



South London

Sub-regional transport plan – 2012 update

MAYOR OF LONDON



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 TfL to work closely 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 which 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 Addendum also allows progress made across the south 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 our ability to generate economic growth in the future. Ensuring there are adequate connections to HS2 to the south sub-region, will be essential if businesses and residents in the region are to fully benefit from this. The importance of this is magnified by the fact that the Airtrack project was cancelled earlier in the year.

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%. Over the coming months the extension of the London Overground from Surrey Quays to Clapham Junction will also start operating, completing the transformation of London's orbital rail system.

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. Later this year TfL is also introducing a new bus for London, further adding to a bus service which is of the highest quality since records began.

Other useful 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 provide an opportunity to ensure a future scheme best serves future needs as currently perceived.

The financial context remains constrained, but, it remains vital that we look beyond the current Business Plan, continuing to plan and address the challenges which 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.

As well as highlighting what progress has been made this addendum also sets out the considerable challenges which remain. In response to the challenges TfL and the boroughs need to work together to develop a viable range of measures supported by a funding package.

With the growth which is forecast in London it is vital that every effort is made to manage our roads and public spaces effectively. Urban realm which is conducive to access by public transport, walk and cycle has been shown to have positive economic benefits. TfL will work with boroughs in the sub-region to ensure that the long term needs of both radial and orbital key corridors and places are balanced, to achieve win-wins where possible, or to make choices about which objectives to prioritise.

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 allowed us to update our understanding of the outstanding transport challenges facing the south sub-region and to refresh our view as to how to these could best be met.

It is for the sub-regional Panel, formed of the participants of the South London Transport Strategy Board to discuss this draft update 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 south sub-region fulfils its potential.

Peter Hendy Jan 2012



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2. Context

3. Progress Report

4. Update on the transport challenges

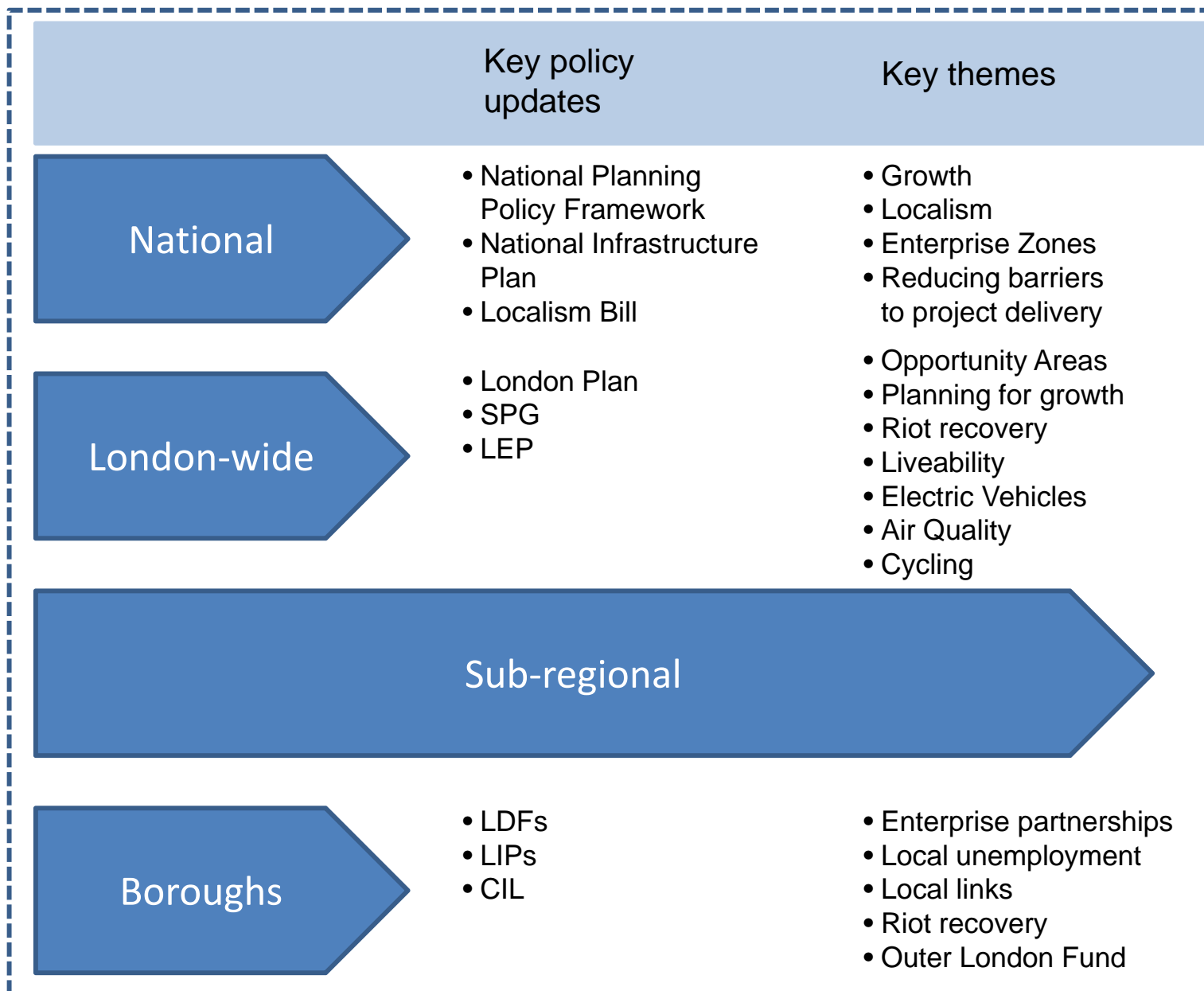
5. Responding to the challenges: beyond the Business Plan

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2. Context

2. Context



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 South London, these are Croydon and Vauxhall Nine Elms Battersea in conjunction with the sub-region's designated Strategic Outer London Development Centres: Biggin Hill, the Wandle Valley and Croydon. Other Mayoral strategies, including Supplementary Planning Guidance documents, also raise transport needs.

This focus on the economy does not mean other outcomes are not important. In fact, the events of summer 2011 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's Transport Strategy Accessibility Implementation Plan has been published, following a consultation period during 2011. It highlights priorities for improvements in the physical accessibility in London's transport system.

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 addendum is the issue of how we plan for growth across London and the particular challenges in

south London in this regard. The scale of the growth we need to accommodate 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. South London will need to play a key role in supporting and driving this growth – but we also need to ensure 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 we can support more sustainable travel options – is one of the principal objectives of the ongoing work in the sub-region. There is also an aspiration to rebalance the national economy away from a perceived overreliance on the financial services sector.

Borough level

The context of the Local Development Framework's and Local Implementation Plans published by the south London boroughs is also critical.

Local needs will also be influenced by the findings of the Outer London Commission, re-formed to address issues such as town centre development and the need for flexibility in parking standards.

Boroughs also have the opportunity to introduce borough CILs to meet local needs.

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

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 which the Government hopes will help stimulate economic growth and this included the Northern Line extension through the Vauxhall Nine Elms Opportunity Area which is to be made into an Enterprise Zone.

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.

3. Progress report

3. Progress report: The year in review

The focus of each SRTP is around a set of “core” boroughs; however the boundaries are intended to be flexible or “fuzzy” as transport challenges do not stop at borough or sub-regional boundaries. In some cases, information is already shared across the boundary, such as the results of town centre surveys and traffic models.

The Panel

The South London Transport Strategy Board continues to meet on a quarterly basis. The Board comprises senior representatives of all Boroughs in the sub-region as well as those on the ‘fuzzy boundaries’ such as Southwark.

TfL actively participate in the meetings and help set the agenda. The group is chaired and administered by the South London Partnership. Guest speakers have been invited throughout the year to discuss specific issues regarding, for instance, the Olympics or potential for European funding.

The south SRTP published in November 2010 identified a number of key challenges to be addressed. In order to investigate these further and develop action plans a number of working groups have been established. These are:

Rail – Chaired by LB Wandsworth, this group has focussed on a number of areas including developing a rail priorities position, identifying possible alternatives to Airtrack, considering implications of HS2 and discussing implications of Thameslink and proposed changes to the rail network.

Tramlink – Chaired by LB Croydon this group has been informing and helping shape a Tramlink Strategy which is under development. This strategy focuses on short – medium term enhancements to support capacity and frequency improvements to the system and longer term extensions.

Freight – Chaired by South London Business this group has identified a number of key issues such as consideration of delivery hours, deliveries and restrictions during the Olympics, a review of routing, signage and wayfinding and the kerbside delivery environment. The key issue under consideration is the value of consolidation centres in south London and the review of site locations and business case. This group involves both public sector and private operators.

Sustainable travel – Chaired by LB Sutton the group is focussing on a key issues such as pooling resources, extending the Smarter Travel concept, sharing travel planning, collective agreements for car clubs, exploring options such as radial cycle routes into town centres and encouraging the use of electric cars where appropriate.

Managing the road network – Chaired by LB Richmond this group has been sharing information particularly on TLRN performance. Key roads have been identified which require attention including the A205, A316 and A2043.

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 south sub-region are shown on the map overleaf.

There has been progress in a range of areas including capacity, connectivity and accessibility schemes on the public transport system and a wide range of initiatives which will help improve the sustainability of the transport system. These include schemes to encourage walking and cycling, other improvements to the public realm and the implementation of Phases 3 and 4 of the Low Emissions Zone. The introduction of an all new train fleet on the Victoria Line and the acquisition of six new trams on Tramlink have boosted capacity on TfL rail systems, with significant benefits in the south sub-region.

The more important developments on the national rail system affecting the sub-region include the opening of the first phase of the Thameslink upgrade and the completion of the roll out of the Oyster system, bringing fare and ticketing integration across London’s principal public transport modes.

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 improvements in the physical accessibility of the transport system also cover various modes. They include the completion of Access for All schemes at Clapham Junction, Wandsworth Town and Balham stations and a step free access scheme at Southfields station on the District Line.

TfL funding with borough support has allowed a network of seven Strategic Walking Routes to complete on time for the 2012 Games. TfL aims to work with the boroughs through LIPs to support and maintain usage of this network.

Bus use has increased significantly over the past 10 years, with an accompanied expansion of the network and growth in capacity on routes. There has also been an increase in levels of reliability, through the use of bus lanes and signal priority, as well as improved quality of customer service through training, information provision, e.g. ibus and Countdown, and the introduction of newer, cleaner buses.

In the south sub-region 62% of bus stops now meet all three of the accessibility criteria, including protection from parking/loading obstructions.

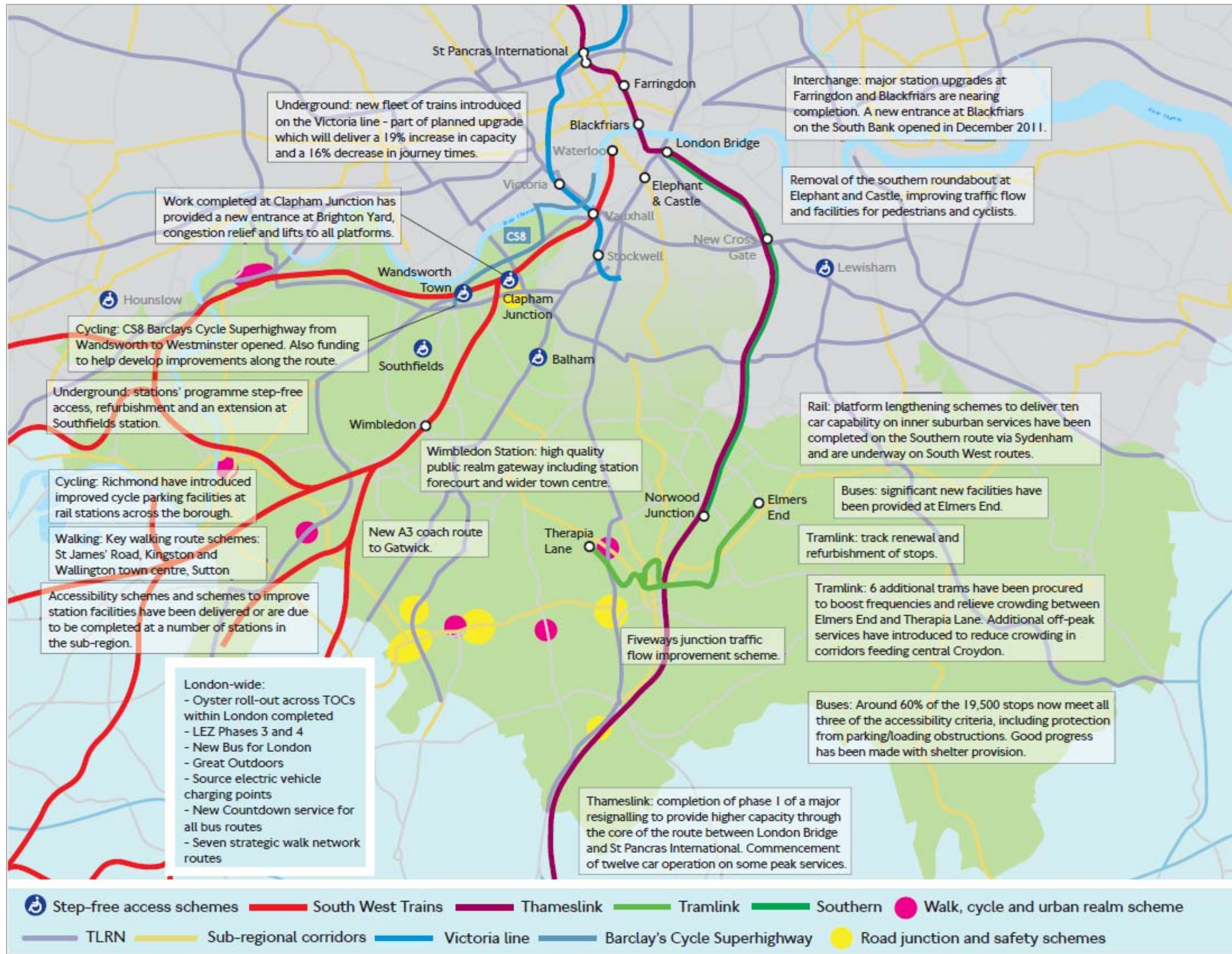
Service enhancements in the last year included increased frequencies on routes 12 and 453 on their conversion to double-deck operation and increased frequencies on routes 343, 380, 450 & 664. Route 110 was extended to West Middlesex Hospital and route 371 was extended in Richmond. Major new bus infrastructure facilities have opened at Elmer’s End.

The Low Emissions Zone (LEZ) entered stage 3 in January 2012 to include most vans and other commercial vehicles, Standards have become more robust for vehicles already covered by LEZ.

The London Lorry Control Scheme will be taking a light touch approach to enforcement during the Olympic Games. TfL is keen to work with London Councils to understand how the scheme can contribute to a reduction in freight’s economic and environmental impact through night-time delivery.

The main developments are summarised in the map overleaf.

3. Since the initial SRTP...



3. Committed schemes - summary

London Underground

The District Line will benefit from a signalling upgrade which will provide a 14% increase in capacity and be completed by 2018/19. New, air-conditioned trains will be in place by 2016. The Northern line upgrade will be delivered by 2014 and increase capacity by 20%. An upgrade to the Victoria line will increase capacity by 20%.

Victoria Line – a new timetable will be introduced in 2013 to further exploit the new signalling the upgrade has delivered. The line will operate with consistent headways below 120 seconds, pushing equivalent frequency up to 33 tph.

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%.

Priority stations for next generation schemes include an upgrade at Balham, on the basis of a forecast lack of escalator, ticket hall and gateline capacity. London Underground intend to examine the station's problems in more detail in the next 3 years.

Sub surface lines - New walk-through trains with air conditioning are being introduced. Due to be fully in service on the District Line by 2016. A signalling upgrade on the District line, set for 2018/19 will deliver a further 14% uplift in capacity.

London Overground

The Overground extension from Surrey Quays to Clapham Junction is due to open in December 2012. Access to Overground platforms will also be improved at Clapham Junction.

Tramlink

Six new trams have been ordered to boost capacity on services between Elmers End and Therapia Lane.

National Rail schemes

Thameslink

The Thameslink programme, Key Output 2, will deliver large amounts of new capacity in the Thameslink Core, however it should be noted that there will be a loss of through service north of Blackfriars for services via the Wimbledon loop.

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

A 1,200 vehicle fleet of Siemens trains is being procured for Thameslink which will facilitate commencement of metro style services in 2018.

South Eastern, South Central & South Western

Further Access for All schemes (providing step free access) and schemes to improve station facilities are due to be implemented at a number of stations in the sub-region e.g. Hackbridge Station.

There are plans for additional rail vehicles to be secured for use on inner suburban South Western and South Eastern routes to take advantage of the capability to operate the longer trains.

Network Rail announced a scheme to upgrade Gatwick Airport Station by 2013 which includes a new platform and improvements to the track and signalling.

Buses

By the end of 2012 there will be 300 diesel-electric hybrid buses 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

TfL is committed to contributing towards £1.3m joint TfL and Network Rail funding for station parking at stations including the launch of cycle parks at East Croydon and

Bromley South.

Four other delivery priorities have been identified to 2015:

- Working with Biking Boroughs to unlock cycle potential in outer London (Bromley, Croydon, Merton and Kingston)
- Targeted improvements at collision hotspots and urgent action to improve cycle HGV safety in order to reduce the number of cycle KSIs.
- Improving the cycling experience; including improved road maintenance, wayfinding and better routes.
- Harnessing excitement about the Olympics, including local Greenways; a walking and cycling incentives scheme and a large-scale active travel programme.
- A24 Cycle Route Stakeholder and Implementation Plan.

Walking and urban realm

By March 2012 TfL and the boroughs will have delivered 14 key walking routes, including 2 in the South region (excluding the Castle Street pilot).

With the Greater London base map for Legible London now complete major implementations are planned for Croydon, Clapham, Tooting and Sutton. LUL stations and London bus shelters will also transfer to Legible London mapping for customer information through a business as usual process. TfL is also working with Train Operating Companies to install Legible London maps across London's suburban rail stations.

A key delivery priority for walking beyond the three programmes above is to reduce the number of pedestrians killed and seriously injured across London, using targeted projects at collision hotspots.

A number of urban realm schemes which will improve conditions for pedestrians are being taken forward (e.g. Tolworth Broadway and Connected Croydon).

Accessibility

TfL 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. Journey Planner will also 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.

Accessibility in respect of signalised crossing facilities and bus stops should also be addressed as this impacts upon customer experience of the street environment.

Road network operation

TfL will continue to implement the interventions set out in the Network Operations Strategy. The Cycle Superhighways will be completed and Better Streets principles will be applied to improvements to the road network.

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

4. Update on the transport challenges

4. Reviewing South London's Transport Challenges

The transport challenges



Growth of this scale inevitably implies increased pressure on the transport network.

2008-9 saw a reduction of 3.7% in total weekday morning peak travel to central London, which subsequently recovered by 1.1% between 2009 and 2010. More recently, the established trend towards growth on the principal public transport modes has reasserted itself.

Bus demand in London is continuing to grow, by about 2% year on year. Buses have provided the main part of London's increased public transport capacity over recent years and continued growth will mean more capacity will be required in future.

In comparison, Underground passenger journeys decreased by 10% in aggregate during the recession, but growth had recovered strongly to pre-recessionary levels of around 6% year on year by September 2010. Having fallen by 1.4% during 2009, patronage on London and South East National Rail services also recovered strongly, with year-on-year growth of 5% in 2010/11.

Average levels of delay caused by traffic congestion in the south sub region are already acute and are forecast to get worse in the future (more detail on this on next page).

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 south sub-region remain of critical importance and central to this plan.

In addition, the London-wide challenges of improving air quality, reducing emissions of CO₂, 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 total of seven key challenges, as set out in the box opposite.

Further investment will be needed to avoid significant increases in crowding and congestion and to ensure that inefficiencies in the transport network do not constrain the capital's future economic growth.

The following pages consider these a little further.

Introduction

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

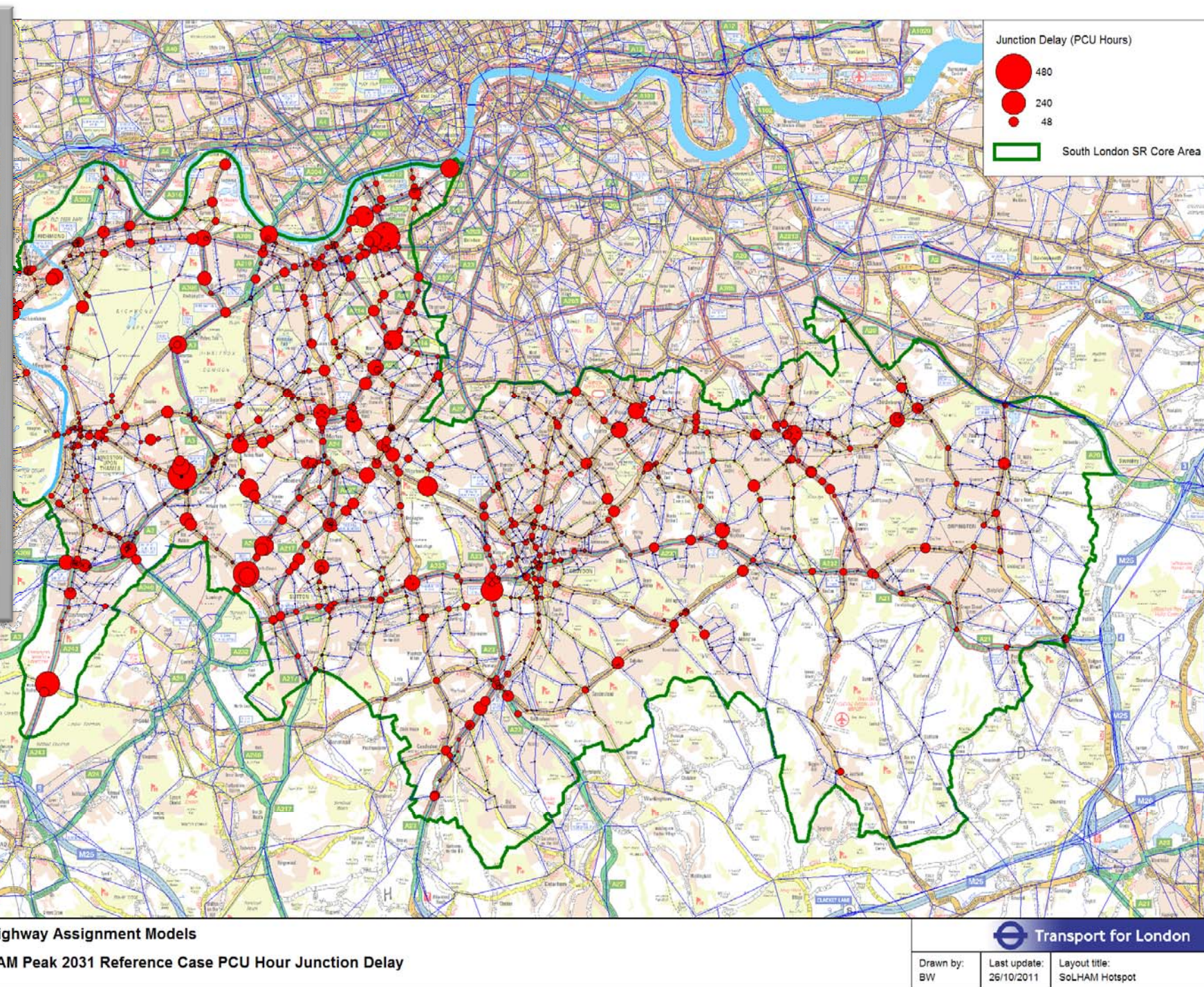
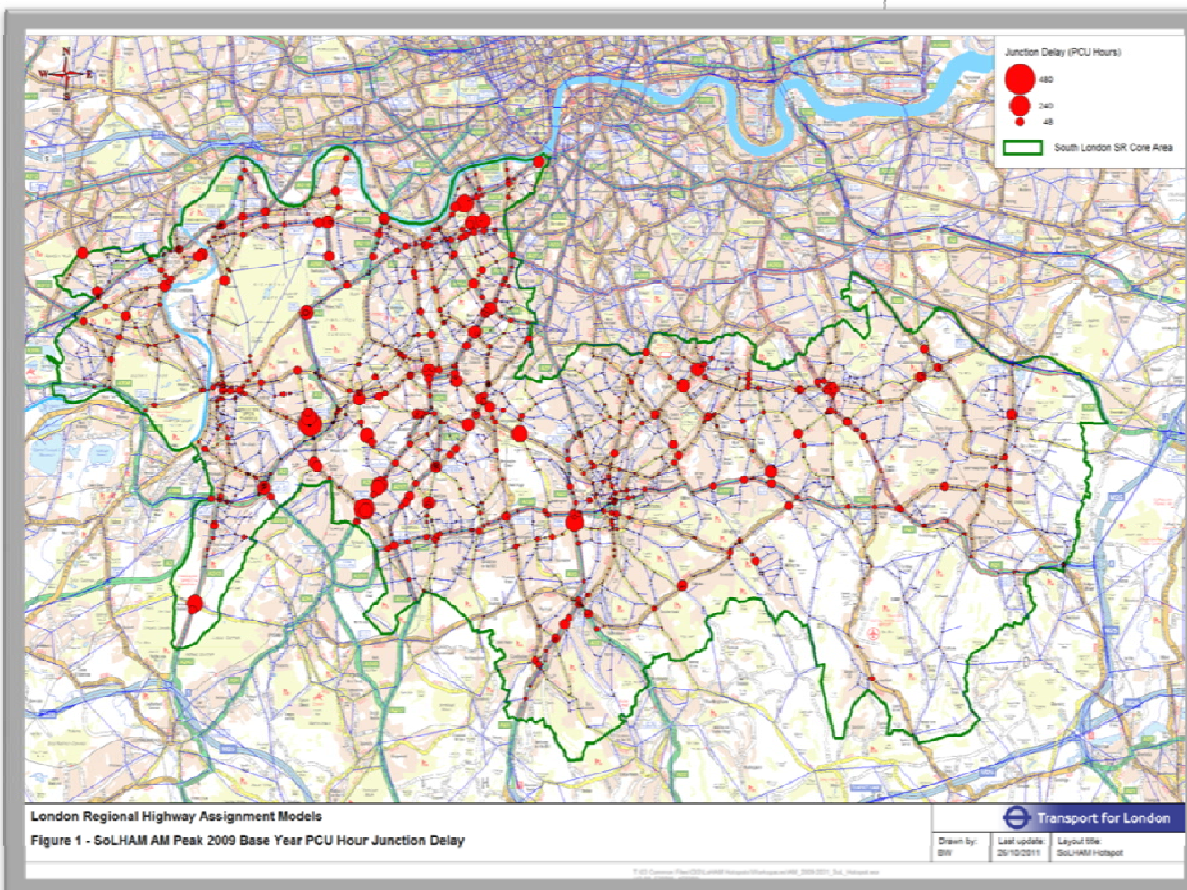
This section reviews these challenges. In many cases this is informed by improvements to our modelling and analysis capability made during 2011. Sub-regional challenges remain a key focus but this further analysis and review of progress against MTS challenges set out in travel in London 4 have highlighted some growing pressures and need for further action in the medium-longer term across a number of London-wide challenges to which the south 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 small but still significant proportion is to be accommodated in the south sub-region.

The latest London Plan forecasts show that south London's population will grow from 1.6m to around 1.8m by 2031, with focal points in Bromley, Croydon and Kingston town centres, as well as in Wandsworth. Employment growth will be spread across the sub-region in small pockets. Some of the borough aspirations for growth e.g. Croydon OAPF – also go beyond the growth assumptions in the London Plan.

4. South London's transport challenges: key points



Managing highway congestion & making efficient use of the road network

Congestion levels in the south sub-region are forecast to increase from 0.95 to 1.03 minutes delay per kilometre between 2007 and 2031. The current rate of delay is second only to Central London and although the level of growth is relatively small compared to some other sub-regions there will be some acute congestion problems in some areas.

Analysis of the south sub-region highway model indicates a number of areas with high levels of congestion. These include the A232 and the A205 corridors.

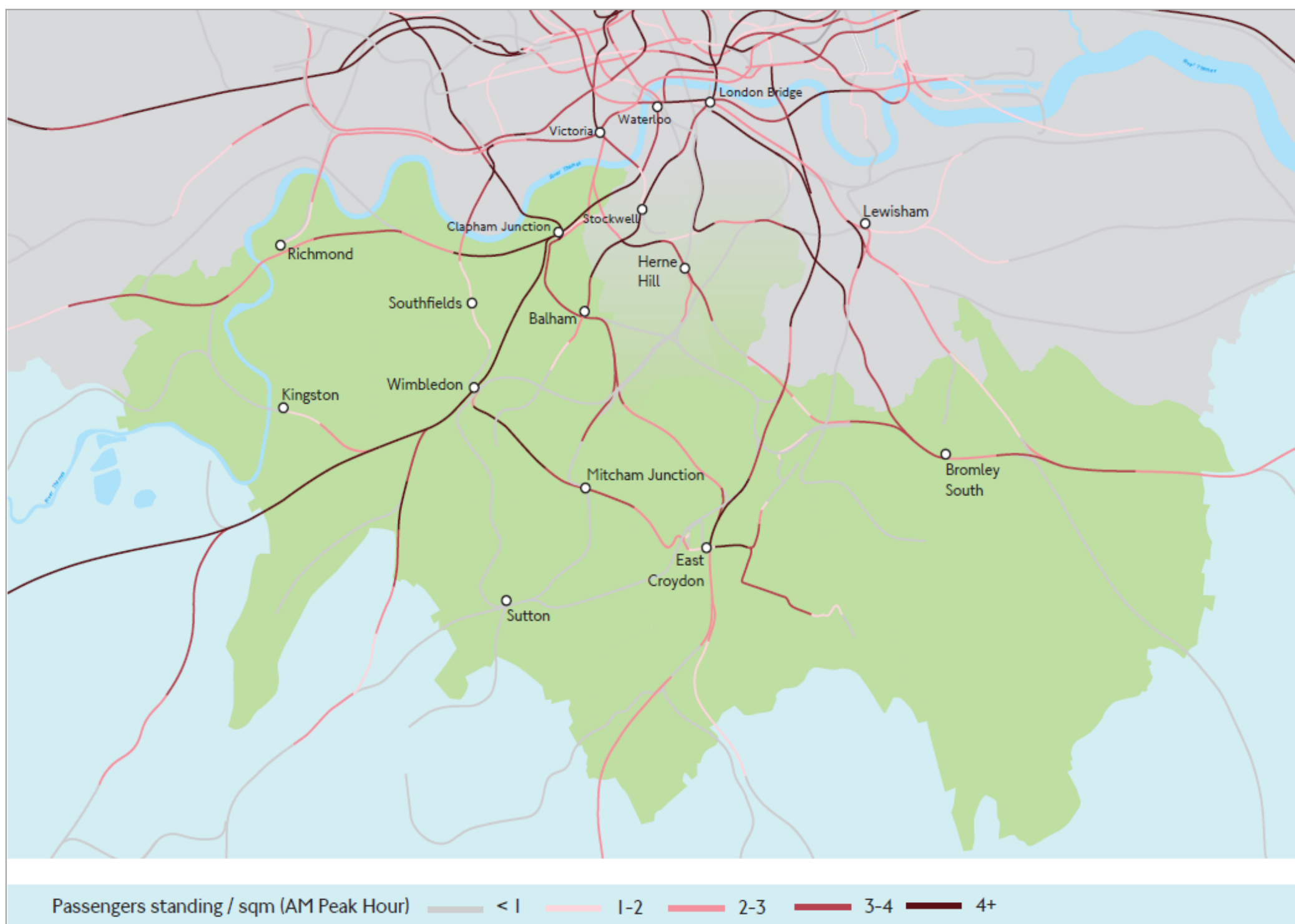
There is forecast to be a mixture of growth and decline in Heavy Goods Vehicle traffic in the sub-region. As might be expected there is a reduction in HGV use closer to central London. By contrast, there has been near universal growth in Light Goods Vehicle traffic across the sub-region. Comparing 2007 figures with a 1994-99 average, Sutton has proportionately seen the greatest increase in van traffic, 32% (8 million km).

Croydon and Wandsworth have the greatest amount of van-km (79 million and 87 million km respectively). Analysis of future densities of trip destinations by car is included in section 5.3.



4. South London's transport challenges: key points

Rail crowding in 2031, with currently committed investment



Reducing public transport crowding

Between 2007 and 2031, there are planned increases in capacity in the sub-region of 38% on national rail and 14% on the Underground. However, forecast increases in passenger demand (37% on national rail services and 27% on the Underground) mean that pressure on the network is unlikely to lessen (and there are some specific areas of growing demand not matched by increased capacity).

Growth pressure on South Western Main Line services will cause crowding to become a worse problem on that route in particular despite the planned investment.

Currently bus capacity is set to remain unchanged overall, though the ongoing review programme will mean regular change to the distribution of resources in the sub-region.



Improving connectivity to, from and within the sub-region

Connectivity continues to be improved but the cancellation of Airtrack is a setback as it does not address the connectivity to Heathrow. Thameslink and London Overground offer major improvements - but further opportunities such as Tramlink extensions need to be considered.



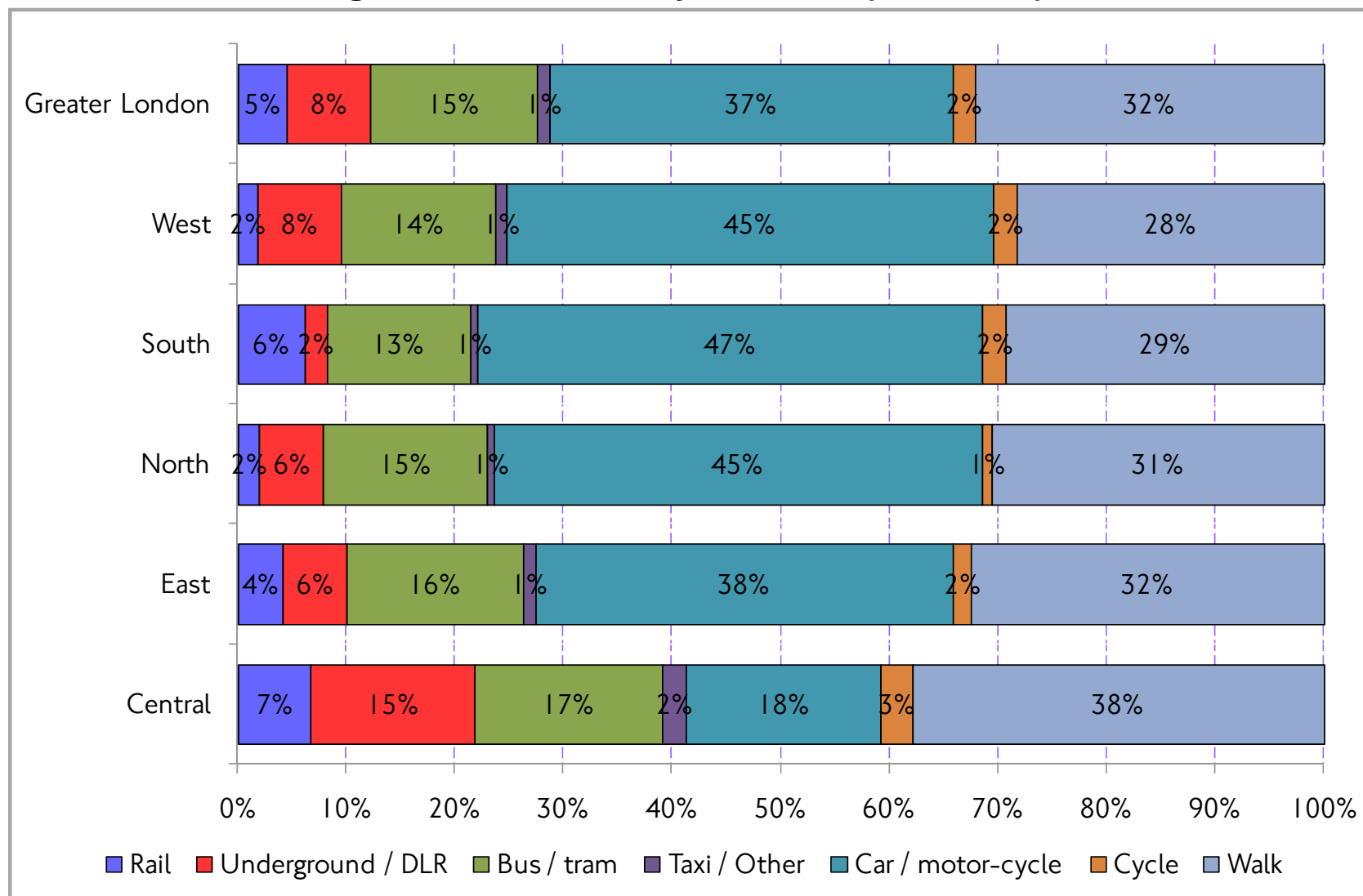
Improving access & movement to, from and within town centres and key places

Key places have assumed an even greater importance following the disturbances of the summer of 2011. Improving pedestrian infrastructure and the public realm encourages more walking and can support economic vitality.



4. The south sub-region's transport challenges: key points contd.

Sub-regional mode share by residents (2008-2011)



Source: London Travel Demand Survey 2008/9-2010/11

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.

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 London-wide.

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

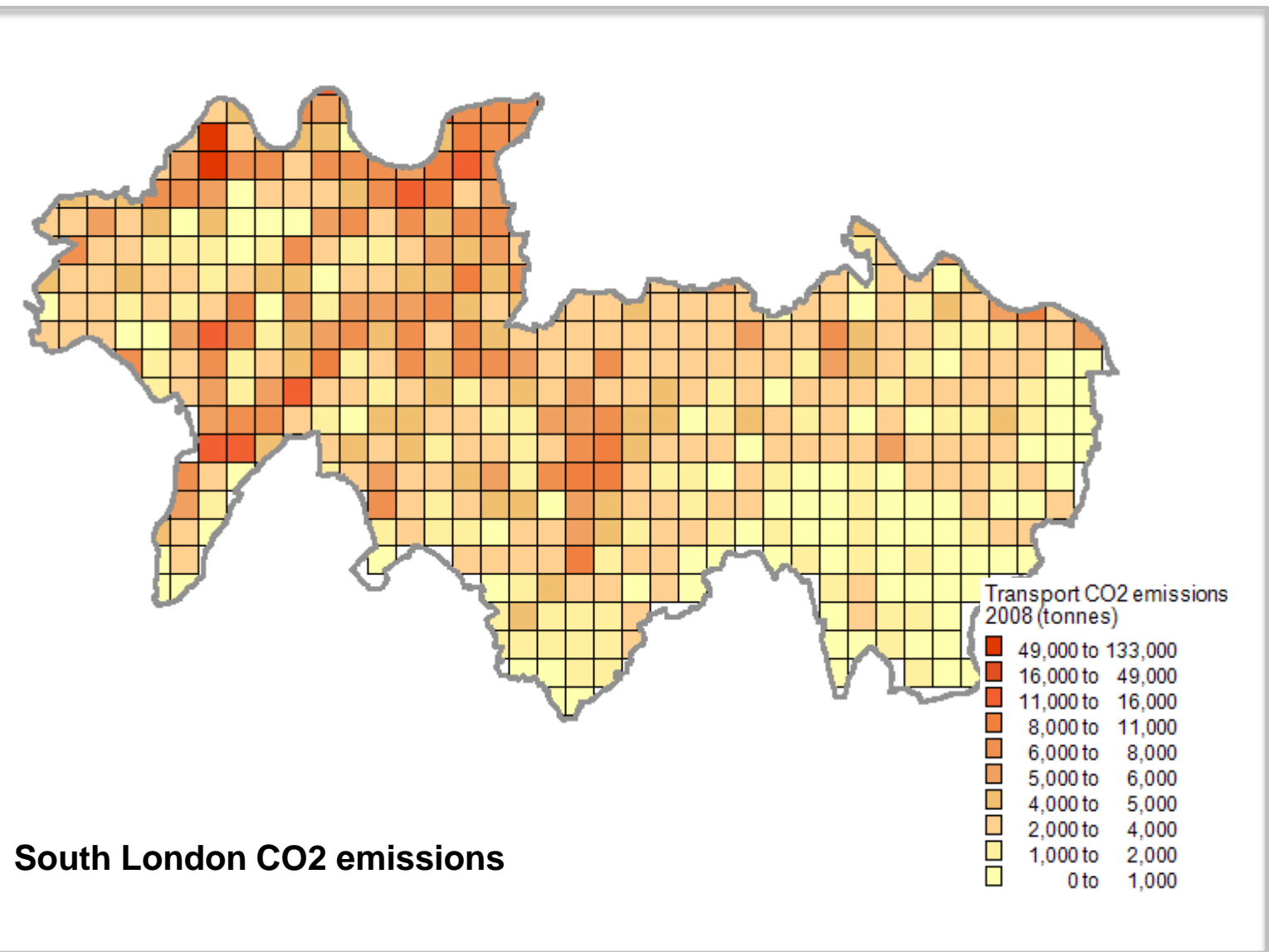
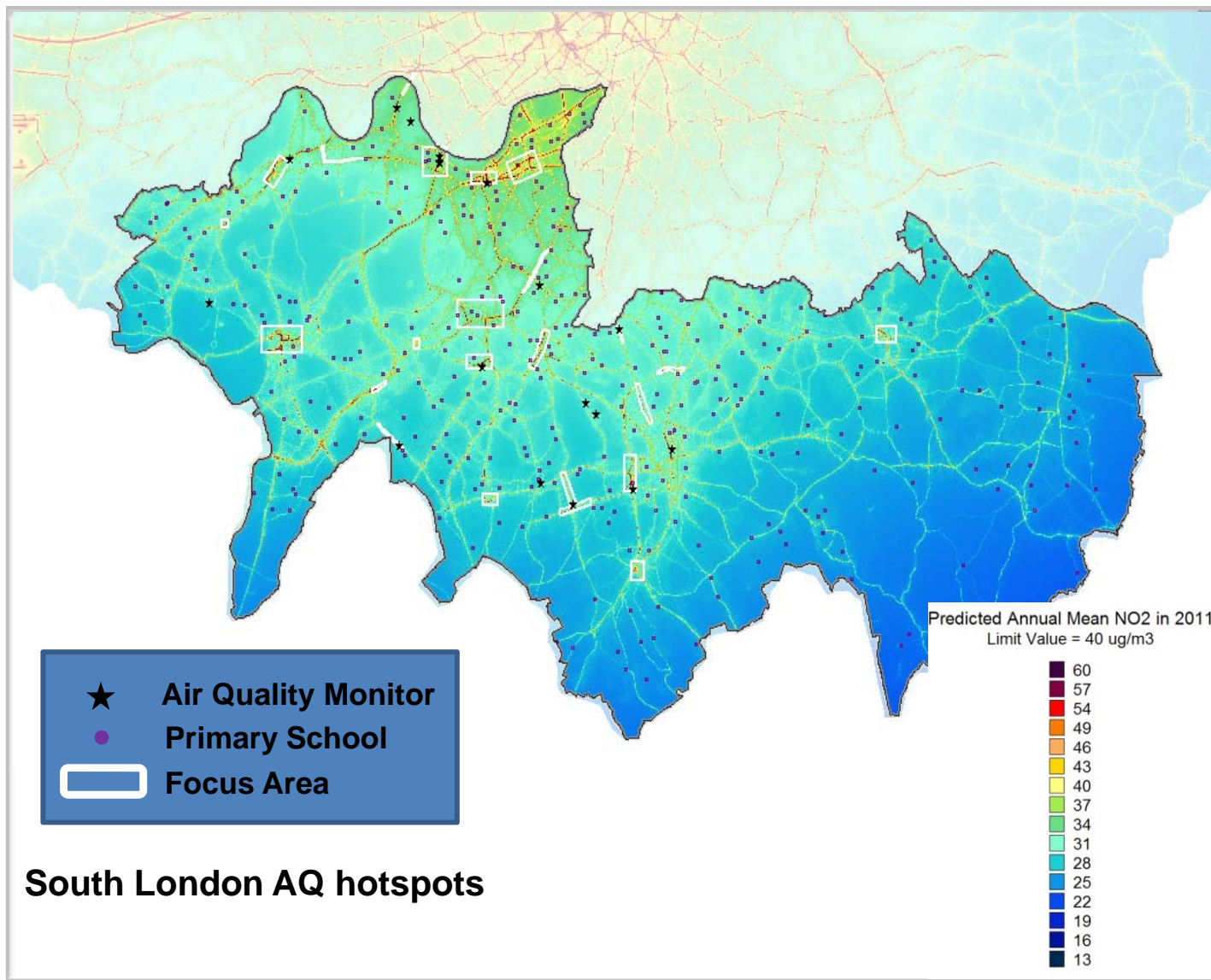
mode are cycled or walked.

Whilst all walking trips in south London remain at around 23 per cent, the mode share of walking trips by only residents of London is around 29 per cent. This mode share is higher as there are more local trips made by residents of London. However, it is still one of the lowest levels of walking in London.

One of the key ways of delivering a change in mode share in the sub-region will be by 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.





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

In the SRTP, 23 NO₂ focus areas were identified in south London.

Some locations are corridors where housing is in close proximity to longer sections of roads (e.g. A24 Tooting High Road, A307 Richmond Road), other locations are junctions where a combination of traffic flows from different roads is affecting air quality in the area (e.g. A205/Upper Richmond Road Junction, Waddon Five Ways Corner). There are also locations in town or district centres where complex traffic flows and junctions are important (e.g. Thornton

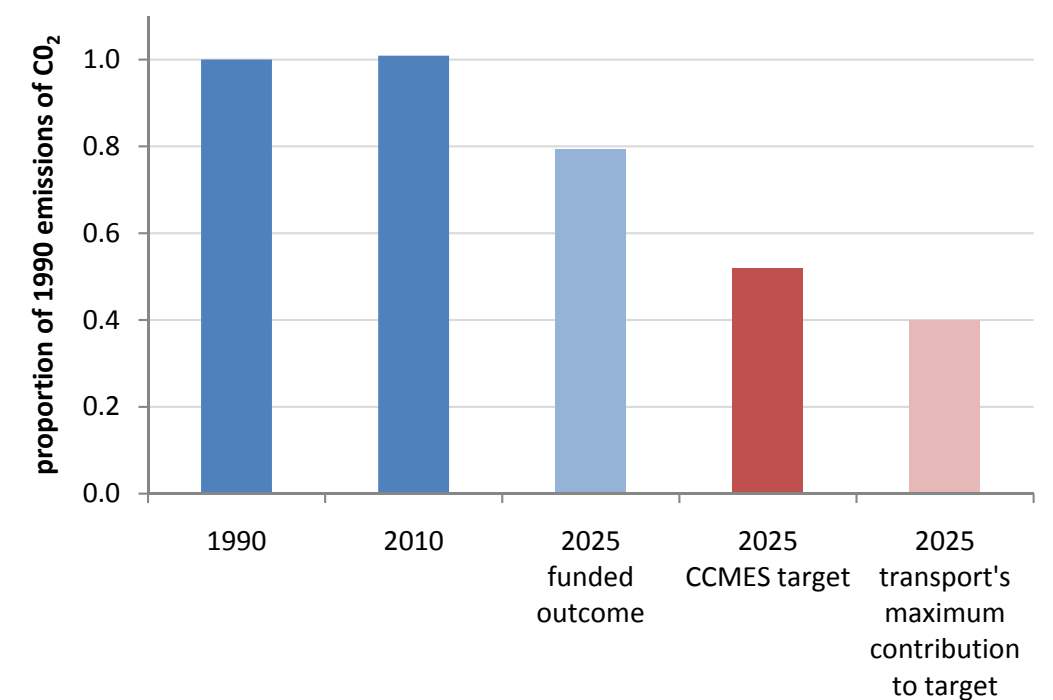
Heath, Wallington, Kingston, Wimbledon, Bromley).

The NO₂ focus areas have been developed by TfL, taking into account current concentrations of NO₂, levels of public exposure, any relevant local characteristics, and predicted air pollution trends for the future. The areas identified have been cross-checked with boroughs Local Air Quality Monitoring. A package of local measures to address NO₂ at these sites will be developed and delivered by TfL, the GLA and boroughs.



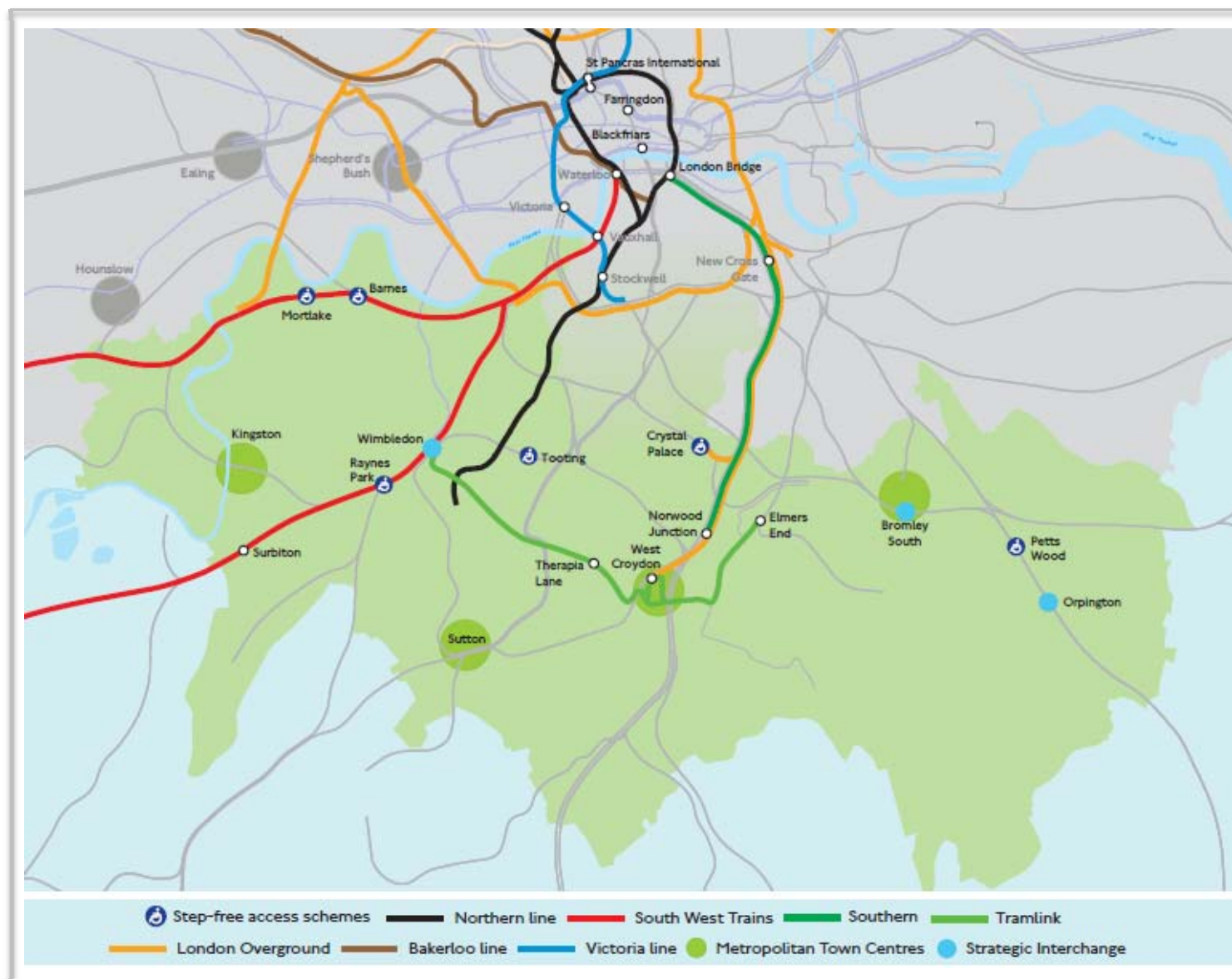
Meeting CO2 targets

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 CO₂ 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 also be critical.



5. Responding to the challenges

5.1a Rail: Making the most of existing networks and enhancing capacity



National rail network

Given the many competing demands on the national rail network in the south sub-region, a clearer focus on the needs of the sub-region in the way the services are operated together with relatively modest investment could go some way to addressing a number of relevant challenges.

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 for customers.

The [Mayor's rail vision](#) offers an alternative. Responsibility for London's inner-suburban rail services should be devolved to the Mayor. In that way a single coherent vision for the city's railways can be made real: 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 and TfL will continue to investigate opportunities to improve the network further.

Gross savings through adopting a more efficient franchising model from the Southeastern and West Anglia franchises alone could amount to £100m over 20 years. This money could be used to improve the passenger experience with more reliable services, higher customer service standards, improved stations and higher off-peak frequencies.

This could be expected to increase the attractiveness of rail and encourage people to reduce unnecessary car usage. Under current rail industry structures, and constraints on national finances, devolution across the London network would be difficult to achieve. Attention is therefore focused on identifying the highest priorities, which, in the sub-region, initially could commence with South Eastern inner suburban services from Sevenoaks and Hayes. Any initiative would be likely to be tied in with the refranchising process.

Station congestion relief

Historically there has been a poor record of investment in London's suburban stations. However, several improvements are underway or proposed such as ticket hall improvements at Bromley South and a new pedestrian bridge at East Croydon. In its HLOS 2 submission TfL has recommended the inclusion of 6 stations in the sub-region as part of package of schemes to provide congestion relief at 18 London stations in all. The overall package has a capital cost of £70m and a benefit – cost ratio of 2 to 1. Three of those in the sub-region are strategic interchanges as defined in the MTS.

Station accessibility

TfL has recommended a further 26 stations to be provided with step free access from platform to street. Of these, six are in the sub-region. The total package has a capital cost of £40m and a benefit:cost ratio of 2 to 1.

Service quality recommendations

Other recommendations were made in line with MTS policies are the operation of more routes with 'turn up and go' frequencies, better information and security measures for passengers, cycle parking and gating.

Capacity schemes

TfL submitted a preferred package of solutions to Network Rail in August 2011. This included train lengthening to 12 car operation on a number of South Western, South Central and South Eastern services, additional stops at stations such as Denmark Hill and Peckham Rye and some additional trains. It also included additional trains on key orbital routes such as Clapham Junction to Shepherd's Bush and longer trains on Southern services on the WL line.

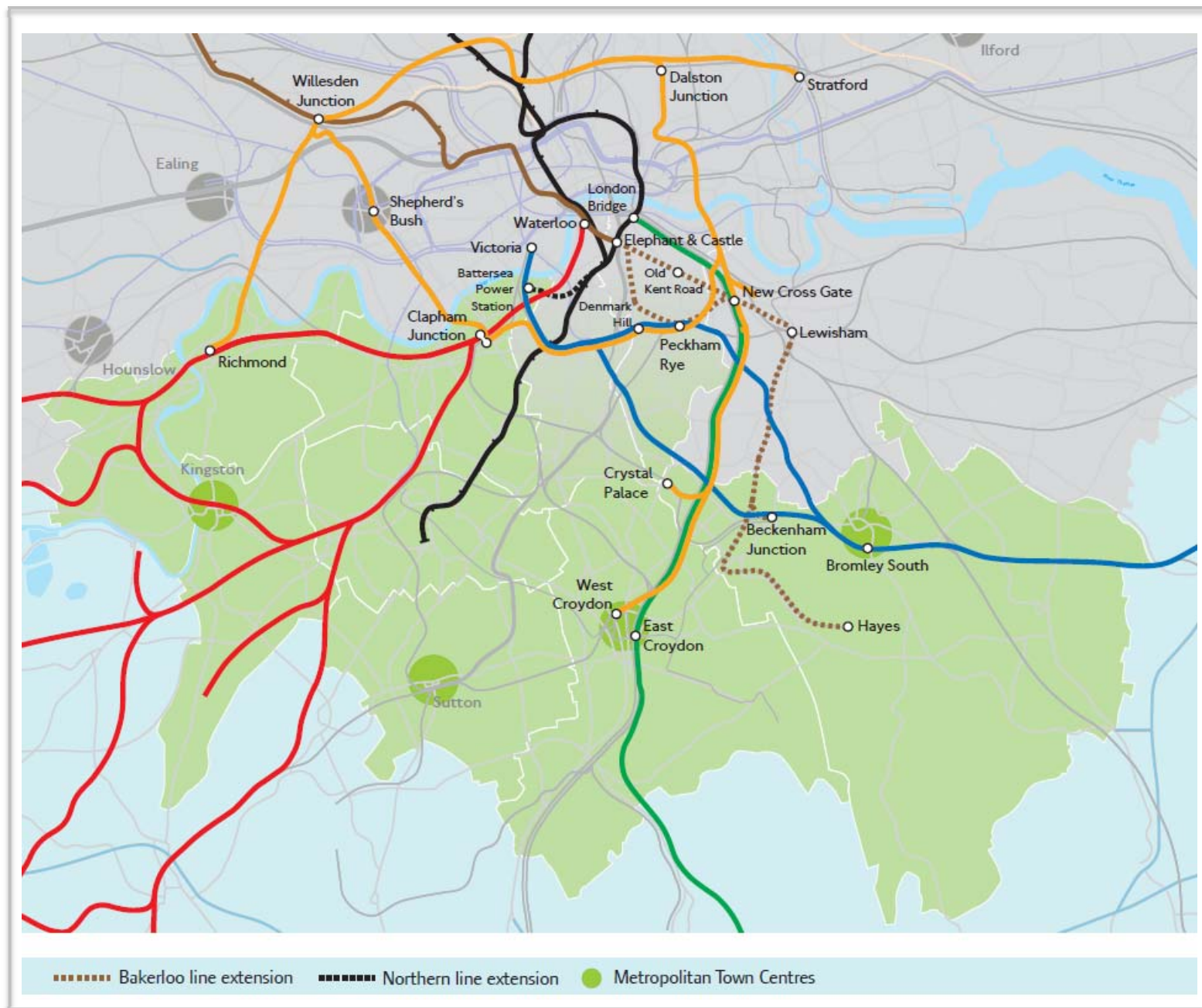
In the longer term, a broad case has been identified for incremental capacity schemes including six car operation on selected orbital Overground routes and extension of 12 car capability on South Western and South Central routes.

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, with a train at least every 2 minutes at peak times on the most critical sections of the line. 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.

An upgrade of the Bakerloo line is planned for post 2020 (unfunded), which would deliver additional capacity to Elephant and Castle, and shorter journey times into the West End.

5.1b Rail: Extensions



TfL has made progress with its own plans and in collaboration with key industry partners on a number of specific larger-scale schemes.

Northern Line extension

The Chancellor announced the Government's support, in partnership with the private sector, for the extension of the Northern Line to Battersea in his Autumn Statement. This extension of the Charing Cross branch to two new stations at Nine Elms and Battersea Power Station will transform access to and from the Vauxhall Nine Elms Opportunity Area, a major new Key Place for the sub-region. The proposed extension has been identified as a key transport improvement needed to support the creation of up to 25,000 new jobs and 16,000 new homes in the area. 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.

The extension of the Charing Cross branch will provide significant journey time benefits reducing, for instance, the time between Battersea to Canary Wharf by around 25% and to Moorgate by around 40%.

The proposed extension of the Charing Cross branch of the Northern Line would create a direct (5 min) link to Westminster, the West End (8 min) and the City (8 min).

Bakerloo Line extension

TfL has confirmed that a route from Elephant and Castle to Lewisham and then to Hayes would offer the most transport benefits, along with a possible link to Beckenham Junction. Depot facilities would be needed in the Hayes area. By taking over the Hayes national rail line, capacity would be freed at Central London terminals and release 6 train paths per hour which could be used to strengthen capacity on key crowded South Eastern routes. However, the impacts on existing users of the Hayes line require further assessment.

TfL plans to continue working to develop the case and refine the options. In particular further investigation of route options between Elephant and 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. For example an extension to Euston could help relieve overcrowding on the Northern Line and accommodate additional passengers resulting from HS2 passengers, while an extension to Dagenham Dock would help stimulate development in key Opportunity Areas.

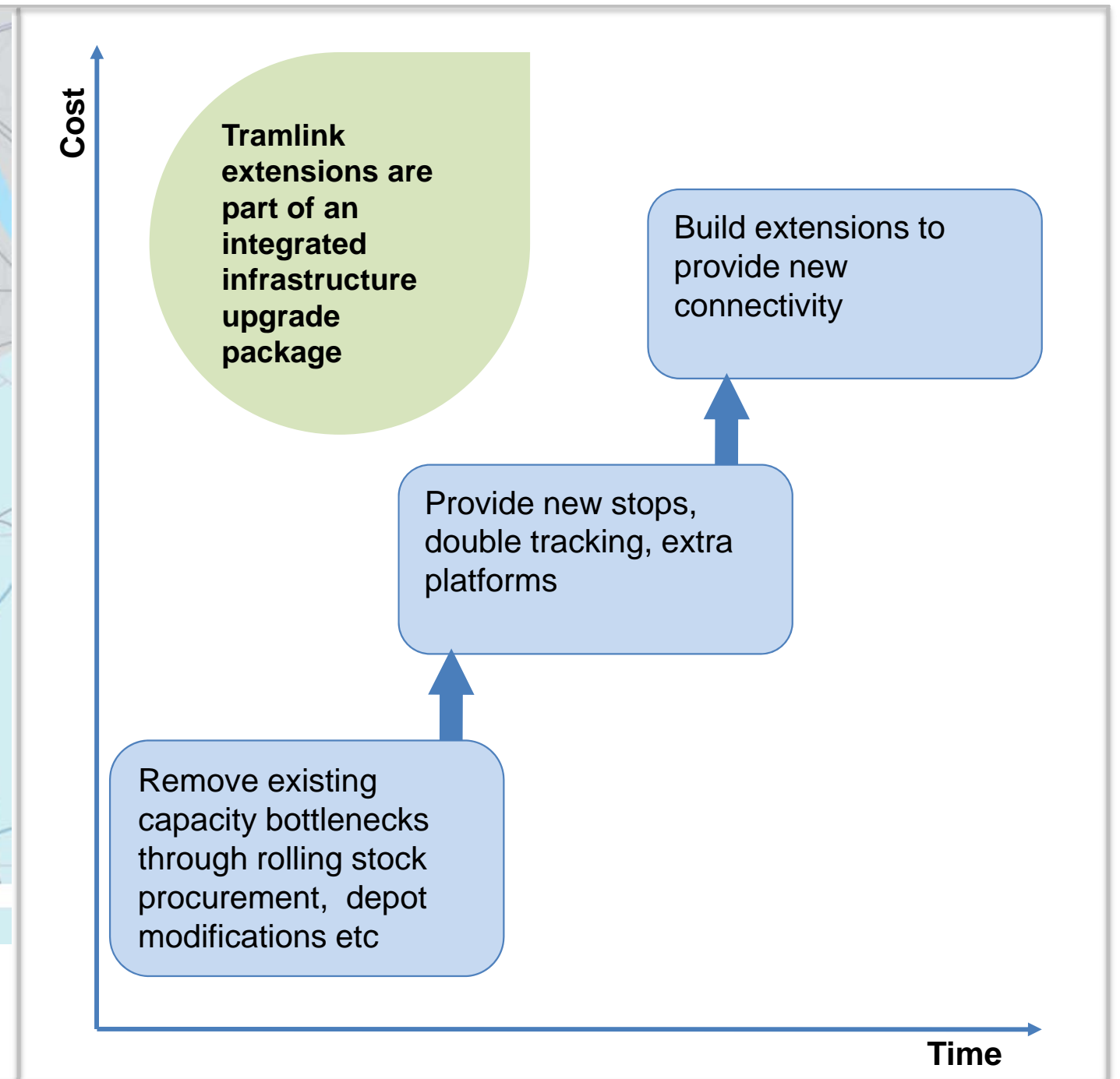
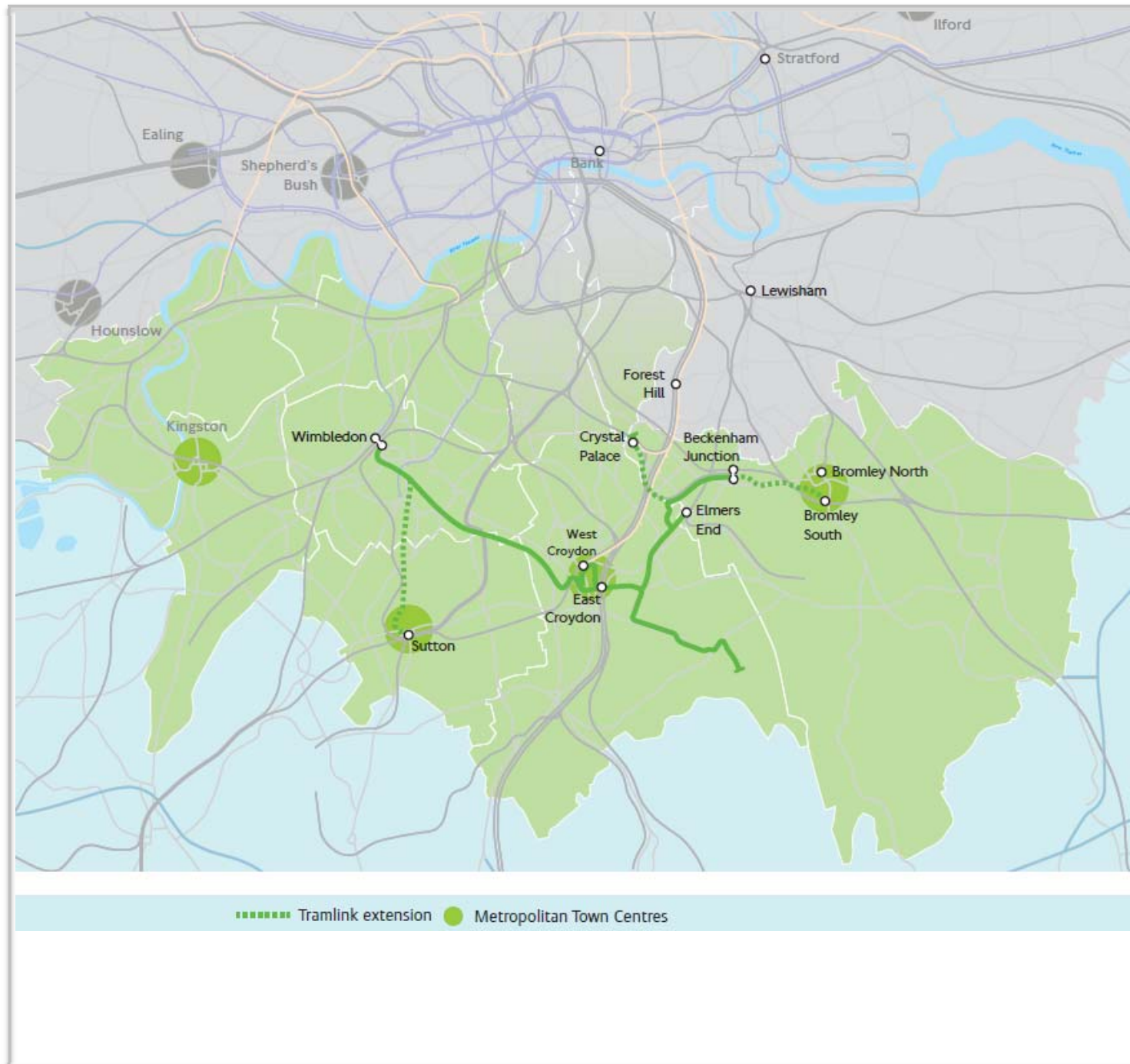
In the south sub-region many schemes are under review with an extension of the Lewisham branch to Catford and Forest Hill offering strong connectivity and crowding benefits to the Overground and Jubilee Line in particular. TfL is also undertaking an engineering feasibility study for an extension of the route to Bromley North.

In summary

Despite the major investment which the schemes outlined on this page represent, a number of outstanding challenges remain unaddressed. In particular :

- (i) a number of connectivity problems in key corridors in the sub-region
- (ii) connections to HS2 and Heathrow (depending on future hub airport strategy) and
- (iii) continued severe crowding on some rail corridors, most notably, the south western main line.

5.1c Rail: Tramlink



There are a number of constraints on the system which need to be addressed for the system to meet its full potential in meeting the transport challenges of the corridors it serves. In particular the unfunded solutions which would enhance existing services include an additional platform at Wimbledon Station; and a stabling facility at Woodside. These works would also be needed to facilitate any major expansion of the network. There is also a particular capacity constraint in Croydon Town Centre.

Tramlink extensions

Approximately thirty route extension

options have been assessed against the MTS goals, challenges and outcomes as well as key challenges in the SRTP, to produce a shortlist of around a dozen options.

TfL's Railplan model has been used to produce business cases which together with an assessment of options against MTS goals and challenges have been used to prioritise the options.

A number of initiatives are being progressed for implementation by 2015. These include depot modifications and double tracking between Mitcham and

Mitcham Junction.

In the medium term any of the following extension schemes could be pursued:

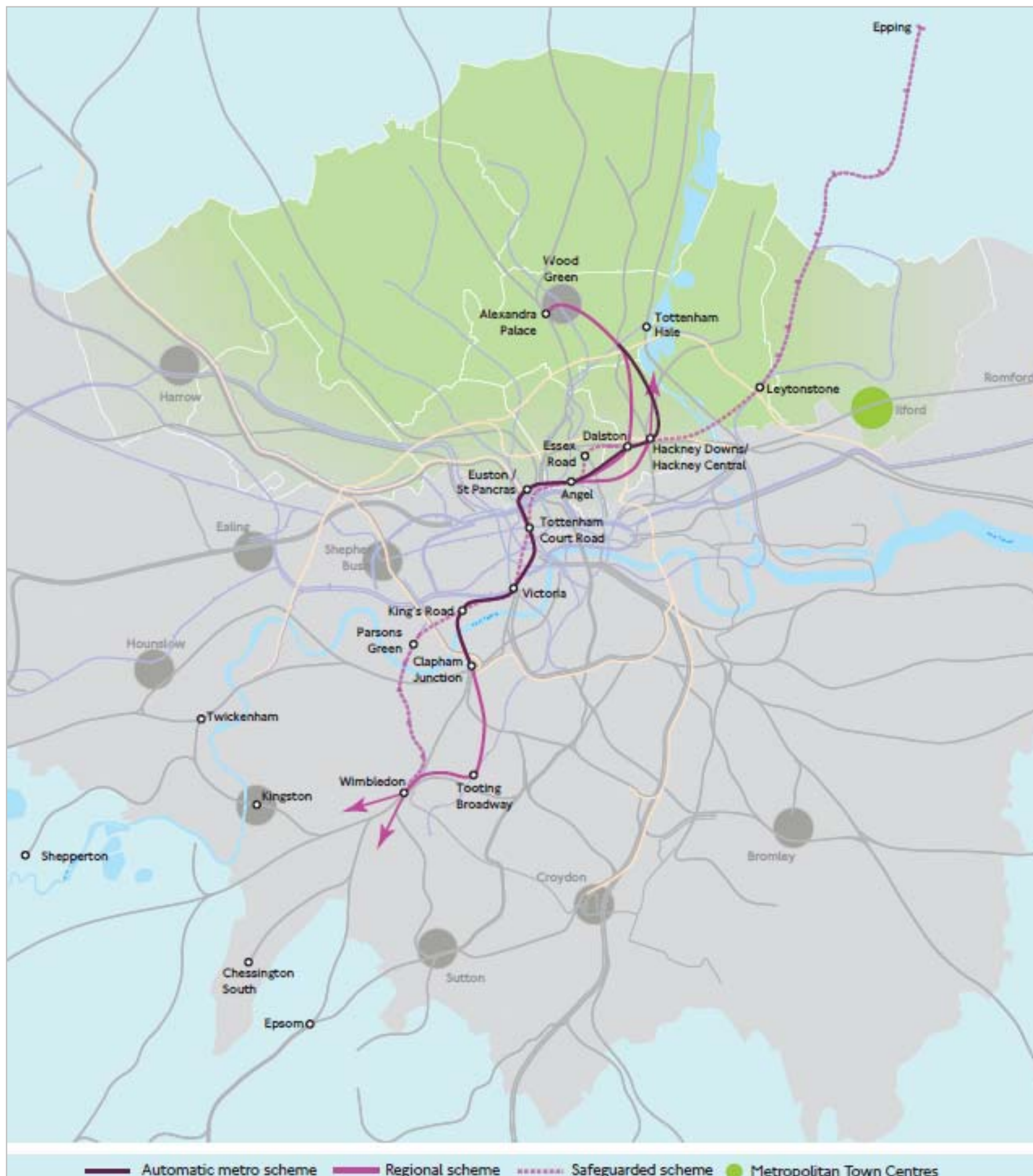
- An extension to Crystal Palace, operating a Crystal Palace to Croydon and possibly Wimbledon service, & utilising the railway alignment northwest of Harrington Road;
- Extension to Sutton town centre, operating a Sutton to Wimbledon service via St Helier Hospital and Morden town centre with on street alignment.

As highlighted, before extensions can beneficially proceed, a programme of

works to the existing infrastructure is needed

Beyond this an extension to Bromley town centre could be considered, although this would only be feasible following completion of the extension to Crystal Palace, This would allow a Croydon to Bromley service to be provided, with on street operation via Shortlands, terminating in the Bromley South area.

5.1d Rail: Crossrail 2



On behalf of the Mayor of London, TfL have 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 shows.

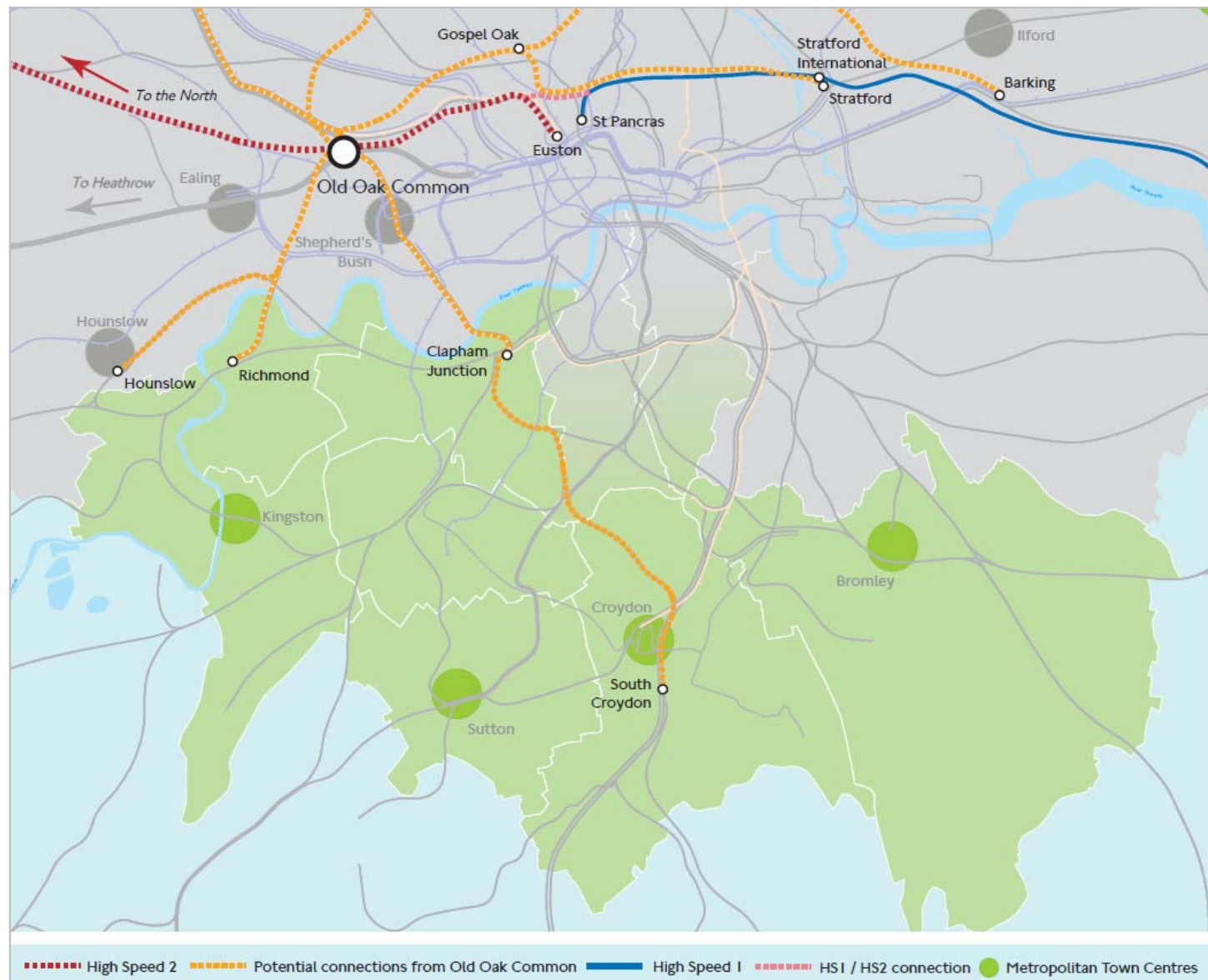
Further work on these options is being undertaken through the whole of 2012 with a view to developing a preferred alignment for Crossrail 2, which will lead to a re-refresh of the safeguarding in due course, likely in 2013/14.

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.

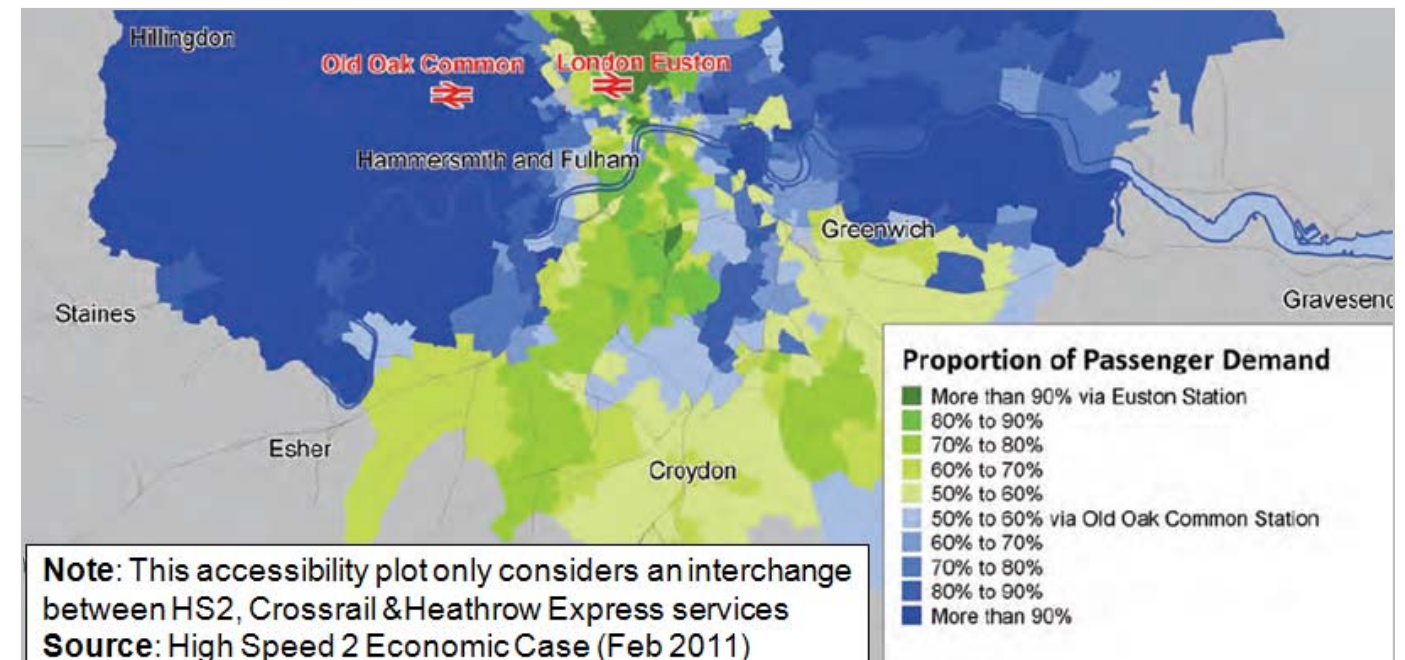
5.1e Rail: Connections to HS2 and Heathrow airport



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 an 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 planned HS2 stations are agreed with the Government and TfL will be working to this end closely with the DfT, HS2 and sub-regional partners to ensure that this takes place. The map above and opposite shows which HS2 station is likely to be used from each point in the sub-region. It is clear that both Euston and Old Oak Common will be used by people in the sub-region and that preference will vary considerably with location. Old Oak Common will also provide interchange for passengers from south London wishing to reach Heathrow airport in the future, particularly since the demise of the Airtrack project which would have improved connectivity in the Richmond to Heathrow corridor.



While connectivity to Euston is already good, there is insufficient capacity to cater for long term needs particularly following completion of later stages of the high speed network. The Crossrail 2 project and a DLR extension to Euston would go a long way to resolving this issue.

Old Oak Common would have to be integrated with the rest of London's transport network for this station to be accessible. This requires further investment in road and rail connections. TfL believes a well connected interchange at Old Oak Common, should include London Overground services, with direct connections to key centres in the south sub-region, including Richmond, Clapham Junction and Croydon. Journey times to Old Oak Common would be approximately as follows:

- Croydon 30 minutes
- Hounslow 18-20 minutes
- Richmond 15 minutes
- Clapham Junction 15 minutes

TfL will also give further consideration to promising rail proposals from

boroughs and others which offer connectivity benefits between the sub-region and Heathrow airport.

5.2 Enhanced interchange



A number of locations in south London are particularly well suited to the role of a strategic interchange. But the scope will be influenced by the progress made in the implementation of funded schemes (such as Thameslink) and unfunded major schemes such as Crossrail 2 and the Bakerloo line extension

Clapham Junction has the greatest strategic interchange potential in south London, and arguably 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 3hour AM peak. If measures were in place to increase the frequency on the overground network (Willesden Jct / Stratford & west (Peckham, Canada Water & Whitechapel) to eg 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 by c4,000 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.

East Croydon provides excellent radial connections northwards e.g. to London Bridge, Cannon Street, Charing Cross, Victoria and further north towards Luton as well as serving very important local and sub-regional catchments. To the south, trains provide services to key destinations e.g. Gatwick & Brighton. The Thameslink programme will see more frequent and longer trains through here as would HLOS2 proposals. A proposed new entrance and pedestrian bridge at the station will provide some relief and proposed links in and around the station will improve integration but opportunities in the longer term such as the provision of an additional platform at the station, should be explored through the East Croydon Masterplan. East Croydon is also served by a frequent Tramlink service providing good orbital connections to places to the west e.g. Wimbledon and Beckenham Junction and New Addington to the East. Tramlink frequency will increase (line 4) in 2012 and possible future extensions to e.g. Crystal Palace and Bromley will mean East Croydon will become a busier station. Significantly increased usage is also likely from Croydon's OAPF growth proposals.

West Croydon has excellent radial and orbital links and through the extension of the Overground network links to east and north London. Important orbital connections are provided to areas such as Sutton on the national rail network as well as connections to the Tramlink network. The station is well located and whilst some improvements such

as a new entrance are proposed, improved integration with buses & trams is required as well as capacity increases.

Peckham Rye is a strategic node in the 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 already very well used, with the highest number of bus to bus passenger changes in London. It is also 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 may encourage some people travelling from south London to The Westend to travel via Elephant and Castle, using the under-utilised Bakerloo Line, rather than via Victoria & the overcrowded Victoria line.

Wimbledon station has potential to provide for an increased Tramlink frequency by providing enlarged and refined platform layouts and this is being explored with Network Rail. In the longer term, Crossrail 2 provides opportunities to transform the station.

5.3 Road network: overview of the different priorities

Different priorities		Potential measures
<p>Congestion</p> <ul style="list-style-type: none"> • A key pressure on a number of South London's roads • Will not always be possible to reduce congestion 	<p>Road safety</p> <ul style="list-style-type: none"> • A high priority in all locations • Frequency and severity of accidents can be improved through good design and measures which reduce traffic speeds 	<p>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 in particular locations.</p>
<p>Access to and within key places – by different modes</p> <ul style="list-style-type: none"> • The focus should remain on people movement and efficient use of road space • The exact mode mix will vary depending on location 	<p>The quality and sense of place</p> <ul style="list-style-type: none"> • There is an opportunity to build on the unique characteristic of South London's town centres by improving quality of life • This will involved trade offs between different objectives 	

As highlighted in section 4, congestion is already a challenge on many of the roads in south London – and is set to get worse in the longer term as growth pressures continue (both background and in particular areas associated e.g. with Opportunity Areas) and many parts of the network reach saturation point.

The road network plays a vital role in ensuring access to key places. It is also vital for supporting the increasing needs for freight /servicing that keeps London functioning. But while the strategic links help ensure places are accessible and vital, 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 and impacts on the attraction of alternative modes. Tackling congestion and ensuring good access to key places is thus a priority

within the sub-region, but so too is creating better places, improving road safety, supporting 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.

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

To date the South London Roads Group has identified three corridors for further investigation; the A205, A316 and A2043.

The benefits from 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 and 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'. For 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. In many areas of Outer London, the reliance on private car is likely to continue. But even in many outer town centres, given the relatively high number of short car trips, there is potential to switch many trips to walk / cycle / bus and encourage different models of car ownership and use e.g. car clubs/share.

There could also be potential for reducing and re-timing freight deliveries.

On the following page, the map highlights some of these issues and where they may be prioritised. The following section then looks at different priorities and measures in turn.

5.3a and b. Better management and operation, and demand management

a) Network Operating Strategy

The Network Operating Strategy was released for consultation in May 2011. It sets out the main techniques which can be used to improve journey time reliability for cars and freight. Some of the main measures which have been implemented include:

- traffic signal timing adjustments
- further application of SCOOT
- lane rental and permitting schemes
- better computerised management of the network through improved interactive technologies

As a result of implementing the measures set out in the Network Operating Strategy, TfL and the boroughs have successfully managed to improve journey time reliability in the south sub-region.

It is also vital that London continues to renew its assets.

In addition to measures to enhance public transport, there are also significant opportunities to encourage mode shift to walking and cycling. Alongside initiatives to reduce the impact of freight movements, these are likely to reduce levels of congestion on the road network, as well as reduce parking pressures, CO₂ and other air pollutant emissions.

b) Demand management: cars

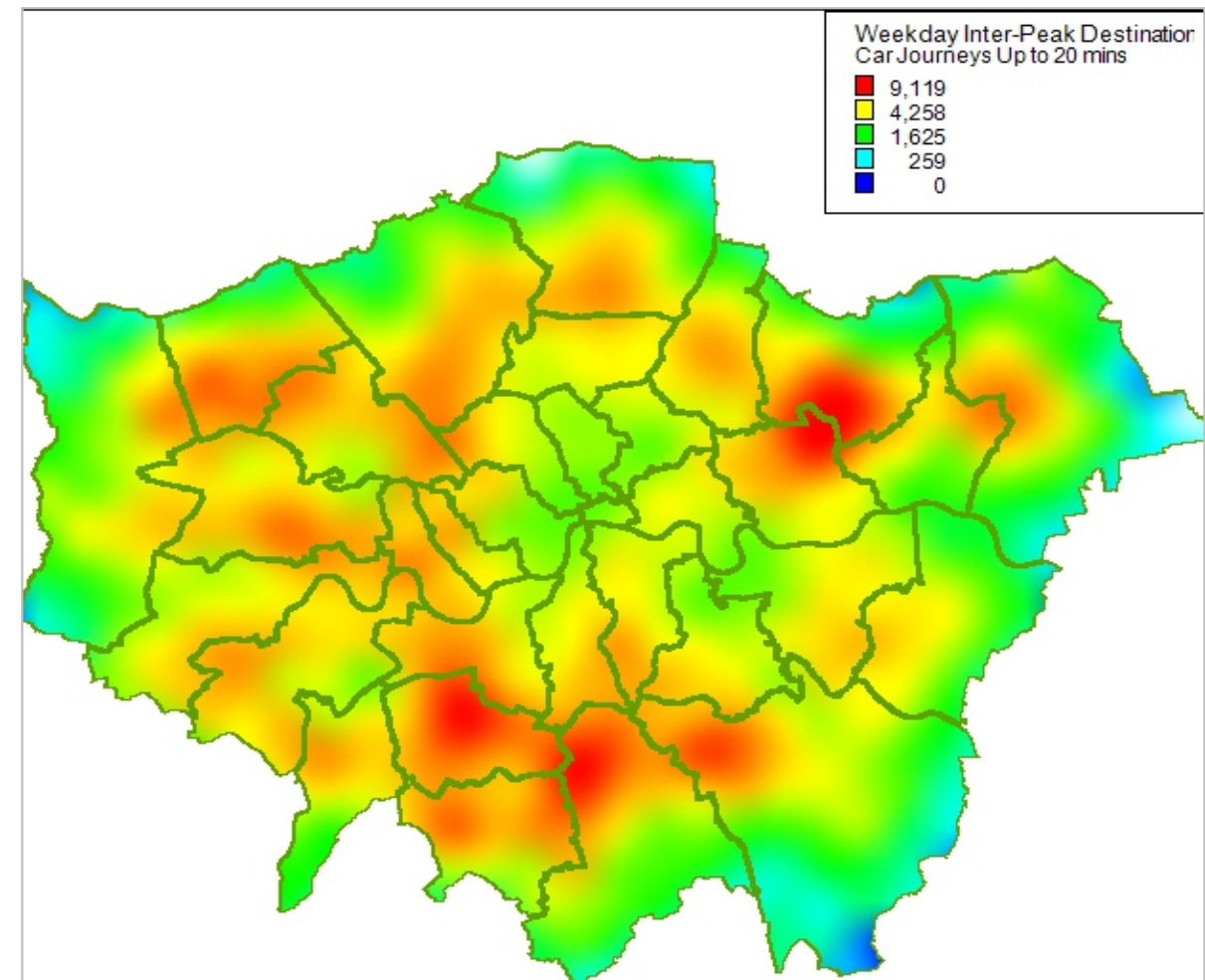
Targeting measures for mode shift work best where there are alternatives available, as well as where there is a propensity to shift mode in the first place. Even in places where people still rely on cars there is potential to reduce the level of car dependency, e.g. via different models of car ownership, such as car clubs.

Every day, Londoners make more than 0.5m trips under 1km and 1m trips between 1-5km by car. Nearly three quarters of car trips shorter than 20 minutes are wholly contained within a single borough, for car trips shorter than 10 minutes, this increases to around 85%. Whilst these trips may be associated with trips to/from town centres, there is a concentration of trips beyond inner London for trips outside the peak periods (see figure to the left).

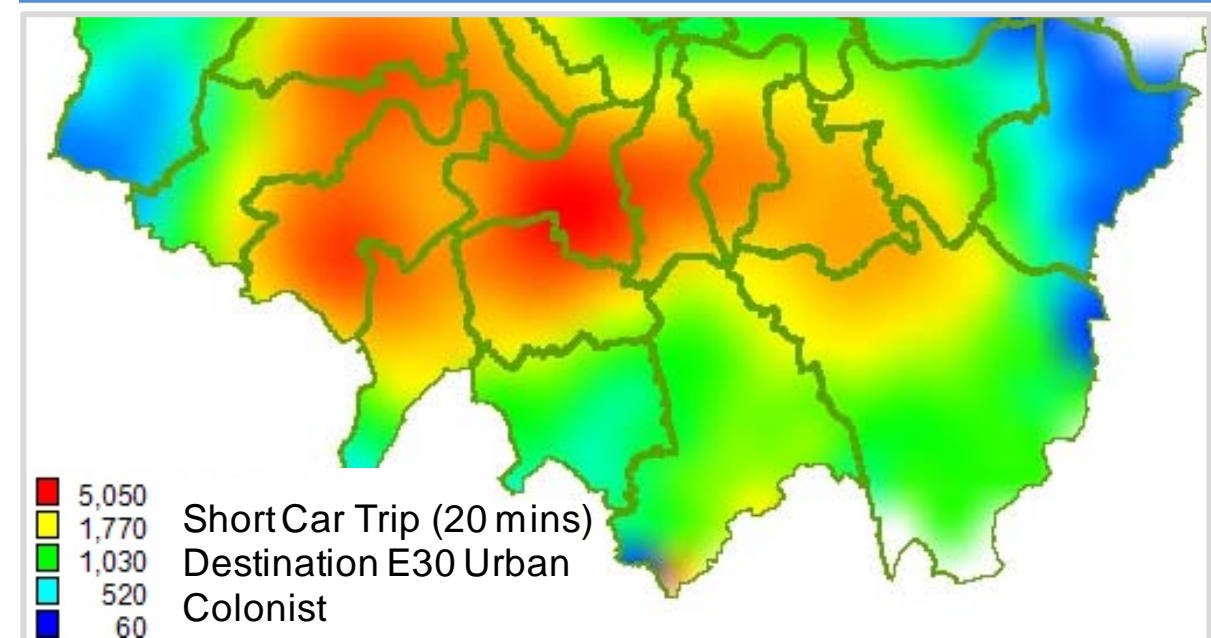
In the case of households requiring access to cars, there are some areas where the take up of car club membership is more likely and could have a greater impact. For instance, households with more than one car generate a disproportionate number of short car trips – just 28% of car-owning households own more than one car but about 40% of car trips under 20 minutes are made by people in this group. The impact of shifting one car to a car club car is shown to reduce the amount of short car trips and can reduce the pressures on space and environment.

In 2011, Borough Demand Analysis Packs for car clubs were circulated to boroughs which helped to support the case for expansion of car clubs and to inform local discussions with operators. Furthermore, if the implementation of these car clubs were to be fully electric, with a focus on EV infrastructure to support it, the CO₂ and air pollutant emissions would be reduced.

Destination of short car trips – inter-peak period (10am – 4pm)



In south west London there is a good potential for car club implementation, particularly with the market segment known as 'Urban Colonists'



5.3a. Better management and operation: freight and servicing



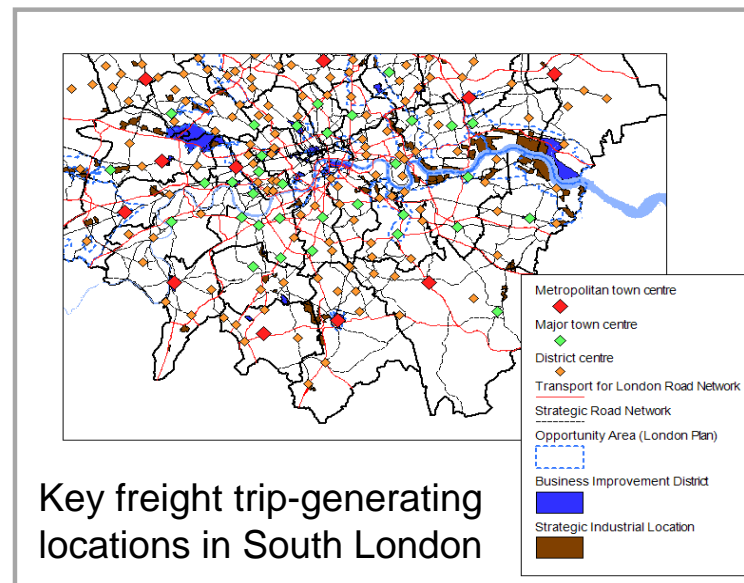
Walworth Road 'Mixed Priority route'



New loading bay in Woodcote Road, Sutton

Schemes such as the Walworth Road 'Mixed Priority Route' scheme seek to maintain capacity, reduce delay / journey time variability and improve safety whilst improving facilities for non-motorised users. Since implementing the scheme, the (annual) number of parking and loading tickets issued has fallen from 4,532 before to 1,472 after.

The footway and carriageway are now better integrated into a single space. Loading facilities are now more integrated into the footway, removing stationary vehicles from the carriageway more effectively. When not in use for loading there will be an effect of a wider footway. Loading activity can help informally separate the carriageway from the footway without the need for guard railing.



Responding to the current and future freight & servicing challenges will require a flexible and innovative approach to meet the specific demands across south London

Existing measures

Current freight initiatives aimed at improving the efficiency of freight movement and improving its contribution to other mayoral goals include the Freight Operator Recognition Scheme (FORS), Delivery and Servicing Plans (DSPs), Construction and Logistics Plans (CLPs) and the Freight Information Portal. These are complemented by measures such as

safeguarding wharves, improving rail freight facilities, and encouraging quiet out-of-hour deliveries.

New opportunities: Olympics legacy

The Olympic and Paralympic Games in 2012 will bring opportunities and challenges to freight and servicing across London, including in the south 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

The roll-out of existing freight and servicing measures, such as CLPs and DSPs, should be implemented at new developments, not only those in areas of high congestion around town centres. In an early case study of a DSP at TfL's Palestra Offices in Southwark in 2009, deliveries reduced by 20 per cent overall, with even greater reductions in deliveries (c.40 per cent) for catering supplies, stationery supplies and archiving. The reductions in freight trips have a much wider impact than in the immediate vicinity of the office locations.

Further measures for implementation in the south 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 at Business Improvement Districts (BIDs) in the south sub-region to reduce the number or shift the timing of deliveries to an area, e.g. Better Bankside.
- Use of section 106 agreements to improve the effectiveness and enforcement of planning conditions related to freight and use of pooled

contributions, e.g. in the Croydon OAPF

- 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
- Investigating the potential for a consolidation centre located in the sub-region, e.g. off the M23/A23 (being considered by the Freight group chaired by South London Business)
- 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.
- Improved signage and wayfinding

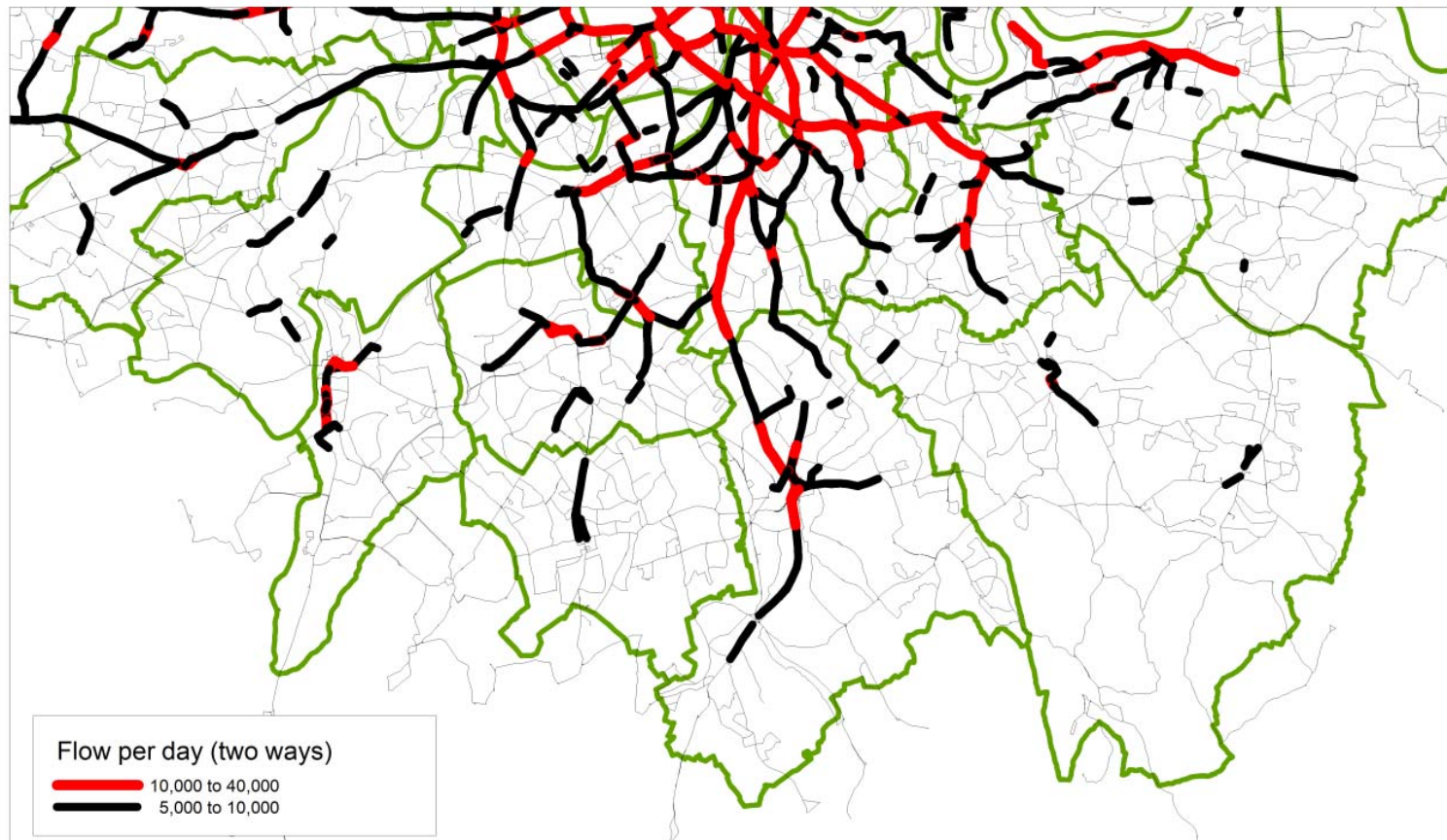
In addition to implementing further measures there is a clear need to get a better understanding of the servicing sector and van use in London overall and also particular areas. Identifying locations in the south sub-region which would be willing to participate in a case study exploring this would be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

Additional information on freight movement in London can be found in TfL's annual traffic report:

<http://www.tfl.gov.uk/assets/download/businessandpartners/traffic-levels-on-major-roads-1993-2007.pdf>

5.3c. Mode shift: bus

Bus flows: 5000 passengers per day and greater



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, and through better management of projects affecting the highway, including roadworks.

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.

The measure of bus reliability, Excess Wait Time (EWT) shows improvement in each borough of the sub-region (see table to the right).

Medium Term

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

Whilst the opening of Crossrail towards the end of the decade will significantly change the capacity needs in many of the sub-regions, the main challenge in the south is to cope with intensification of existing usage. This will include:

- Maintaining bus journey speeds
- Retaining good bus access to town centres such as Croydon and Kingston
- Seeking improvement in bus access at existing car-orientated development, for example Purley Way
- Developing the network of centre-to-centre services to strengthen links

Ensuring that there is sufficient space for terminals near to where routes end is a key priority to enable the network to operate reliably. These are often in town centres where demand for space is limited. Furthermore, garage capacity is essential to providing a bus network. The location of the garages in the sub-region are generally well-matched to the network they support.

Long Term

All of the challenges of the medium term will carry through to the longer term 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. In these locations the case for bus priority should always be considered from the earliest stage of

design.

Potential rail schemes which would require consideration of complementary bus changes in the south sub-region include the Bakerloo Line extension and Crossrail 2.

Supporting growth

Bus is the only public transport mode serving all areas of the subregion. 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.

Bus reliability in the south sub region boroughs

	1999/2000 EWT*	2010/2011 EWT*
Bromley	1.9	1.0
Croydon	2.0	0.9
Merton	2.1	1.2
Richmond	2.0	1.1
Sutton	1.9	1.2
Wandsworth	2.3	1.2
Kingston Upon Thames	1.8	1.2

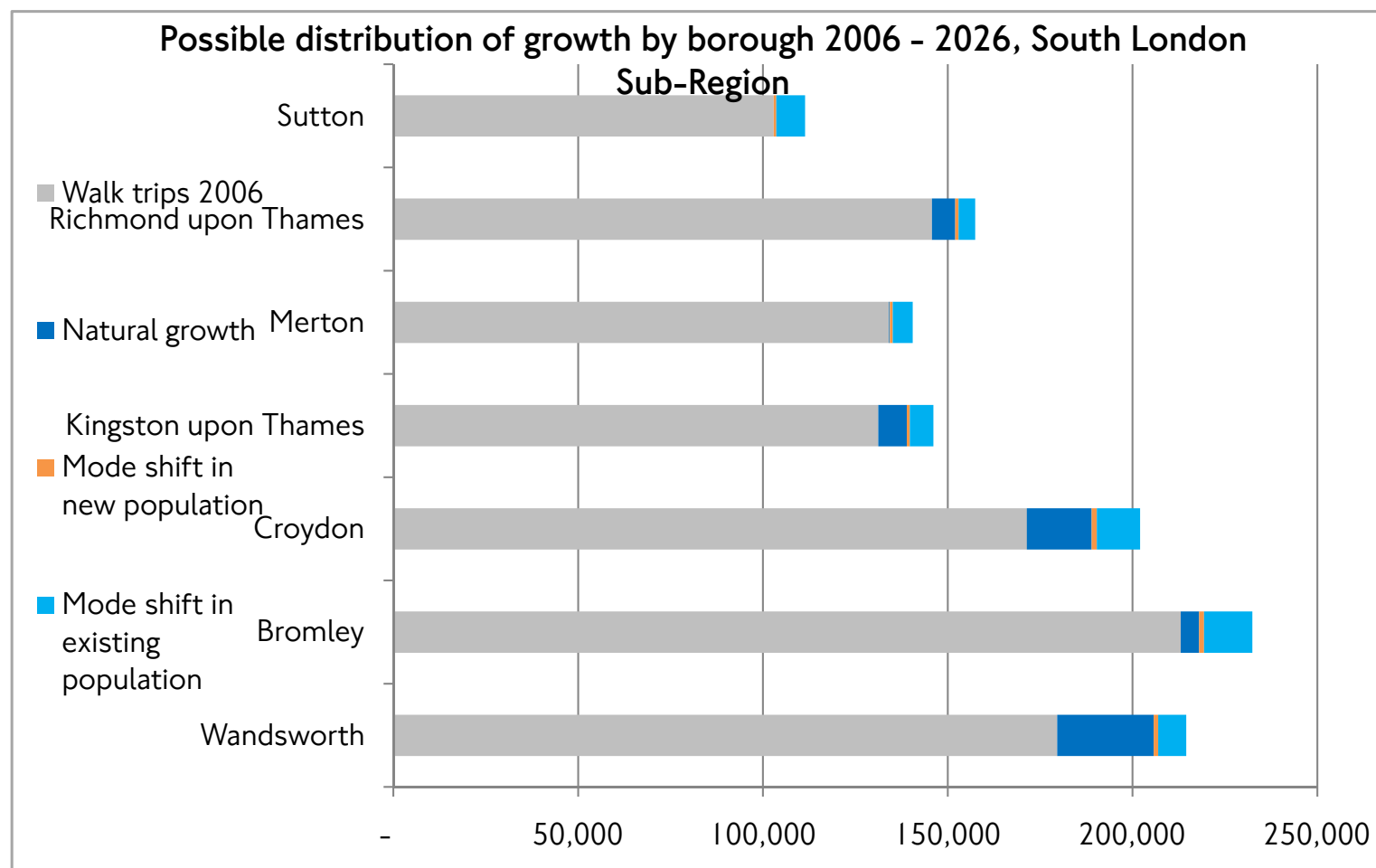
* Excess Wait Time

5.3c. Mode shift: bus

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 include:	Measures to support bus use	Examples where undertaken
Major hubs	Kingston, Croydon, Sutton, Bromley	Population growth creating pressure on roadspace and terminal capacity	<ul style="list-style-type: none"> • Direct access to major passenger interchanges • High quality interchange facilities • Sufficient terminal capacity • Bus priority on approach corridors 	Masterplanning exercises in various major town centres, eg. Croydon OAPF
Other significant hubs	Orpington, Wimbledon, Richmond, Clapham Junction, Putney, Wandsworth, Tooting, Crystal Palace, Norwood Junction, Mitcham, Wallington, Morden, Surbiton and Twickenham			New bus facility at Elmers End (LB Bromley)
Residential areas	Throughout the area.	Requires additional public transport capacity	<ul style="list-style-type: none"> • Direct alignments through the site • High quality bus stops • Bus terminals where appropriate • Bus priority on-site and on adjacent links 	Cane Hill hospital site (LB Croydon)
Commercial sites	Industrial, office, retail and leisure sites throughout the area.			Willow Lane industrial area (LB Merton)
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

5.3c. Mode shift: walking



Quantifying walk travel

Walking in the Mayor's Transport Strategy

The south sub-region currently has 1,231,000 walk trips, with potential for another 474,000; the south has only realised 72% of its walking potential. Kingston, Sutton, Croydon and Bromley are key town centre hotspots where more walking is a viable option. More widely there are still significant opportunities for modal shift to walking, and there must be an emphasis on delivering a step change in conditions for walking, particularly in inner London neighbourhoods and town centres across the region.

Growth in walk travel is expected to arise from two sources: growth in population and employment accounting for around three quarters of this increase – over 800k walk trips; and growth resulting from mode shift to walking accounting for around one quarter – nearly 300k walk trips.

Key Walking Routes

TfL has been working with boroughs for a number of years to implement 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 type of place that Key Walking Routes might link together include:

- public transport stations and stops
- schools
- local shopping parades and centres
- health, care and community centres
- leisure facilities
- other key destinations

Key Walking Routes are applicable to central, inner and outer London but are especially relevant to metropolitan town centres where

known walking potential exists.

Key Walking Routes should be implemented in areas that are currently used by large volumes of people or places with a known pedestrian demand that is not being met. They should be based on an understanding of pedestrian needs and behaviour.

It is important to emphasise that Key Walking Routes are not about one-off treatments, but are coordinated approaches to walking improvements.

Key Walking Routes planned in the south sub region include:

- Wallington, Sutton 2011/12
- St James Road Kingston 2011/12
- Bromley North Village, 2012/13
- Worcester Park, Sutton 2012/13
- Loughborough Junction, Lambeth 2012/13
- Lower Downs Road, Merton 2012/13

Key Walking Routes directly tackle the factors that Londoners consistently state as preventing them from walking more often (Attitudes to Walking, TfL 2011) and might include a mix of the following:

- widened and repaved footways
- new and improved pedestrian crossings on desire lines
- improved accessibility through step-free access
- removal of obsolete signs, poles, columns and railings
- trees and planting to green streets
- seating
- removal of hiding spaces and blind corners
- signing, in particular Legible London
- street lighting for pedestrians
- shared space

Legible London

Poor signage and a subsequent fear of getting lost impacts upon peoples' decision to walk. Legible London provides the confidence to walk and

navigate when walking. Implementing Legible London supports wayfinding but also serves to highlight a town centres' attractions to visitors, boosting local economies. Legible London in the south sub-region is suited to all town centre environments and public transport hubs.

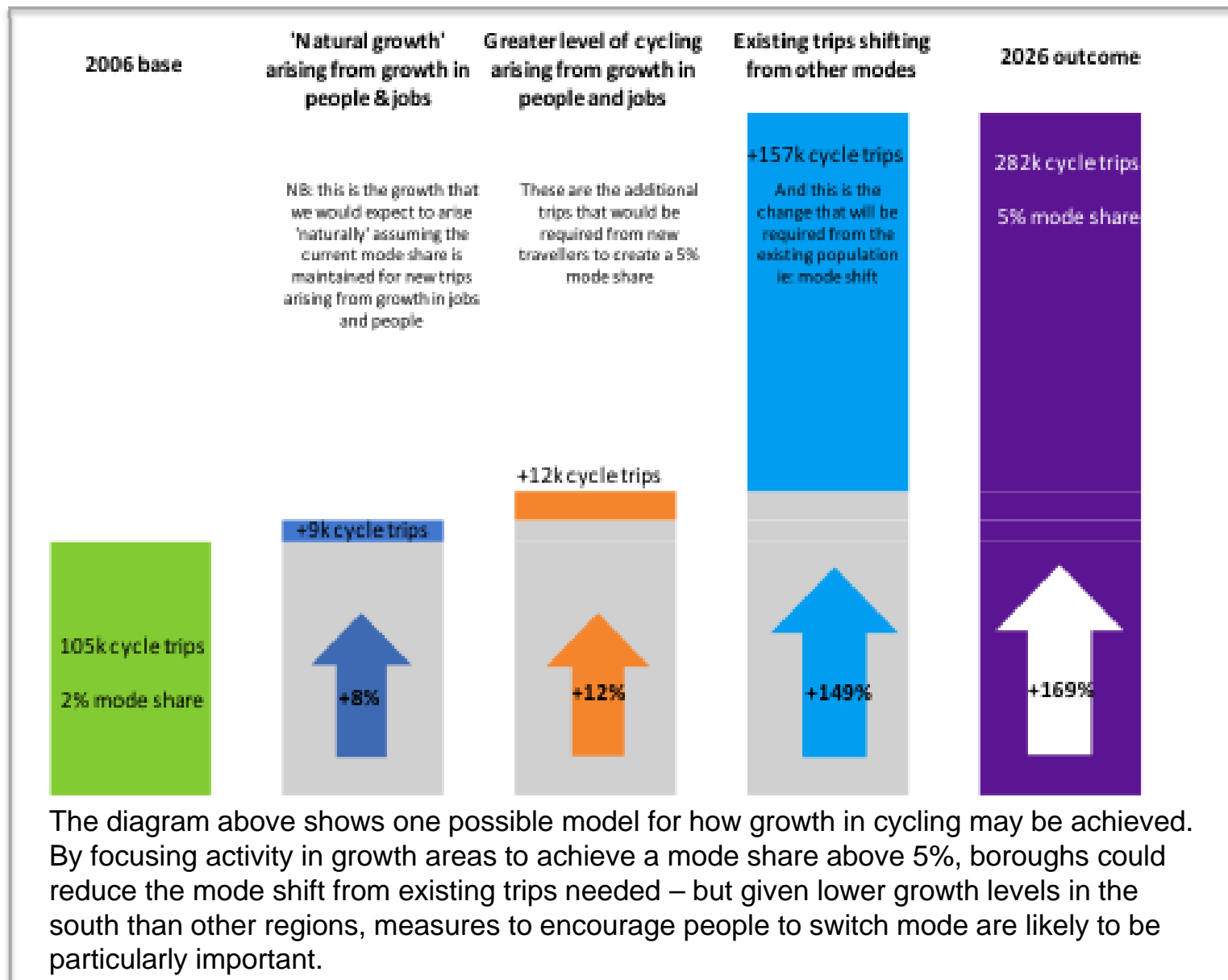
Integration into places

- It is vital that the needs of pedestrians are taken into account in the design of new places, from fast walking commuting pedestrians to young children learning to walk to school.
- A choice of walking opportunities; off-highway leisure routes and direct, town centre routes should be provided.
- Visible and easy-to-follow walking routes should be signed by Legible London to access shopping, transport and leisure destinations.
- Public realm should be well-lit, and attractive in order to allow safe, direct and comfortable movement on foot.

Walk London network (Strategic Walk Network): TfL funding with borough support was allowed this network of seven walk routes to complete on time for the 2012 Games and Diamond Jubilee. TfL data highlights that leisure walking opportunities support people to consequently undertake more utility (everyday) walking over time. 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, with the London LOOP and Capital Ring routes both passing through the region.

There is also an opportunity to harness 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 so that improved levels of walking can be maintained.

5.3c. Mode shift: cycling



There are high densities of potentially cyclable trips in inner London and in the outer London town centres. South London has significant cycling potential that is concentrated in the large urban centres such as Kingston, Croydon, Bromley and Streatham. This offers an opportunity for focused interventions.

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

Using lessons learned from Biking Boroughs could help capitalise on the significant potential which exists in many parts of inner London and outer London town centres. The focus is likely to remain on delivering a

package of measures which addresses the main barriers to cycling, including interventions such as residential bike parking and security, permeability and road safety.

On the strategic road network, there needs to be enhanced focus on improving the cycling environment e.g. By improving safety at key TLRN junctions. It will also be important to focus on new development, for example, embedding cycling even more strongly within OAPFs and masterplanning 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 south London include:

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.
- Review of a number of key TLRN and Barclays Cycle Superhighway junctions and future design
- Reducing conflicts between cyclists and other vehicles through a joined up approach of education campaigns, more enforcement and improvements to road space.
- Working with the freight industry: innovations in technology /vehicle design .

Cycle Security & Theft Prevention

- Cycle theft is still a major factor in putting people off taking up cycling as well as causing new cyclists to revert to cars/public transport.
- Provision of more secure cycle parking and increased cycle registration

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'.
- Measures designed to encourage leisure travel as a 'first step' e.g. training & quiet or off-road routes
 - Anticipated population growth in south London includes groups of the population e.g. young families which currently have a low propensity to cycle and tend to aspire to drive.
 - Expanding the appeal of cycling to a wider group of people - especially women, people from ethnic minorities & lower income groups.
 - Making cycling affordable for low income groups e.g. bike libraries,

improving access to cycle-to-work scheme, community insurance, company bikes (similar to company cars), green points etc..

- Making the most of events such as a 'Marathon on Wheels' to inspire people to cycle
- Measures to help keen cyclists who move to London and find they don't have the cycle facilities they were previously accustomed to e.g. storage space at home and/or work, safe cycle routes

Integration into places

- Ensuring that the needs of cyclists are taken into account in the design of new places, from long-distance cycle commuters to young children learning to ride a bike
- A series of Cycle Hubs in high density destinations – dedicated routes, wayfinding, secure parking, maintenance, cafes and cycle shops.
- High quality interchange between cycling and PT, particularly rail
- Supporting the private sector to develop commuter cycle hubs offering paid-for cycle storage, maintenance, changing room and locker facilities at major employment destinations.
- Networks of connecting routes and cycle friendly treatments in local centres – quiet routes for accessing schools or for leisure travel; fast, direct routes for commuters ('Principal Cycling Routes'); improved legibility and permeability of streets.
- Visible and easy-to-follow routes to access shopping and leisure destinations.

5.3c. Cycling: A Demonstration in Kingston

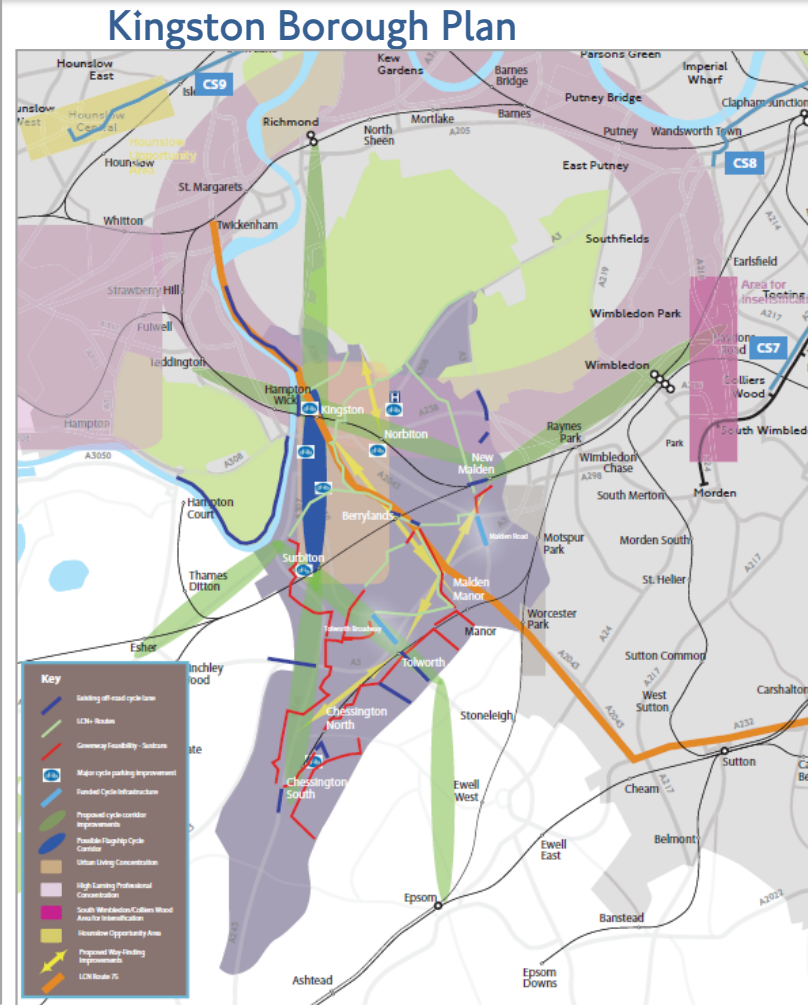
Recent Progress

Following its successful Biking Borough bid, Kingston has implemented a number of off-road cycle lanes within Kingston Borough such as Wood Street and Malden Road (highlighted in light blue on Figure 2) as well as providing additional cycle parking facilities and funding for training and promotion.

Major Committed Schemes

Through its LIP programmes, Kingston is also investing in the following infrastructure schemes:

- Tolworth Greenway
- Ancient Market.
- Surbiton Station Cycle Hub



Potential Package of Measures to Transform Cycling in the Borough

- Large scale increases in secure cycle parking capacity at key stations (including a possible hub at Kingston Station); cycle parking retro-fitted to existing residential / employment areas
- Network of cycle routes to link the main centres within the borough and connect to key centres in neighbouring boroughs; segregated facilities where possible; investigate potential for high quality cycle corridors e.g. Kingston to Surbiton, sub-regional orbital routes such as LCN Route 75 and the completion of Sustrans Greenway Network
- Need to increase permeability e.g. Contraflow along Albert Road
- Cycling integrated into new workplace & residential developments
- Cyclist priority at key junctions; high quality cycle lane appearance and finish; enhance and promote the borough's quiet residential roads for cycling
- Implement the Tolworth Broadway and high quality cycle parking at Tolworth Rail Station

Building on proposals set out in Kingston's Biking Borough Cycling Strategy, this case study approach sets out an initial demonstration of the level of investment and type of measures likely to be necessary to transform cycling in London. The case study highlights the recent investment made by Kingston and includes planned Biking Borough & LIP investment in infrastructure schemes such as the

Tolworth Greenway and Ancient Market and Surbiton station. Kingston, through its LIP and Cycling Strategy, has set out further ambitious cycling improvements, many of which are incorporated in the plans above. Measures in the highlighted in the case study have also been informed by TfL's cycle potential analysis using Mosaic and LTDS data.

Kingston Town Centre Plan

Here, a plan of infrastructure measures is set out for the town centre. 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.



Potential Measures

1. Riverside

- Long term objective to implement a combined pedestrian / cycle boardwalk that links Portsmouth Road to Thameside

2. Station Cycle Hub at Kingston Station subject to support from South West Trains

- Opportunity to provide a manned cycle hub similar to that planned for at Surbiton station. This could include facilities such as rental, maintenance, storage and valet services.

3. Proposed Secure Cycle Parking

- At high demand locations in and around the town centre, including a possible cycle hub, incorporated in the re-development of the town centre and cycle-centred University frontage.

4. Contraflow along Albert Road

5. Improving cycling conditions and across the ring-road

- The wide, fast flowing ring road around the town centre creates an environment not conducive to cycling. Measures such as reducing the speed of traffic by re-engineering the carriageway and installing speed cameras will make this road more conducive to cycling and walking.

6. Cycle link between Kingston and Surbiton

The approach needs to be about a package of measures which is best delivered by the boroughs and supported by TfL e.g. retro-fitted cycle parking with TfL promotional activity. We would be keen to work with other boroughs in the south to identify the priorities within each area.

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 e.g. via development and sponsorship.

5.3d. Better streets and re-balancing places

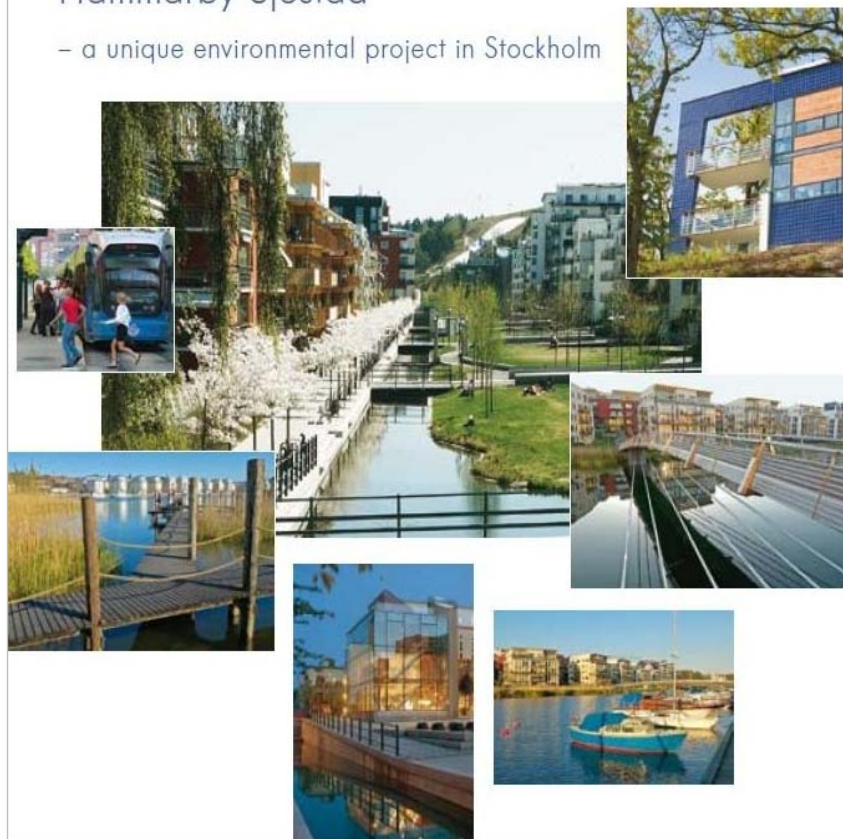
Examples of better streets and successful place shaping / resolution of place conflicts

With the continuing increase in population, innovative means of de-coupling regeneration and economic / social activity from car ownership and use - as far as practicable - will be increasingly important ('car-lite' growth). Places like Chicago, Freiburg and Hammarby have taken different approaches to promoting more liveable streets and sustainable modes while still supporting access to a car where needed.

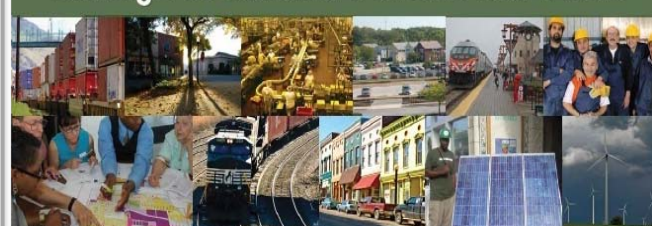


Hammarby Sjöstad

- a unique environmental project in Stockholm



Chicago Southland's Green TIME Zone



A south London example: Wallington Town Centre

BEFORE



AFTER



Other better streets schemes planned in the south sub-region include:

- Clapham Gateway
- Tolworth Broadway
- Clapham Junction town centre
- Colliers Wood Tower
- Croydon High Street
- West Croydon Gateway
- New Addington
- Kingston town centre
- Streatham High road

It is important to improve the 'attractiveness' of key places in South London to live, work and visit, putting pedestrians and cyclists at the heart of our thinking. With the forecast increases in population and employment in the sub region it will also be necessary to seek improvements in the efficiency of people movement along certain corridors – including bus, walk and cycle – ensuring good access to town centres and other key places.

As buses are efficient users of scarce road capacity, implementing priority for bus passengers is one effective way of dealing with travel demand arising in line with the expected growth in London's population.

In the process of 'Rebalancing' it may be possible to achieve some win-wins but in many instances trade offs will be required. Schemes such as Castle Street, Kingston showed how transforming particular streets from a location where motor vehicles dominated into space for users to spend time in as well as high quality access for walking and cycling could support local business and a cafe culture.

Measures to promote this may include:

- high quality interchange: walking / cycling / PT
- 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 and improved accessibility
- improved walking routes and wayfinding, including legible London
- ensuring that all new development inspires people to walk and cycle and includes high quality urban realm and cycle parking facilities
- making the most of mass participation events to inspire people to walk and cycle and see places in a different light

- new ways of thinking about costs and incentives – creating financial incentives to walk/cycle and encouraging people to shop locally and reduce short car use
- improved connections to green spaces; green grid links
- exploration of 20mph zones in defined locations
- development of 'future urban villages / smarter places' to bring together a comprehensive package of measures to help reduce car dependency, encourage active travel and deliver environmental benefits

In February 2011, the Mayor announced that he intended to keep LIP funding at £147.8m for the next three years (2011/12 to 2013/14). This means that for 2013/14 there will be an increase in LIP funding of £15.8m in comparison with the previous £132m that was announced following SR10. Boroughs will be notified how the re-instated LIPs funding will be allocated once the results of the winter 2011/12 Principal Road Maintenance surveys have been completed, as these will in part inform the resources required for that programme.

As highlighted on page 27, good access for buses and ensuring the infrastructure to support these services (e.g. stands) is vital to ensure places remain accessible for work or shopping or leisure. Opportunities can be sought which improve conditions for buses and other modes, such as the contra-flow bus lane in Bloomsbury Way which also involved the widening of the footway.

5.3d 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.



Wimbledon Town Centre urban realm improvements

5.3e. Capacity for movement of people and goods

The Mayor's Transport Strategy 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.

South London's Roads face a significant challenge due to the existing levels of congestion which occur. With the forecast increase in population and employment the pressure is increasing and it is essential that TfL and boroughs start to plan strategically how to develop the road network in the future.

In tackling congestion there are a number of potential solutions (albeit that these may help mitigate potential increases rather than 'solve' the problem). The previous sections emphasise what could be done e.g. in relation to encouraging mode shift, reducing demand for travel by car and promoting more sustainable freight transport – but there are limits to what can be delivered in terms of journey times and reliability given the traffic levels at which the network is operating.

Given the importance of ensuring efficient access for freight and the continuing need in some cases for travel by private car, there also needs to be a focus on what can be done on the supply side to support such journeys. This can be split into two distinct categories:

1. The provision of new links which provide access into Opportunity Areas and other growth areas
2. New road capacity for strategic traffic

New links to serve Opportunity Areas will be required in order to provide access to the new developments as they get developed. As well

as providing limited access for cars and freight these links give the opportunity provide good access for buses, pedestrians and cyclists. It is also vital that these modes are provided with good links into the surrounding network. It will be possible for instance, to build in cycle lanes and bus priority. At this stage when people move into an area they will tend to evaluate their transport options, it is vital that they are offered a choice of mode and this offers a good opportunity to encourage people to switch from car to public transport, walk or cycle.

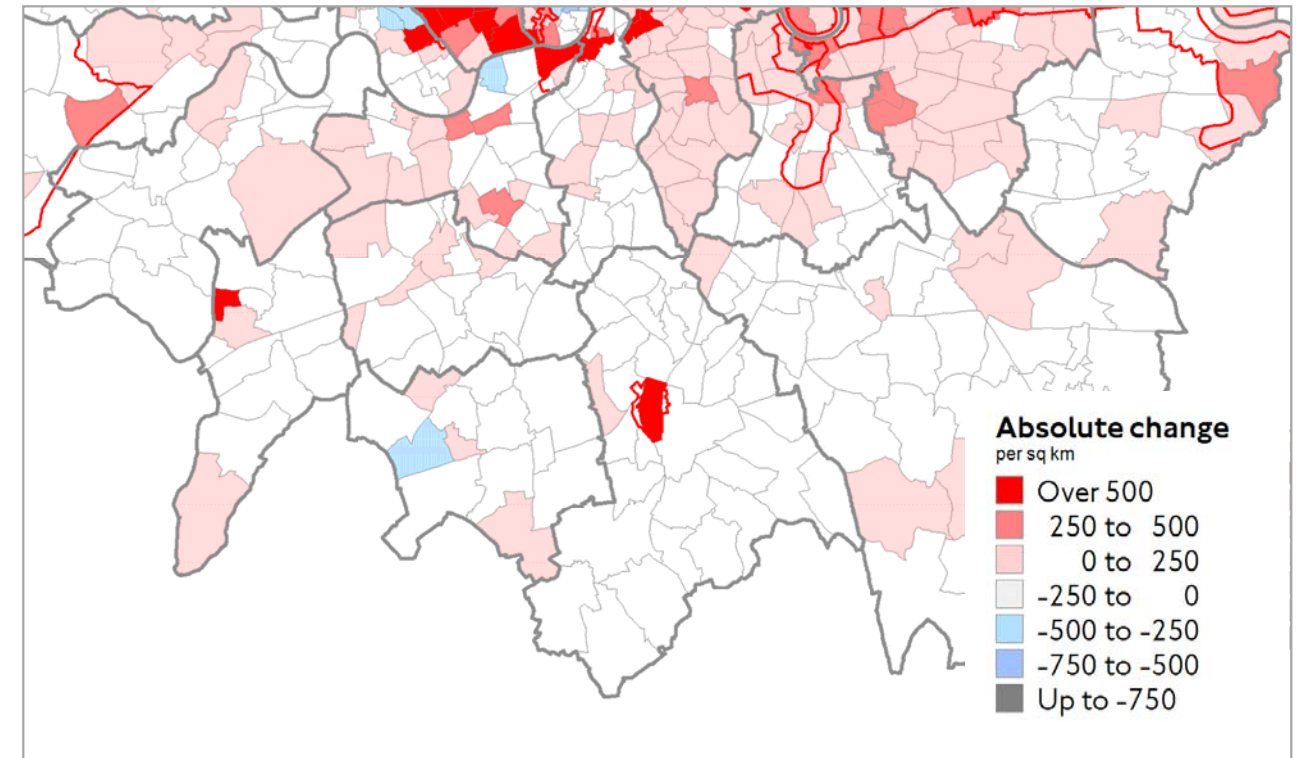
In some parts of London where tackling congestion is a priority and all opportunities for mode shift and demand management have been explored then it may be necessary to consider further development of the road network through additional road capacity such as bypasses or tunnels. Such schemes would only be considered where they met the criteria from MTS set out above. Instances where such proposals might be required might include:

- New strategic connectivity, potential options at junctions such as Croydon Fiveways.
- Providing alternative routes for current traffic in order to relieve congested locations (e.g. town centres) which may also contribute to place making and measures to improve quality of life.
- Relief on key radial and orbital corridors where other measures are inadequate.
- Improving routes for buses, cycles or pedestrians by providing additional road space which is dedicated for their use.

The sub-regional planning process offers an opportunity for TfL and Boroughs to work together to integrate congestion measures with other priorities in locations where there is particular conflict or current / future pressures.

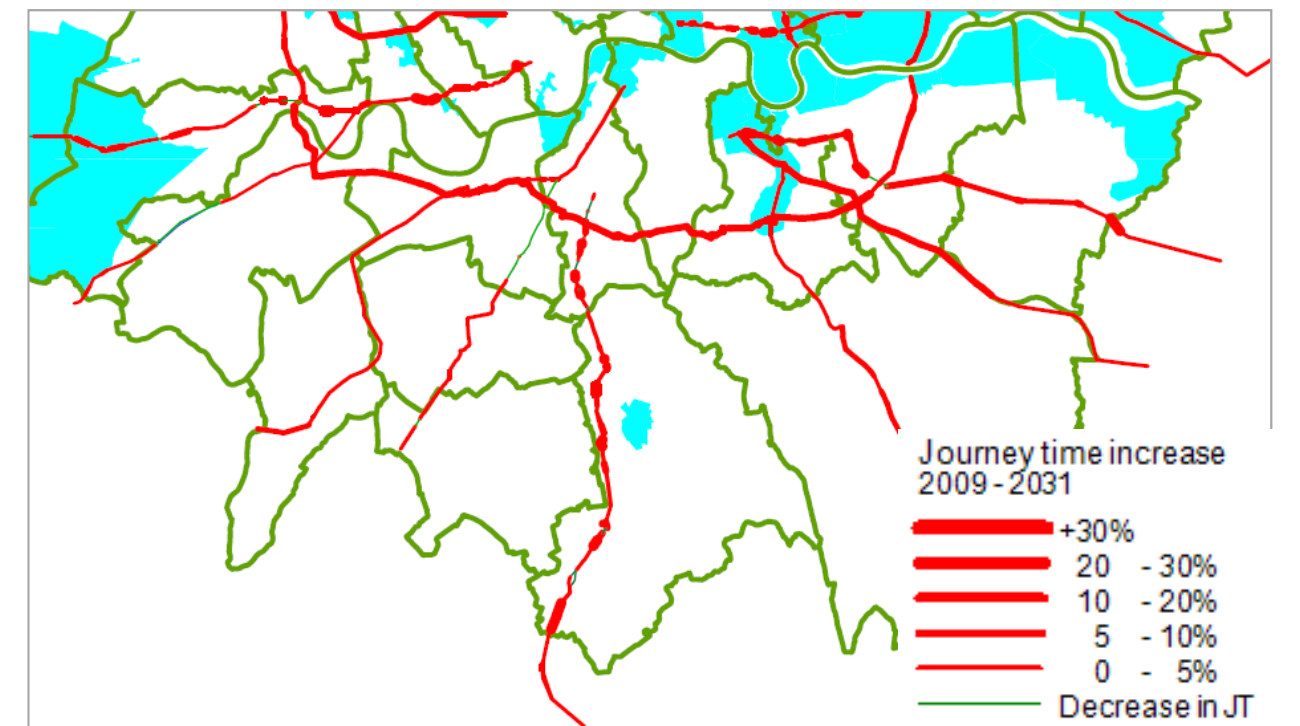
The following maps show future changes in demand for car travel and the corresponding increases in journey time in 2031.

Absolute change in trip destinations for car trips per square kilometre between 2007 and 2031 (AM peak)



London-wide route – inbound journey time changes

AM peak Highway Assignment Model analysis



5.3f. 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.

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

Cycle safety – junction reviews

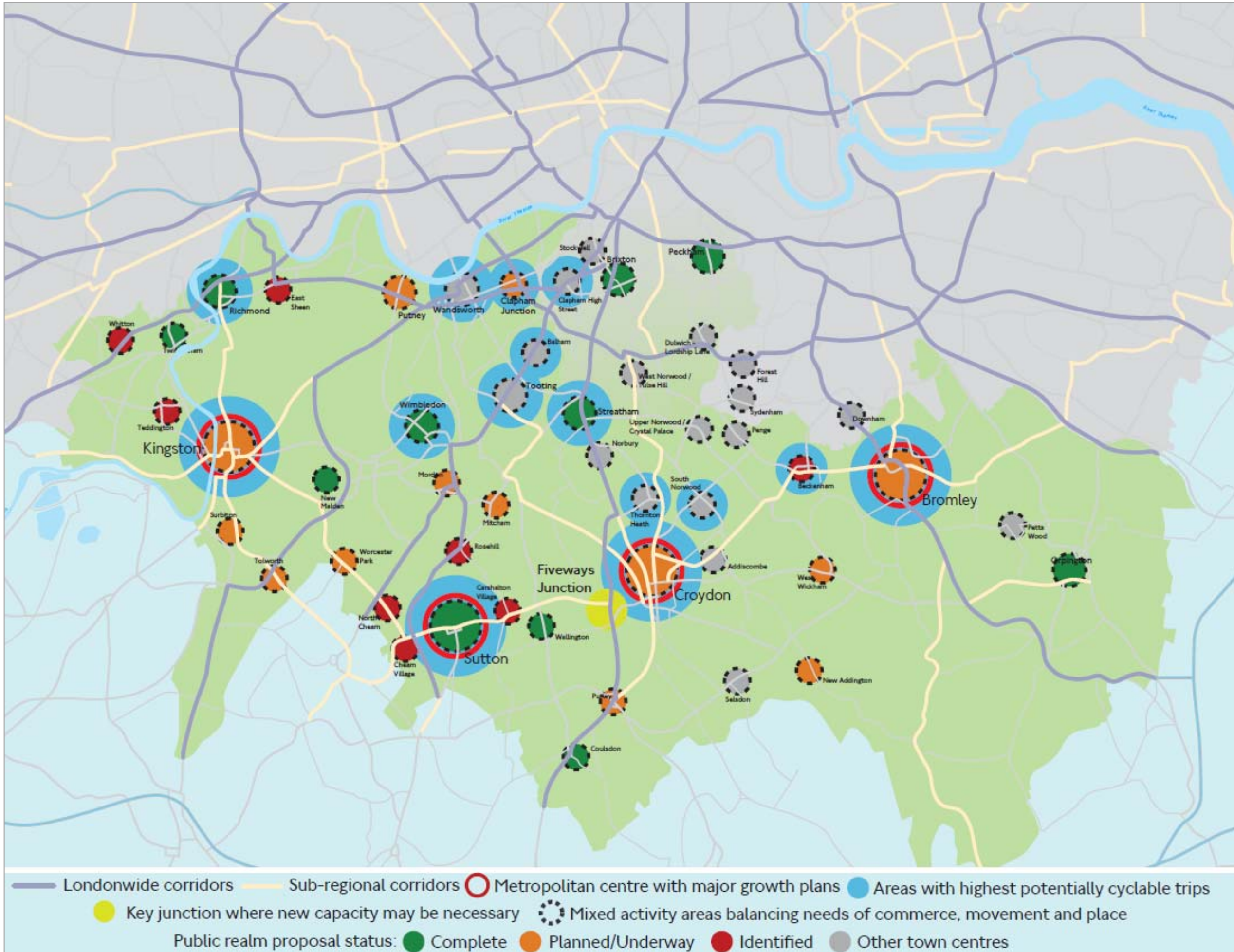
Towards the end of 2011 a number of cyclists were killed on London's roads. As a result, the Mayor asked TfL to carry out a thorough review of around 150 major junctions and planned schemes on TfL roads as well as all junctions on the existing Barclays Cycle Superhighways, to see if more could be done for cyclists in these locations.

TfL has confirmed which key London junctions will be the first of 500 to be examined as part of a major review of cycle safety ordered by the Mayor. Barclays Cycle Superhighway junctions under review in the south sub-region include:

- Balham Station
- Clapham Common / The Pavement Clapham South
- Oval triangle
- Stockwell Gyratory
- Vauxhall Bridge / Grosvenor Road Wandsworth Gyratory (Armoury Way / Old York Road)

TfL has formed a steering group and held the first of a series of meetings with key stakeholders as part of the junction review programme. Senior staff from TfL and representatives of the main road user groups including freight vehicle drivers, motorists, cyclists, pedestrians and road safety organisations will continue to meet regularly to discuss the establishment and progression of the review. The findings of the group will inform the design options for various junctions and to identify a preferred option in each case.

5.4 Spatial delivery of measures



5.4 Opportunity Areas and Areas of Intensification



Background

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

Each OA has different characteristics but most are on brownfield land and as part of their development require changes in land use type and mix. Typically each Opportunity Area 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 CO₂ and integrating transport and land use.

This also provides the opportunity to design in urban realm priorities, eg 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 OAs and AIs in the South Sub Region

The London Plan identifies Croydon OA and South Wimbledon/Colliers Wood AI within the South Sub Region. Vauxhall Nine Elms Battersea will also have an impact

on the region.

Since the South Sub Regional Plan was published the LB Croydon, GLA and TfL are working to produce an Opportunity Area Planning Framework for the Croydon OA. Progress on this area is set out on the next page.

5.4 Croydon Opportunity Area Planning Framework: Transport Strategy

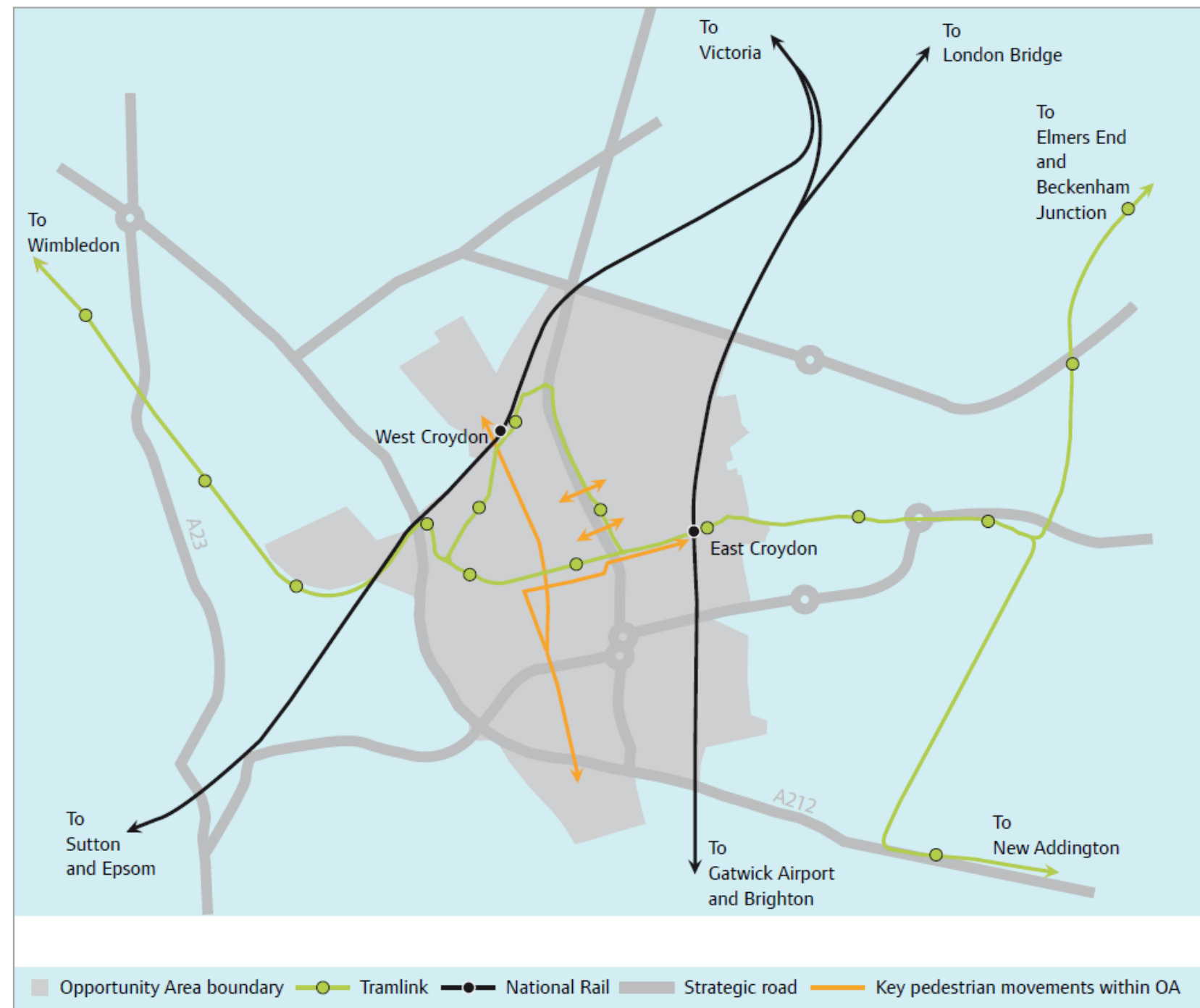
An Opportunity Area Planning Framework (OAPF) is being prepared for Croydon jointly by GLA, LB Croydon and TfL.

The transport strategy for the OAPF development investigates the transport challenges and impacts of an additional 8000 Households and 8000 Jobs. The OAPF will help to resolve complex planning issues relating to the provision of significant residential and commercial growth.

Croydon is one of the most accessible locations in Outer London with good highway and public transport connections

Key challenges for the OA in the future include:

- Crowding on the National Rail services from East Croydon Station;
- Maintaining reliability to good strategic highway connections, for all users including bus passengers as a result of increases in demand on the highway network
- Poor connectivity and barriers to movement by key highways in the town centre impacting on the amount of trips which are made by walk or cycle
- High Passenger demand for bus and Tramlink services serving the OA, as well as crowding on Tramlink services particularly on the loop.



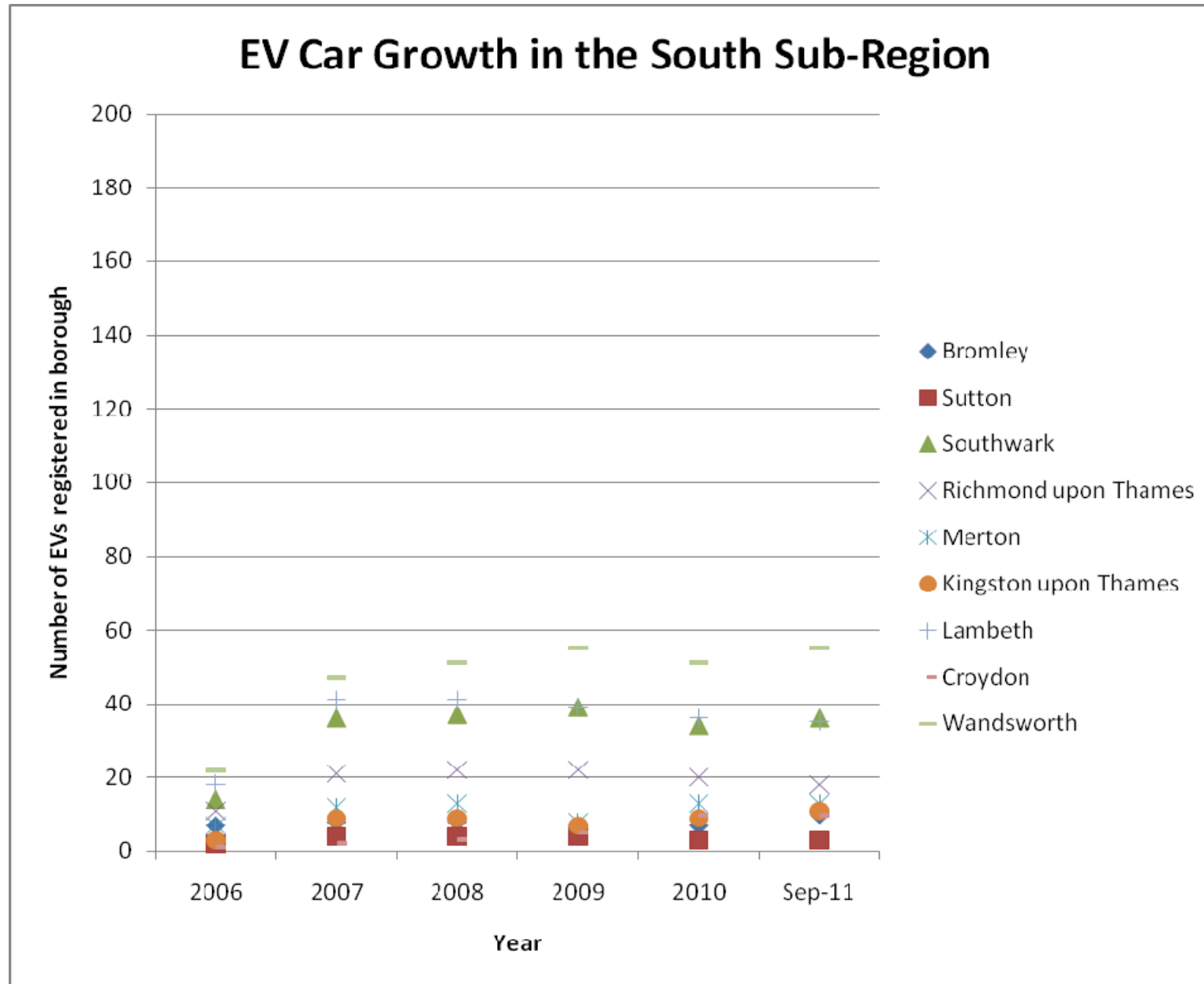
The Croydon OAPF will include a set of transport interventions which will support the level of development proposed in the OA.

Committed Schemes in the area will also help to support the development. These include:

- East Croydon Pedestrian Bridge (creating East-West Connection)
- Train lengthening on Southern and Thameslink Services.
- LB Croydon Status as a Biking Borough
- Connected Croydon Programme
- Legible London in Croydon Town Centre
- Purchase of 6 additional trams

The OAPF acknowledges the Mayoral and Borough aspirations for the Wellesley Road and supports the high level principles for Wellesley Road.

5.5 Meeting the environmental challenge: Air Quality



The highest PM₁₀ concentrations are predicted to be closest to roads, although locally some sources (such as industrial sources) may cause elevations. While PM₁₀ annual and daily mean limit values are expected to have been met by 2011, it will still be important to continue to focus on reducing PM₁₀ and particularly smaller particles (PM_{2.5}) in order to deliver ongoing health benefits for Londoners – according to the WHO, guideline values cannot fully protect human health

Meeting the NO₂ limit value is challenging and the problem is much more widely spread across London. There has been little downward trend in NO₂ concentrations at the monitors across the sub-region in recent years

and many roadside locations in the South sub-region currently exceed, and are likely to do so in future years based on current trends.

As well as support for a shift to more sustainable modes outlined in the previous sections, there are also some specific measures that could help improve air quality.

Schools Toolkit

There are 13 primary schools located within NO₂ focus areas. There has recently been much research into the impact of 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.

Building on the success of the current Clean Air Fund (CAF), TfL is working with the GLA to produce a 'template' of local measures that can be applied at both PM₁₀ priority locations and NO₂ focus areas more widely across London and included in Air Quality Action Plans and LIPs.

In early 2012, a new trial of dust suppressants at industrial locations under CAF is commencing, including a site in Sutton (Beddington Lane).

GLA and TfL are seeking to secure some funding to progress additional measures and also enable communities and boroughs to bid for innovative schemes. There would thus be a mixture of GLA Group-led initiatives and borough/community-led initiatives.

Examples of possible GLA Group measures include:

- urban greening;
- retrofitting schemes to reduce NO_x emissions from gas heating;
- trials of innovative technology and processes (e.g. photocatalytic surfaces).
- local freight consolidation schemes.
- small-scale traffic management schemes

Local communities at priority locations would be encouraged to develop their own air quality schemes, such as:

- school and business engagement campaigns (including local 'air quality champions').
- promotion of accessible air quality information
- local neighbourhood design schemes

Bus Retrofit

Retrofitting a Euro III bus with Selective Catalytic Reduction (SCR) reduces NO_x emissions by around 70%. DfT has awarded TfL £5m which TfL will match fund which will enable c900 buses to be retrofitted.

Across the NO₂ focus areas, buses contribute on average 36% of NO_x emitted by road transport, and at 32 sites the contribution of buses is over 50%. Further improving bus emissions represents an opportunity to reduce levels of NO₂ by targeting routes that pass through focus areas. E.g. Putney High Street.

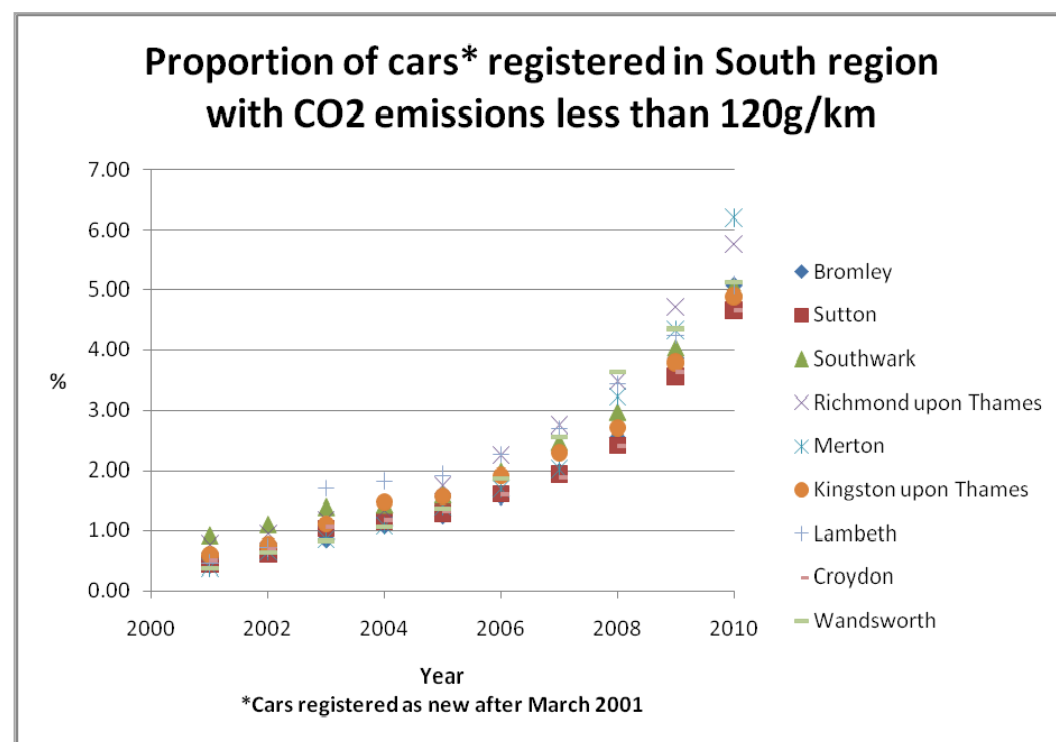
5.5 Meeting the environmental challenge: CO₂

London's CO₂ 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 CO₂ reduction is a London-wide - and indeed global task – action must also be taken at a sub-regional and local level.

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 us to meet the CO₂ targets in London.

The following chart show how gradual improvements in engine technology have reduced the proportion of the least efficient cars amongst the south regions fleet.

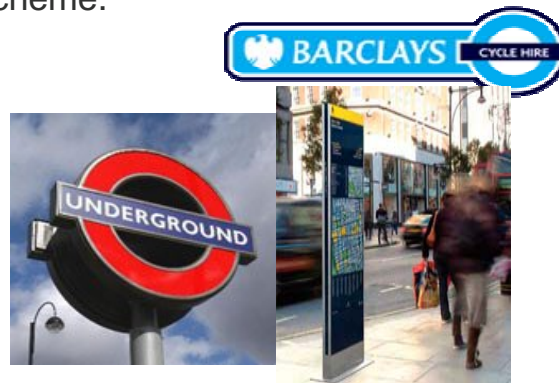


Further use of ultra-low carbon vehicles

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 per cent better than a conventional diesel double decker bus. The Mayor is also working to introduce hydrogen-fuelled vehicles into London.

Electric vehicle rollout

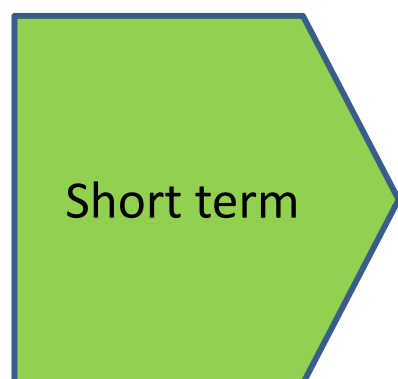
New charging infrastructure is being rolled out to support the introduction of 100,000 electric vehicles on London's streets. Source London was launched in May 2011. This is the UK's first citywide electric vehicle charging network and membership scheme. More need to be done to encourage take up of this scheme.



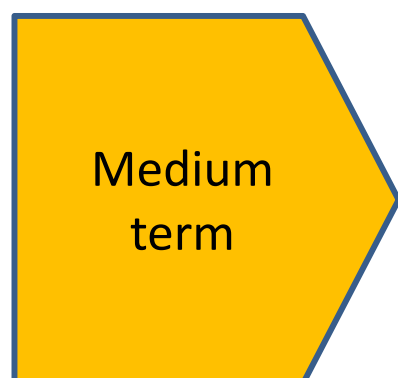
Moving to more carbon-efficient modes of transport

Supporting travel by public transport, unprecedented levels of walking and cycling investment, and energy efficiency measures on the London Underground.

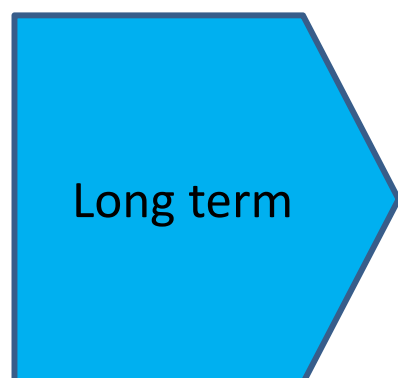
Other measures to reduce CO₂



- Delivering 1,300 publicly accessible electric vehicle charge points by 2013, proposing minimum levels of charge points in new developments
- Delivering the Hydrogen Action Plan, including the 50 hydrogen-powered vehicles
- 300 hybrid buses by the end of 2012
- Working with manufacturers to ensure all new taxis available by 2015 have 60% better fuel economy than vehicles produced in 2010
- Supporting pricing differentials, based on emissions, for resident parking permits and parking charges
- Encouraging the use of low emission vehicles within car clubs, including working with car clubs and boroughs to deliver charge points for car club electric vehicles.

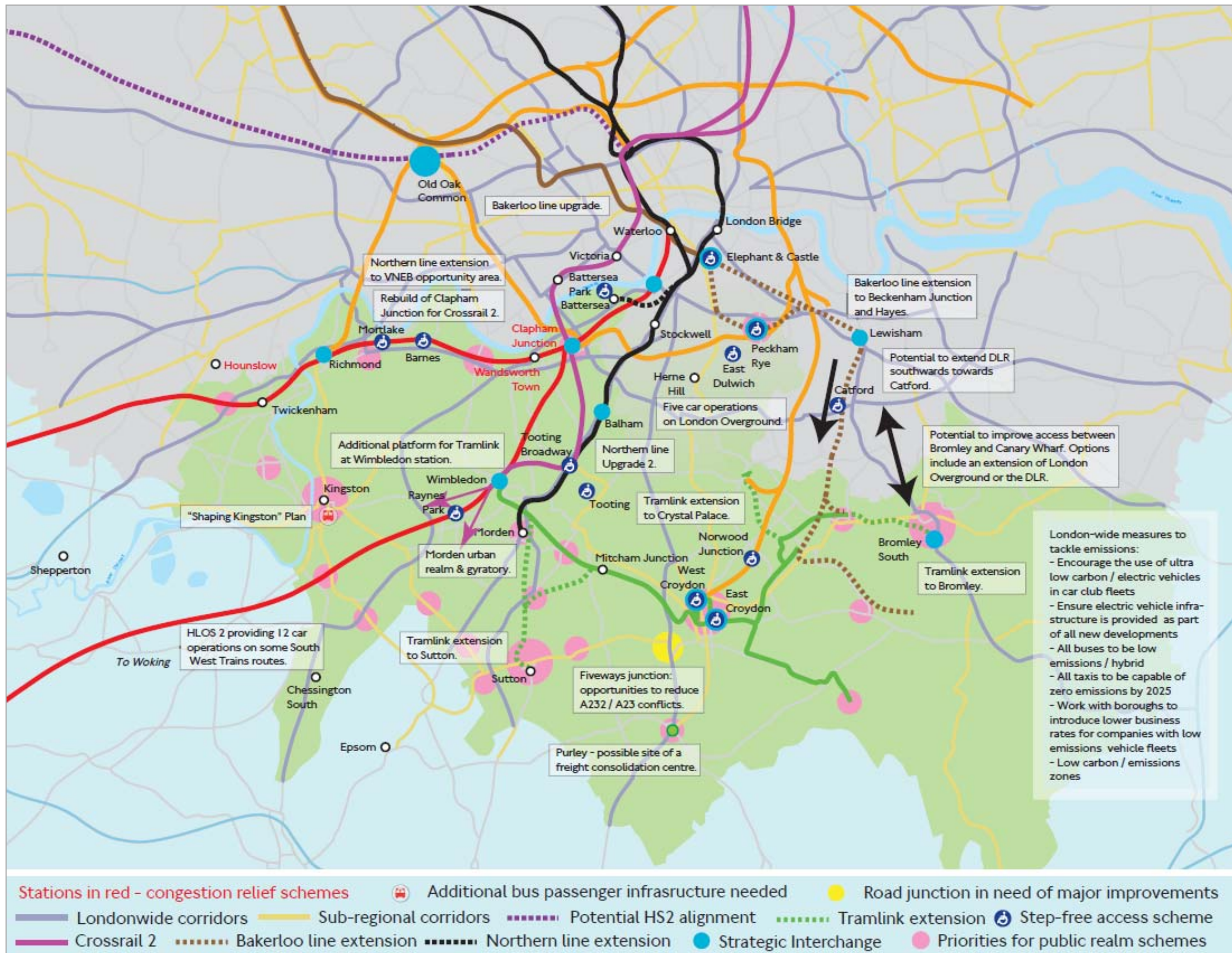


- Develop a partnership approach with energy companies and local authorities to increase networks of publicly accessible charging points to 10,000
- Move towards new residential development parking spaces to be EV charging point enabled
- Discounted Low Emission Vehicle adverts on TfL network
- Collaborating 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 CO₂g/km
- Working with boroughs to introduce lower business rates for companies with low emission vehicle fleets



- Working in a partnership approach with energy companies and local authorities so that every residential parking space (on and off street) by 2031 has an electric charging point
- Move towards all new development parking spaces to have EV charging points
- 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 CO₂g/km by 2025

5.6 Proposed further initiatives



6. Delivery

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.

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.

Maintain & Renew

Enhance

Expand

Traditional funding sources (Government grant, fares, efficiencies and savings)		Innovative funding sources (eg CIL, business rates, tolls, EU)
<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> Additional rolling stock Increased track capacity Better streets & highway development Operational enhancements Station and interchange schemes Bus service capacity enhancement 	<ul style="list-style-type: none"> 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

Implementation Plan

Appendix A sets out 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

7. Summary

6. Combined map - Committed schemes and proposed further initiatives



-  Bakerloo line
-  Bakerloo line extension
-  District line
-  Northern line
-  Northern line extension
-  Victoria line
-  Tramlink
-  Tramlink extension
-  London Overground
-  South West Trains
-  Southeastern
-  Southern
-  Thameslink
-  Crossrail 2
-  Potential HS2 alignment
-  Londonwide corridors
-  Sub-regional corridors
-  Barclays Cycle Superhighways
-  Step-free access scheme
-  Strategic Interchange
-  Priorities for public realm schemes
-  Walking, urban realm and streets scheme
-  TLRN safety survey
-  Road junction in need of major improvements
-  Additional bus passenger infrastructure needed
- Stations in red - congestion relief schemes
-  Connectivity challenge
-  Biking Boroughs

Committed schemes:

- A new timetable will be introduced on the Victoria line in 2013 to exploit further the new signalling the upgrade has delivered, providing 33 trains per hour.
- Northern line to be completed in 2014. This will increase capacity by a fifth and reduce journey times by 18%.
- Clapham Junction: Improved entrance at Grant Road to facilitate Overground extension.
- Underground: Introduction of new S-stock trains on the District line. A signalling upgrade is due to be delivered in 2018/19 providing a 14% uplift in capacity.
- Cycling scheme: A24 London Road Cycle Route Implementation and Stakeholder Plan.
- London Overground: extension from Surrey Quays to Clapham Junction is due to open in December 2012.
- Southeastern train lengthening on suburban routes to London Bridge.
- South Central train and platform lengthening completed on suburban routes to Victoria.
- 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.
- Journey Planner update, enabling planning for whole of journey step-free access.
- Double-tracking on Tramlink between Mitcham and Mitcham Junction.
- Two new Barclays Cycle Superhighways opening: CS5 Lewisham to Victoria and CS6 Penge to the City.
- Completion of Bromley North Village urban realm scheme to encourage walking.
- Tramlink: introduction of Line 4 (Therapia Lane - Elmers End).
- South West trains rolling stock: train-lengthening to 10-car on Main Line suburban and Windor services.
- Connected Croydon programme of public realm schemes.
- New overbridge / ticket hall & cycle parking at East Croydon station.
- Tolworth Broadway urban realm schemes
- Morden town centre regeneration study.

Potential initiatives beyond the Business Plan:

- Bakerloo line upgrade.
- Bakerloo line extension to Beckenham Junction and Hayes.
- Northern line Upgrade 2.
- Northern line extension to VNEB opportunity area.
- Additional platform for Tramlink at Wimbledon station.
- Morden urban realm & gyratory schemes.
- Tramlink extension to Crystal Palace.
- Tramlink extension to Sutton.
- Rebuild of Clapham Junction for Crossrail 2.
- HLOS 2 providing 12 car operations on some South West Trains routes.
- Fiveways junction: opportunities to reduce A232 / A23 conflicts.
- Purley - possible site of a freight consolidation centre.
- Five car operations on London Overground.
- Potential to improve access between Bromley and Canary Wharf. Options include an extension of London Overground or the DLR.
- Potential to extend DLR southwards towards Catford.
- "Shaping Kingston" Plan
- 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

APPENDIX A: Implementation Plan

Reference Number	Scheme	Description	Completion 2010–2012*	Completion 2013–2020†	Completion Post 2020	Status update
Rail (DfT/Network Rail/TOC led schemes)						
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.
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 Grinstead 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 reformation underway
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
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.
Rail (TfL led schemes)						
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

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						
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
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 cycle parking facilities by 2013. Lobbying continues for enhancements on other routes.
52	Interchange enhancements	East Croydon concourse refurbishment, new pedestrian bridge, interchange declutter				Work started on new bridge, completion by 2013
53	Interchange enhancements	Bromley South accessibility enhancements and ticket hall enlargement				On site at present, completion during 2012
54	Interchange enhancements	Wimbledon station forecourt improvements				Complete
55	Interchange enhancements	West Croydon - improved integration between, rail, tram and bus station				Work underway to open second entrance and improve interchange between tram, train and bus. Completion expected in 2012.
56	Interchange enhancements	Clapham Junction accessibility improvements and new entrance				Completed
57	Interchange enhancements	Clapham Junction station improvement - capacity enhancements, widen overbridge, provide escalators				Brighton Yard now open providing access to new lifts.
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.
Tube						
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
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.
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						
80	DLR extensions	Potential extension to Forest Hill				Scheme options to be further reviewed, subject to development of sub regional plan
Tramlink						
84	Tramlink potential extension to Bromley	Potential extension from Beckenham Junction on-street to Bromley				Scheme options to be further reviewed, subject to development of sub regional plan
86	Tramlink capacity	New trams providing capacity between Therapia Lane and Elmers End				Additional trams entering service - to be completed summer 2012
87	Tramlink potential extension from Wimbledon to Sutton	Potential extension from Morden / Mitcham Junction to Sutton.				Scheme options to be further reviewed, subject to development of sub regional plan
88	Tramlink potential extension from Croydon to Thornton Heath and beyond	Potential extensions from Croydon to Thornton Heath as a first phase with potential for extensions further northwards towards Streatham and Brixton. However, potential traffic issues along A23				Scheme options to be further reviewed, subject to development of sub regional plan
89	Tramlink potential extension from Wimbledon to Tooting	Potential extension from Wimbledon to Tooting as a mixture of segregated and street-running track				Scheme options to be further reviewed, subject to development of sub regional plan
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

Reference Number	Scheme	Description	Completion 2010–2012*	Completion 2013–2020†	Completion Post 2020	Status update
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.
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						
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
105	Borough cycling initiatives - infrastructure based	Infrastructure based solutions such as cycle parking, cycle routes and improved signage, on areas with highest potential including Biking Borough initiatives				Programme developed and implementation started in 2011.
106	Borough cycling initiatives - non-infrastructure based	Non-infrastructure solutions to help promote cycling across London including identifying the markets and planning interventions based on evidence and other Biking Borough initiatives				Programme developed and implementation started in 2011.
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.
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

Reference Number	Scheme	Description	Completion 2010–2012*	Completion 2013–2020†	Completion Post 2020	Status update
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.
126	Potential gyratory and one-way system improvements, e.g. at Morden and Wimbledon	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				Under development
132	Blackwall Tunnel (northbound) refurbishment	Refurbishment of tunnel				Completed
133	Road improvement scheme at Lewisham	Road improvements				Currently under construction and will be completed before the Olympics
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 transport				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
London river services and river crossings						

Reference Number	Scheme	Description	Completion 2010–2012*	Completion 2013–2020†	Completion Post 2020	Status update
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				<p>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.</p> <p>For the 2012 Games improvements are being made to the Journey Planner accessibility information to enable better planning of level access routes.</p> <p>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 improved 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.</p>
158	Richmond 2009 to 2012 Smarter Travel Programme	Complete the three-year programme of smarter travel initiatives in Richmond				Programme cancelled in 2011 due to reallocation of funding.
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				<p>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.</p> <p>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 http://www.startrack.org.uk/</p>
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				<p>A closely-monitored trial of a DSP at a TfL building has seen the number of overall deliveries reduced by 20%.</p> <p>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.</p> <p>Planning policy (Replacement London Plan published July 2011) is supportive of the principle of privately financed consolidation centres.</p>
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.
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.

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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						
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 its current targets in the Draft Accessibility Implementation Plan which was published in 2011.
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 'Integrated 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.

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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)