,300 by 2013
145	Continue to work with DfT on road pricing feasibility programme	Review the option of road user charging and/ or regulatory demand management measures to influence a shift to more CO2-efficient road vehicles and lower carbon travel options, such as walking, cycling and public				Mayor's Climate Change Mitigation and Energy Strategy published, setting out approach to reducing CO2 emissions
146	Promote emission-based parking charges	Boroughs and car park operators to be encouraged to expand coverage of parking charges to vary by duration of stay and vehicle emissions				Parking review undertaken for Outer London Commission
147	Congestion Charge Western Extension	Remove the Western Extension of the central London Congestion Charge and mitigate where possible				Completed
148	Core central London Congestion Charging zone	Charge increase to £10 (9 for CC auto-pay), accompanied by user improvements				Completed

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149	Core central London Congestion Charging zone	Ongoing reviews to enable variations to ensure the continued effectiveness reflect best practice, improve operation, or help deliver desired outcomes of the strategy				Review of Greener Vehicle Discount underway
	London river services and river crossings					
153	Improvements to Thames passenger services	Consistent service standards, examine opportunities for enhanced pier facilities (including at North Greenwich and Isle of Dogs) and development of the River Concordat				Thames strategy under development by GLA / Mayor
154	New Thames passenger services	Encourage new passenger Thames services to support development of VNEB Opportunity Area				St Georges pier opened and served by Thames Clipper
155	Promote the use of Thames and other waterways for freight movement	Enable freight access to waterways				Safeguarded Wharves review underway
	Other measures					
156	Integrated fares and ticketing	Integrated fares collection system and ticketing across all London public transport services, including Oyster zonal fares on all suburban rail services and Oyster on river services				Oyster now on all national rail services in London as well as all TfL modes
157	Enhanced travel planning tools	Ongoing programme of enhancements to information availability, including TfL Journey Planner				The TfL Journey Planner has undergone a series of improvements to increase capacity and enable access to third party developers under our open data arrangements for the production of new applications and services. A dedicated piece of software has been built for this purpose. For the 2012 Games improvements are being made to the Journey Planner accessibility information to enable better planning of level access routes. Customer information has been improved through the launch of the new Bus Arrivals service which advises customers of the arrival times of the next buses from any bus stop on the network. Information for drivers has been imprved through the launch of an improved Traffic Information facility which also now shows the key road corridors in London as well as supporting information on how those corridors are managed.
159	Targeted smarter travel initiatives	Smarter travel initiatives to reduce the environmental impact of travel, make more efficient use of limited transport capacity and/or encourage active travel such as walking and cycling				TfL have introduced targeted smarter travel initiatives along the Barclays Cycle Superhighways including cycle parking, training and safety checks.
160	Increased use of travel plans	Increased use and power of travel plans for workplaces, schools and individuals				TfL funding for voluntary Workplace Travel Plans stopped in 2010, however employers are still requested to initiative Workplace Travel Plans as part of the development control process as set out in London Plan and on the new website http://www.lscp.org.uk/newwaytoplan/ and boroughs can still take forward e.g. the north London boroughs have jointly funded Work Place Travel Plan Coordinators. 94% of London schools have a travel plan in place and one third are registered on the School Travel Accreditation scheme (STAR). These schools demonstrate a higher than average increase in active travel modes and a reduction in car use. A new monitoring tool has been developed to record schools achievements (STARTRACK). More details can be found at www.stacceraditation.org.uk
161	Continued development and roll-out of freight initiatives	Town centre and area-based DSPs, CLPs and promotion of collaborative approaches such as consolidation centres and/or break-bulk				A closely-monitored trial of a DSP at a TfL building has seen the number of overall deliveries reduced by 20%. TfL is promoting a number of measures to be taken up by freight operators and their clients in order to reduce the number of freight and servicing trips on the road network during the Games. TfL will monitor their effectiveness for future application in Legacy. Planning policy (Replacement London Plan published July 2011) is supportive of the principle of privately financed consolidation centres.
162	Promotion of freight best practice	Development and incentivisation of membership of the FORS and develop functionality of the freight information portal				Close work with the freight industry is being undertaken to promote the four 'Rs' for 2012 Games.

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163	Integrated transport policing	Establish joint transport policing intelligence unit and reporting systems to enable integrated working between the agencies policing London's transport system				TfL funds a dedicated unit within the Met - the Safer Transport Command. It provides additional police support to London's buses, licensed taxis and private hire vehicles. It also helps to reduce congestion and bus flow issues, improves the safety and security of cycling and enforces red route parking restrictions.
164	Tackling antisocial behaviour	Programme of initiatives to tackle antisocial behaviour, including preventative and enforcement measures				TfL has more than 2,500 TfL-funded police officers patrolling the network. Specialist transport police units focusing on specific issues like illegal cabs, criminal damage, theft, robbery and staff assaults and around 500 revenue inspectors patrolling the network to reduce fare evasion and tackle antisocial behaviour
165	Transport system climate change adaptation	Develop a strategy to improve transport system resilience and safety to the impacts of climate change				Mayor's Climate Change Adaptation Strategy published
166	Olympic & Paralympic Transport Legacy Action Plan	A range of interventions to secure the maximum benefit of the physical infrastructure provided for 2012; staging of the event and longer term opportunities this presents; behavioural change as a result of the event; and				Action Plan to be published early 2012
	Accessibility					
167	Crossrail accessibility	All stations through central London and the majority of stations in Outer London to offer step-free access				Under construction
169	Crossrail 2	All new infrastructure will be fully accessible				Proposals subject to future development. See item 45.
170	New accessible tube and rail rolling stock	New rolling stock will be Rail Vehicle Accessibility Requirements compliant				Victoria line delivered, Subsurface underway
171	National Rail step-free access station programme	DfT's Access for All to increase number of step free rail stations in London to 160 (47 per cent) by 2015, from around 100 today				DfT has funded an additional 10 station schemes for delivery by 2015
172	Continuing roll out of step-free access schemes on the Underground	Continuing programme of station step-free access schemes				Green Park opened Sep 2011. Vauxhall is now a committed scheme.
173	Tube platform to train level-access	Platform humps rolled out across the Tube system as new rolling stock is introduced to provide level access from platform to train				Humps completed on Victoria line.
174	Tube station upgrade programme	To include some of the following features at upgraded stations: - Audible and visual information at all platforms and ticket hall - Improved handrail colour contrast and design - Improved visual contrast at leading edge of each riser and tread on steps - Removing, modifying or highlighting obstructions - Induction loops at Help and Information points - Listening points at some stations - Improved lighting and public address systems - Improved signs and wayfinding - Tactile walking surfaces on every platform and staircase - Increased amounts of seating				Ongoing
175	Tube wide-aisle ticket gates	Explore opportunities for further implementation of wide-aisle ticket gates				More than 250 wide aisle gates have been installed on Underground stations
176	Tube travel information	Accessible Tube map showing step-free and mostly step-free routes				Map published on TfL website
177	Bus stop accessibility	Improved accessibility of bus stops, for example, through removal of street clutter				59 per cent of bus stops are now accessible, up from 29% since 2008
178	Development of a New Bus for London	New bus will include enhanced accessibility design features				First buses on street and remaining to be delivered in 2012. See item 91.
179	Accessible crossings programme and urban realm improvements	Improve the physical accessibility of the streetscape, particularly in town centres and on routes to stations and bus stops, taking account of the whole journey approach.				Accessibility continues to be improved through the Better Streets and Major Schemes Programmes. In addition TfL has set out it's current targets in the Draft Accessibility Implementation Plan which was published in 2011.

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180	Travel information	Improve the availability, quality, quantity and timeliness of accessibility-related travel information				Numerous improvements made, including on-train and on-station information improved on Tube; on-bus and at-stop info improved on bus services; better real time information on mobile and internet. See also item 94.
181	Staff availability	To ensure staff are available to provide assistance, information and reassurance throughout services hours				A trial of the 'Inegrated Interchange Management and Staff Assistance Programme' has been conducted at Finsbury Park and Marylebone/Baker Street which involves improved sharing of information between staff at different stations.
182	Staff training	To ensure the needs of the disabled passengers are understood by all frontline staff				All front line staff working in Tube stations receive disability awareness training, and undertake a refresher course every year. Bus driver big red book in use and also being developed
183	Initiatives to improve attitudes of staff and travellers	Stakeholder, staff and public initiatives to improve staff and public attitudes and raise awareness of people's accessibility needs				Programme under development.
184	Enhanced Dial-a-Ride service	New Dial-a-Ride fleet and review of operations				Dial a Ride made a record 1.3 million trips in 2010/11, an 18 per cent increase on 2007/08 with 200,000 more journeys
185	Further Extensions to the public transport system	All extensions to the public transport system will meet the requirements of the Disability Discrimination Act				All new London Overground stations are step-free such as Shoreditch High Street, Hoxton, Haggerston, Dalston Junction and Imperial Wharf.
186	Blue Badge discounts	Discounts on Congestion Charging schemes				Ongoing
187	TfL's Disability Equality Scheme (DES)	A statutory document, updated every three years, which sets out in further detail what TfL is going to do to ensure that the services it offers are accessible to disabled people				To be revised during 2012 as a Single Equality Scheme under the Equality Act 2010
	International and national rail links (DfT/Network Rail/TOC led schemes)					
188	High Speed 1 international service enhancements	Direct services to a wider range of European destinations (making use of new European infrastructure)				It is expected that Eurostar and other international operators will provide access to a wider range of European destinations from St Pancras International during the course of the next 5 years.
189	Potential link between High Speed 1 and High Speed 2	Potential link between HS1 and HS2 allowing through services between HS2 and Europe, including calls at Stratford.				To be subject of further investigation by HS2.
190	West Coast Main line enhancements	Train lengthening and frequency improvements to London Midland services				Programme to be defined (for delivery in 2014)

*2012 for TfL schemes and 2014 for Network Rail schemes (as per HLOS CP4)

† 2013 for TfL schemes and 2015 for Network Rail schemes (post HLOS CP4)