LONDON PLAN IMPLEMENTATION PLAN 1

JANUARY 2013

LONDON PLAN 2011
IMPLEMENTATION FRAMEWORK

MAYOR OF LONDON

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CHAPTER 1

INTRODUCTION

CHAPTER ONE INTRODUCTION

Purpose and status

1.1 The purpose of the London Plan Implementation Plan is to set out how the policies of the London Plan will be translated into practical action. It is important to ensure the effective implementation of the policies supporting the Mayor's planning powers– in particular providing a framework for translating the trends and policies set out in the London Plan into investment decisions and plans. This Implementation Plan provides an overview of mechanisms – a toolkit – to achieve this.

1.2 It also provides a more robust basis for infrastructure planning across London. During the Draft Replacement London Plan consultation a wide range of stakeholders including boroughs had pressed for such improved implementation and infrastructure planning by the Mayor. The Government has also emphasised the importance of planning for and implementing infrastructure to support growth.

1.3 The Implementation Plan is intended to:

- facilitate effective coordination and cooperation of activities to ensure the realisation of the London Plan.
- inform developers and all delivery partners who need to understand the envisaged implementation actions and strategic infrastructure provision in relation to the London Plan.
- provide communities with transparent and accessible information to enable them to get involved in the development of their area.
- help boroughs in terms of the wider context for their local implementation and infrastructure planning and the preparation for their Community Infrastructure Levy (CIL).

1.4 The importance of these issues is underlined in the Government's National Planning Policy Framework, which emphasises the importance of planning authorities planning positively for the development and infrastructure required for the growth and development of their areas. It encourages inclusion of policies in Local Plans setting strategic priorities for their areas including strategic policies to deliver housing; economic development; provision of infrastructure for transport, telecoms, waste management, water supply, wastewater, flood risk, coastal management, the provision of minerals and energy (including heat); health, security, community and cultural infrastructure and other facilities; and measures to address climate change[1]. This Implementation Plan is intended by the Mayor as a resource which boroughs and others can draw on in addressing these tasks, within the framework provided by the London Plan.

1.5 Whilst the production of an Implementation Plan for the London Plan is not a statutory requirement, it will be a valuable and flexible tool to support the application of the London Plan policies. Policy 8.4 (Part B) of the London Plan introduces the Implementation Plan as follows:

> *"The Mayor produces an Implementation Plan which includes a range of strategic actions that the Mayor, boroughs and key stakeholders across the public, private, voluntary and community sectors will deliver to ensure the implementation of this Plan. The Implementation Plan is produced separately, but clear links between implementation actions and policies in the London Plan are included and it will be updated regularly."*

Scope and limitations

1.6 This Implementation Plan will be an evolving document. A baseline of information is being established but it

[1] See CLG, National Planning Policy Framework, March 2012, paragraph 156

currently remains high level and has a number of gaps. Work will continue on a range of aspects, particularly on filling data gaps through further research and/or in cooperation with relevant delivery agencies and as further details about availability of resources are known. Over time the document will be refined and more detail will be added. The Implementation Plan will complement the implementation and infrastructure planning required to support Opportunity Area Planning Frameworks (OAPFs) and Local Plans, addressing the broad implementation dimension appropriate to the level of detail of the London Plan.

Structure and methodology

1.7 The Implementation Plan aims to be user-friendly, concise, transparent and easy to update. It is organised around two core sections:

1.8 At the centre of the first (chapter 2 plus Annex 1) is a range of **strategic implementation actions** for the GLA Group, partner organisations and delivery agencies covering all policy areas. This is based around a comprehensive investigation into the implementation dimension of all policies of the Plan. The implementation actions support and facilitate the implementation of the London Plan policies. They include significant investment initiatives and strategies, as well as important partnerships and research work. Specific guidance and support for boroughs in realising the London Plan through their Local Plans is also included. For each implementation action, information about responsible delivery bodies, a timescale for delivery and a degree of certainty is provided. No attempt is made to prioritise individual actions over others. Rather an indication is given about the firmness of commitment expressed by key deliverers to each action and to the dependencies in terms of resources, local commitment, individual circumstances, Government decision/guidance, technical expertise or better partnership working. Potential barriers that have to be overcome in each case are being identified. Current economic circumstances and potential spending constraints in the public sector are also taken into account.

1.9 The second core section (chapter 3) addresses the **strategic infrastructure** required to support the growth set out in the London Plan (and particularly housing growth) over the period to 2036. Infrastructure that is of significance across borough boundaries, in terms of transport, utilities (water, energy, waste), telecommunications, social and green infrastructure is explored – initially on a broad London-wide basis. As far as possible this process includes identifying the potential infrastructure need based on transparent assumptions about future resource demand and other aspects. The provision of infrastructure to meet this need, cost and potential funding opportunities of strategic infrastructure are also addressed. Funding opportunities that apply across different types of infrastructure are the focus of chapter 4. However, it should be noted that in many cases budgets, funding mechanisms and priorities in the public sector are extremely uncertain. Therefore, the information provided is kept very brief and high-level.

Implementation Group

1.10 An Early Working Draft of this Implementation Plan was produced in September 2010 to illustrate the Mayor's approach to implementation planning for the London Plan Examination in Public (EIP). Whilst the Implementation Plan itself was not subject to scrutiny, many EIP participants welcomed the Mayor's approach and offered support for its further development.

1.11 An Implementation Group has been established to support the preparation and over time the review of the Implementation Plan. The Implementation Group aims to:

a) assist in providing the Mayor with data or potential sources of data required for the development and updating of the Implementation Plan;

b) assist in providing the Mayor with advice and analysis;
c) assist in suggesting and delivering actions for inclusion in the Implementation Plan;
d) assist in making policy recommendations to the Mayor on matters relating to implementation and infrastructure planning for possible inclusion in the London Plan and/or other strategies.

1.12 The Implementation Group is chaired and managed by GLA officers. Representatives are drawn from representatives of delivery agencies covering the different types of strategic infrastructure. Local authority officers and community representatives as well as other key stakeholders involved in infrastructure planning are also represented.

1.13 As the current focus is on strategic infrastructure, sub-groups have been formed for the different types of infrastructure. They will over time help to shape and refine the different sections. For the production of this draft input was largely sought from the delivery agencies that could provide data/information to establish a baseline. However, over time the role of representatives from local authorities and sub-regional bodies is likely to increase as closer links to the implementation and infrastructure aspects of Local Planning documents are sought.

London Plan Implementation Framework

1.14 At its centre of the Mayor’s new approach to implementation of the London Plan is a suite of documents that together make up a London Planning Implementation Framework. The Implementation Plan is the overarching implementation document within this. The Implementation Framework also includes:

- Supplementary Planning Guidance (SPG), with a formal status. – They are individually included in Annex 1.
- Opportunity Area/Intensification Area Frameworks, with a formal status
- Implementation guides
- The Annual Monitoring Report, with a formal status.

CHAPTER 2

IMPLEMENTATION ACTIONS FOR THE LONDON PLAN POLICIES

CHAPTER TWO IMPLEMENTATION ACTIONS FOR THE LONDON PLAN POLICIES

2.1 Paragraph 8.20 of the London Plan states that at the centre of the Implementation Plan '*is a range of strategic and tangible implementation actions for the GLA Group, partner organisations and delivery agencies covering all policy areas. The implementation actions support and facilitate the implementation of the Plan's policies. For each implementation action, information about responsible delivery bodies, a timescale for delivery and a degree of certainty/ commitment are provided..'*

2.2 The implementation actions are listed in Annex 1, and this chapter aims to identify strategic and tangible implementation actions across the topics the London Plan addresses. The following provides an overview of the wide range of different types of implementation mechanisms.

The Mayor's planning powers and influence

2.3 The London Plan itself is a statutory planning document with formal development plan status.[2] It is the main vehicle for coordinating strategic decision-making on London's development on a spatial basis. The Plan influences development decisions primarily in the following ways:

- The London Plan itself forms part of the development plan, which should be taken into account by boroughs in making planning decisions.
- Borough development plan documents (DPDs) must be in general conformity with the Plan.[3]
- The Plan directly provides the policy framework for the Mayor's own decisions on strategic planning applications referred to him.
- Major investment decisions regarding infrastructure and services may be strongly influenced by the Plan, which also provides the spatial context for the Mayor's Transport Strategy (MTS) and other strategies.[4]

2.4 These planning and investment powers are the main vehicles of implementing the Plan. As they are relevant across basically all policies, they are not specifically mentioned in Annex 1, which summarises implementation actions for the different policy areas.

Working in partnership

2.5 The Mayor cannot implement the Plan alone. He will work with a range of organisations to align priorities and ensure that the objectives and policies of the Plan are implemented. Partner organisations include (not exhaustive):

- The GLA Group— Transport for London (TfL), the Metropolitan Police Authority (MPA) and the London Fire & Emergency Planning Authority (LFEPA)
- The boroughs within, and the local planning authorities around, London – and their representative associations and partnerships at local, sub-regional, London-wide and county levels
- The private sector, including developers, infrastructure providers and business organisations. The private sector makes a significant contribution to implementation, particularly in opportunity and intensification areas. They are also responsible for two thirds of housing

[2] GLA Act 1999, Section 334, Planning and Compulsory Purchase Act 2004, Section 37(6)

[3] Section 24, Planning and Compulsory Purchase Act 2004

[4] Section 334(4), Greater London Authority Act 1999

output across London, and the office, retail and leisure developments, which are driving town centre regeneration

- Government (CLG in particular) and the European Union
- Statutory agencies such as the Environment Agency, Natural England, English Heritage and Network Rail
- The voluntary and the community sector, whose role will be strengthened, including for example the London Forum of Civic and Amenity Societies

2.6 Working with a wide range of existing partnerships provides an efficient way of involving stakeholders in complex issues. Important partnerships and umbrella organisations include for example:

- Geographic: Local Strategic Partnerships, London Councils, sub-regional partnerships and town centre partnerships, Outer London Commission and county networks in the greater south-east of England
- Sectoral/thematic: London First, CBI, House Builders Federation, London Biodiversity Partnership, London Climate Change Partnership, London Access Forum, emerging London Housing Board[5] and London Enterprise Partnership

2.7 The Mayor also supports approaches to planning, regeneration and development that harness the knowledge, commitment and enthusiasm of local communities, enterprises and other groups. He will encourage use of tools such as Neighbourhood Plans, Community Right to Built and community land trusts Community Land Trust, and Business Improvement Districts, which enable communities to shape their own neighbourhoods through the management and development of land and other assets (including those transferred from public sector organisations). He recognises the importance of development trusts, other community organisations and local business partnerships and bodies in helping to shape and develop neighbourhoods, sometimes in ways that the public sector cannot.

2.8 In particular with regard to certain infrastructure (for transport, water, waste and energy) the Mayor also seeks to influence the Government and the infrastructure regulators and to work with the infrastructure providers in London in order to ensure the timely delivery of new infrastructure. However, the efficient management of existing assets and incentives to promote behavioural change are also critical to reduce resource and infrastructure needs. - See section 3 for more details on the different types of infrastructure.

2.9 This Implementation Plan highlights for the different policy areas key partners and partnerships that help the Mayor to deliver the Plan (see Annex 1). However, due to the complexity of many policies, not all relevant/interested bodies are mentioned.

Supporting strategies and guidance

2.10 The Mayor, the GLA Group and partners at national, London-wide and borough level produce a wide range of strategies on various topics. It is important that they are aligned and reinforce each other.[6] Several strategies have been identified that reinforce and support the implementation of different policies in the Plan (see Annex 1). These include the Mayor's Housing, Transport and Economic Development Strategies. However, it is not considered necessary to duplicate the content of these documents in this Implementation Plan.

2.11 Many London Plan policies are also supported by Supplementary Planning Guidance (SPG) published by the

[5] Replaced the Housing and Communities Agency in London

[6] Section 41 (4) and (5), Greater London Authority Act 1999

Mayor. These are included in Annex 1. They provide detail to help boroughs in reflecting the Plan's policies through their local plans. The following list provides an overview of the programme of SPG production at the time of writing.

The indicative programme of planned SPGs and similar publications during 2013 include (not exhaustive):

- London Planning Statement (to replace GOL Circular 1/2008)
- Crossrail S106/CIL SPG
- Safeguarded Wharves Review
- Planning for Hazardous Installations
- Central Activity Zone SPG
- Town Centre SPG
- Affordable Housing Toolkit
- Strategic Housing Land Availability Assessment
- Understanding Place SPG
- Accessible London SPG
- Lifetime Neighbourhoods and Neighbourhood Planning SPG
- Control of Dust / Emissions during Construction SPG
- Sustainable Design and Construction SPG

The following link http://www.london.gov.uk/priorities/planning/vision/supplementary-planning-guidance takes you to the latest position in terms of SPGs that are published – final or in draft. This is also included in the current AMR – see paragraph 4.1.

2.12 The SPGs often refer to case studies and good practice. The Mayor's London Planning Awards also showcase and promote annually such good practice.

2.13 The Mayor keeps the London Plan under continued revision to ensure it is as up-to-date as possible. He is currently promoting Revised Early Minor Alterations to the Plan to take account of the National Planning Policy Framework, changes to national policy on affordable housing and other developments. During 2013 he will start work on Further Alterations to roll the Plan forward to 2036, particularly with the strong population growth recorded by early data from the 2011 census in mind.

Area-specific action plans and designations

2.14 Mechanisms to promote development, improvements and regeneration in specific areas of London include (not exhaustive):

- Opportunity and Intensification Area Planning Frameworks to support the development of strategic locations with capacity for growth
- Strategic Industrial Locations (SIL), Town Centres and Business Improvement Districts as strategic areas to generate synergies of activities
- Area Strategies, Action Plans and Masterplans with detailed proposals for an area
- Management Plans ensuring the maintenance and enhancement of assets
- Policy designations ensuring that certain conditions are applied for development in the area covered.

2.15 Compulsory purchase powers may be used to acquire land in order to secure development where this is appropriate.

2.16 Annex 1 highlights for various policy areas important area-specific action plans and designations that help the Mayor to deliver the London Plan.

Assessments and research

2.17 The implementation of the Plan's policies requires robust evidence. Assessments and research studies are often undertaken or supported by the GLA Group, boroughs, consultancies and research institutes. These can underpin the case for developers, boroughs and others to act in accordance with the policies. That will often also inform the evidence base of the boroughs' local plans in terms of infrastructure provision. Annex 1 includes significant assessments and pieces of research. The Mayor will be discussing ways of working with boroughs and others to ensure the evidence needed for effective planning in London is gathered and disseminated in the most effective way possible. The programme of research that the Mayor will conduct to ensure the London Plan is kept up to date (on demographic and economic trends, for example) is reflected in this document and will inform future implementation of the London Plan.

2.18 The Mayor has announced his intention to review the way in which strategic policies on housing need and supply are developed to develop approaches that are more effective, “bottom-up”, participative and consensual. He will also want to ensure that this approach takes account of the emerging National Planning Policy Framework. Discussions have been held with boroughs and other stakeholders, and further details will be announced shortly.

Investment

2.19 Investment schemes by the GLA Group, by Government and by delivery agencies such as infrastructure providers are the most tangible and direct implementation mechanism. The private sector has also a significant role in financing investment. Some schemes that are related to individual policies are included in Annex 1. The delivery of strategic infrastructure to accommodate the growth proposed in the London Plan is addressed in more detail in chapter 3 whilst generic funding opportunities are covered in chapter 4.

2.20 The Mayor has taken on additional powers of implementation and delivery. He has taken on the London housing investment functions previously held by the Home and Communities Agency. Following the Localism Act 2011 he has taken direct responsibility for the land and development functions of the former London Development Agency, which have been merged into the GLA. There is the possibility of further policy and institutional changes which may affect future alterations of this document.

CHAPTER 3

PROVISION OF STRATEGIC INFRASTRUCTURE

CHAPTER THREE PROVISION OF STRATEGIC INFRASTRUCTURE

3.1 Paragraph 8.20 of the London Plan states that the Implementation Plan ‘also addresses more specifically the strategic infrastructure that is required to support the growth set out in the Plan.’ This chapter in particular is also supported by the National Planning Policy Framework (NPPF), which indicates that Local Planning authorities ‘should work with other authorities and providers to assess the quality and capacity of transport, water supply, wastewater and its treatment, energy (including heat), telecommunications, utilities, health, social care, education flood risk and coastal change management, and its ability to meet forecast demand (paragraph 162). Green infrastructure, which is also covered in this chapter, is referred to separately in the NPPF and in recognition of its climate change adaptation and its natural environment role (see paragraphs 99 and 114 of the NPPF).

3.2 This chapter aims to provide more detail on the strategic infrastructure required to support the growth of London envisaged in the London Plan (particularly housing). Initially the focus is on a London-wide overview of infrastructure requirements. However, further work will be undertaken to look in more detail at Opportunity Areas, Areas of Intensification and other strategic areas in more detail. Strategic infrastructure is defined as infrastructure that is relevant across large parts of London, provided on a network basis, or at least across boundaries, and is of a certain investment scale or where there is a known funding gap. This chapter also has also the potential to support the boroughs’ application of the Duty to Cooperate introduced through the Localism Act 2004.

3.3 The structure set out below illustrates a comprehensive approach to the provision of strategic infrastructure to support the growth proposed in the London Plan. The structure has been applied to the different types of infrastructure.

a) Identify strategic infrastructure within the following **types of infrastructure:**
   - Transport
   - Water
   - Energy
   - Telecommunications
   - Waste
   - Social Infrastructure
   - Green Infrastructure

b) Identify for strategic infrastructure the **need** to meet existing backlog and proposed growth by
   - using data/research from GLA Group as well as from regulators, infrastructure providers, sub-regions and boroughs
   - making transparent and realistic assumptions about future efficiency savings, changes in standards and behaviour

c) Identify **infrastructure provision** needed by 2031
   - liaising with infrastructure providers and sub-regional/borough representatives
   - prioritising and phasing them

d) Identify **infrastructure funding and delivery** for cost estimates (see chapter 4 if non-specific) by
   - liaising with infrastructure providers, sub-regional and borough representatives
   - providing any costs available, e.g. unit costs, but highlight assumptions
   - acknowledging uncertainties, risks and barriers

3.4 It has to be highlighted that the baseline information for each type of infrastructure in line with the approach set out above is still under development and will improve over time with more/new information becoming available.

LONDON'S OVERALL INFRASTRUCTURE NEEDS

3.5 In 2011 the Mayor made a high level assessment of London's overall need for infrastructure over the next twenty years, founded upon the projections about London's future growth over the two decades to 2031 underpinning the London Plan[7]. These suggest that by 2031:

- London's population will be 8.82 million – growth of 1.2 million over the period 2007-2031. By 2031, there are also likely to be both more young Londoners, and more older ones and a 690,000 increase in the number of those of working age. Most recent population projections and the first data from the 2011 Census suggest rather more rapid population growth than the London Plan.
- This population growth is projected to contribute to the formation of 790,000 additional households. If total housing need from household growth is to be met, and the backlog of housing need addressed, there would need to be 34,900 additional homes per annum. To meet this additional need for housing, the London Plan sets a target for provision of 322,100 additional homes between 2011-2021.
- As far as the economy is concerned, the Plan projections suggest an additional 776,000 jobs, with a continued shift towards the service sectors. It is likely that there will continue to be particularly strong employment growth in central and inner London. Most recent projections suggest rather slower jobs growth

3.6 These trends will mean an increased demand for infrastructure of all kinds in Greater London; for that reason the London Plan gives particular prominence to infrastructure planning through this Implementation Plan that will provide a sound framework for addressing the issue at London-wide and more local levels.

3.7 There are a number of source documents for infrastructure needs in London including the National Infrastructure Plan produced annually by HM Treasury and Infrastructure UK. Estimates of London's general infrastructure needs have also been made by London First's Infrastructure Commission[8] and the Policy Exchange. In addition, the Mayor's Transport Strategy looked at the likely need for transport investment beyond the TfL Business Plan[9] and work to inform preparation of this Implementation Plan gives a high-level view on provision of strategic infrastructure.

3.8 There is no comprehensive and generally agreed definition of infrastructure. This is reflected in the fact that different assessments of London's needs address different forms of infrastructure. The London Plan (and this document) deals with a range of different kinds of infrastructure; London First gives a partial definition; the other documents mentioned above give a list of examples. These are compared in Table 1, which shows that the only common items are transport and flood defences.

3.9 One reason for the differences between the approaches in these documents could be that much of the economic infrastructure in the National Infrastructure Plan is privately owned, but normally regulated, with investment the responsibility of the owners against the long-term customer funding. This is true for energy, water and waste, and communications. Consequently these services would not normally need to be

[7] As part of the Mayoral CIL - Draft Charging Schedule, August 2011

[8] London First, the Infrastructure Commission, World class infrastructure for a world city, November 2010.

[9] Mayor of London, the Mayor's Transport Strategy, May 2010.

funded through local authorities[10]. The lack of an agreed definition of infrastructure makes attempting to assess the infrastructure needed in London difficult.

Table 1: Comparison of infrastructure coverage

Source: Mayoral CIL – Draft Charging Schedule

National Infrastructure Plan	CIL overview document	London First Infrastructure Commission	GLA Draft Implementation Plan
Transport – road and rail	Transport – road and rail	Transport – road and rail	Transport – road and rail
Energy		Energy	Energy
Digital communication		Telecoms	Telecoms
Flood protection	Flood defences	Flood protection	Flood protection
Water and waste management		Water and sewerage, waste	Water and Waste
	Schools, hospitals, health and social care facilities		Social infrastructure
	Play areas, parks and green spaces, cultural and sports facilities, district heating schemes and police stations and other community safety facilities		Green infrastructure

[10] The London First report contains a useful table setting out the different ownerships and market features/funding sources for different kinds of infrastructure.

3.10 The National Infrastructure Plan 2012 includes an infrastructure pipeline with over 550 projects/programmes worth over £330 billion to 2015 and beyond. This is a UK wide figure and no regional breakdown is given, though there are regional examples of infrastructure improvements. (Taking London as 15% of the UK would give almost £50 billion). London First quotes a report by the think tank Policy Exchange of £500 billion over the next decade for the UK as a whole, but do not provide a London estimate. (Taking 15 per cent again, it would be £75 billion). No breakdown or prioritisation of investment need is made by category of infrastructure in either report.

3.11 The Mayor's Transport Strategy addresses costs and funding for London's transport system, including the national railway as well as the modes for which the Mayor is responsible. It quotes a figure of £4.8 billion a year for the next five years and continuing investment of £3.5 billion to £4.5 billion a year in the period up to 2031.

3.12 A further source of information about London's infrastructure needs is the core strategies and infrastructure delivery plans drawn up by London borough councils as part of their local development frameworks. There are limitations in using this information – not all boroughs have assessed and published their infrastructure requirements; those documents that have been produced have appeared at different times and with different assumptions about sources of potential funding (before and after the results of the 2010 Comprehensive Spending Review, for example). They look over different time periods, and often deal with widely differing types of infrastructure (some focus on that for which boroughs themselves have responsibility, while others include that provided by the Mayor and/or national government). Infrastructure serving more than one borough is sometimes double-counted and funding sources are often not clearly identified. It will be necessary to revisit borough data in the near future, and the Mayor intends to work with boroughs and other stakeholders to find ways to improve the presentation and use of this information.

3.13 All this said, these estimates are a valuable basis for a "bottom-up" assessment of need to complement the "top-down" ones referred to earlier. For this purpose, a number of assumptions have been made:

- The costs of transport schemes to be funded predominantly by national government, Transport for London or Network Rail have been excluded. These are included in the estimates given earlier, and more information about them will be given about these later.
- Borough figures for education, health and leisure have been used as given, although they often include assumptions about Government funding which may no longer be valid (because of the review of the Better Schools for the Future programme, for example)
- Assumptions have been made about funding of particular infrastructure (the Thames Tideway Tunnel being a good example), which should be discounted.

On this basis, information from 24 boroughs has been used (over 70 per cent of the total).

3.14 If this information is used to provide an average of borough estimates of need, and this average is then used to provide a 33-borough estimate. This is shown in Table 2:

Table 2: Borough-based estimates of infrastructure need (multi-year)

Type of infrastructure	Estimate (£m)
Transport	891
Education	4,851
Health	2,442
Leisure	825
Other	1,023
Total	**10,032**

Source: Mayoral CIL – Draft Charging Schedule

3.15 This estimate is generally in line with the details published by those London boroughs which have published Community Infrastructure Levy proposals.

3.16 If these boroughs' stated investment needs are typical, then the total for all boroughs for the next five years would be in the £6 billion to £7.5 billion range. This suggests that the £10 bn estimate in paragraph 3.14 is a reasonable one. It also provides a basis for comparing total borough needs with the strategic transport requirement of £24 billion. In both cases, Government will also have a role in supporting investment, whether in education or transport. It is recognised that grossing up from individual borough figure has its limitations, and the Mayor intends to keep the position under review as more information becomes available as part of the London Plan Implementation Plan process.

3.17 In summary, it is possible to give an overall assessment of London's infrastructure needs by adding the borough figure of £10.032 billion and the £24bn estimate of required transport infrastructure to give an estimate of £34 bn. If the longer-term estimates of transport need are added (£56-72 billion 2015-2031), a total estimated figure of £90-106 billion is obtained. Bearing in mind that this figure covers a longer time period than most of the estimates considered here, the London First figure of £75 billion may be a reasonable medium-term one.

3.18 The second aspect of the issue is the availability of resources. In 2010, according to the Government's Public Expenditure Statistical Analysis, capital expenditure on transport in London by national and local government and public corporations in 2009-10 amounted to £3.899 billion; with £1.56 billion for education and £882 million for health. Decisions on public spending are made on a three year basis, so it is not possible to make a reliable estimate across the whole period being considered. However, it is clear that in the short- to medium-term at least, public expenditure is likely to be constrained. Under the 2010 Spending Review, Departmental Programme and Administration Budgets are set to reduce in real terms by 8.3% between 2010/11 and 2014-15 (with reductions of 3.4 per cent in Education, 21 per cent in Transport, 51 per cent in Communities and Local Government support for local authorities, and an increase of 1.3 per cent for Health). If capital expenditure is considered, the 2011 Budget announced that nationally, between 2010/11 and 2015/16, education will see a £3.9 billion cut, health will see an increase of only £100m and transport one of £400 million.

3.19 Across all these estimates, it is clear that transport infrastructure provided at national, London-wide and borough levels is probably the largest single area (in terms of cost and investment) of infrastructure that will be required.

3.20 Different forms of infrastructure are dealt with in more detail in the remainder of this chapter. It illustrates that every type of strategic infrastructure requires a very different approach.

TRANSPORT

3.21 Information for transport infrastructure is largely drawn from the Mayor's Transport Strategy (MTS) 2010, the five Sub-regional Transport Plans prepared by TfL, the boroughs and sub regional partnerships, the current TfL Business Plan (to 2014/15), National Rail (NR) High Level Output Specification (HLOS)[11] for Control Period 4 2009 to 2014 and TfL's recent submission to Government for National Rail Control Period 5 2014 to 2019.

a) Strategic transport infrastructure

3.22 This includes routes and hubs of international, national, regional and sub-regional importance for passenger and freight transport. Improvements to rail[12] services, bus services, river services, cycling and walking, interchange, road improvements and demand management measures are considered in numerous programmes being undertaken by TfL, Network Rail and other organisations.

b) Transport infrastructure need

3.23 Population and employment growth projections that underpin the London Plan would result in at least three million more trips each day by 2031, from 24 million trips per day in 2007 to 27 million trips per day in 2031.

3.24 To ensure this growth is accommodated sustainably, the MTS[13] aims to increase the mode share for public transport from 31 per cent to 34 per cent, cycling from 2 per cent to 5 per cent and walking from 24 per cent to 25 per cent, from 2006 levels by 2031. Conversely, it aims to reduce the mode share of private motorised transport from 43 per cent to 37 per cent over the same period. This will require sustained investment in public transport, walking and cycling, to increase connectivity and capacity and to improve attractiveness of these modes of travel.

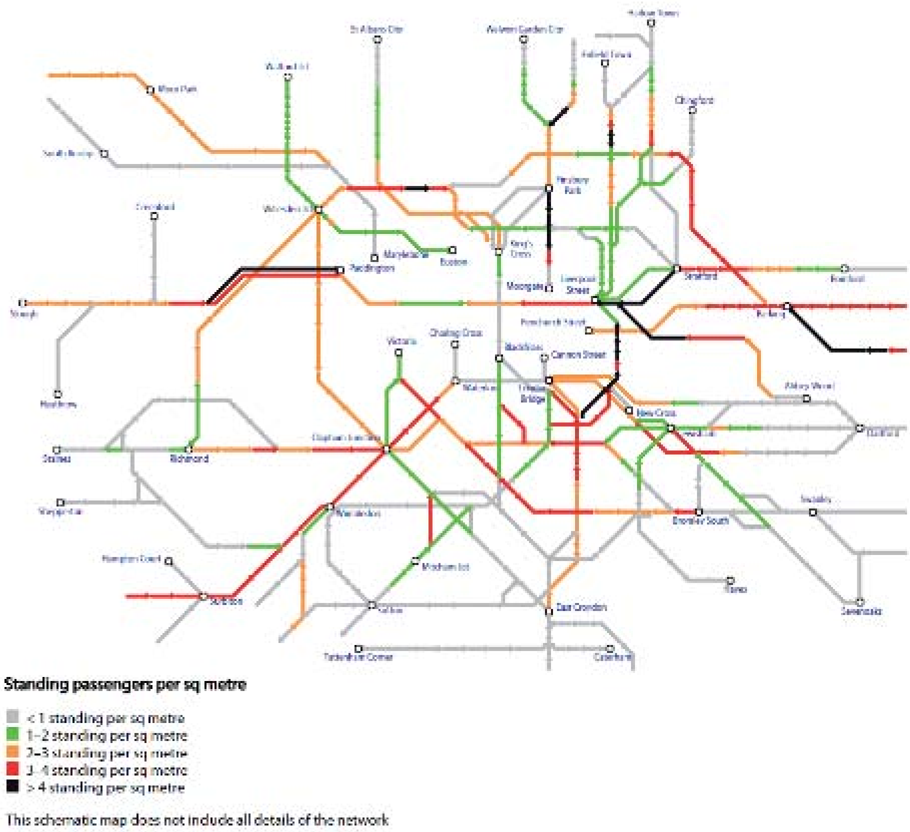
3.25 In spite of committed improvements set out in the TfL Business Plan (to 2014/15) and HLOS to 2014, crowding will remain on certain LU and NR lines [14] and on certain radial corridors into London[15] (Figures 1 and 2). Vehicle delay on the road network, particularly in Inner London and Outer London town centres, is also forecast to increase[16] (Figure 3). This has the potential to constrain growth and hinder delivery of the London Plan.

[11] Government's statement of the outputs it requires from the National Rail network for the next five year control period.
[12] London Underground (LU), London Overground (LO), other National Rail (NR), DLR and Tramlink
[13] Mayor of London, The Mayor's Transport Strategy, 2010, figure 2 (page 36)
[14] ibid, figure 20 (p 73) and figure 22 (p 75)
[15] ibid, figure 32 (p121)
[16] ibid, figure 26 (p85)

Figure 1: Tube and DLR crowding, 2031

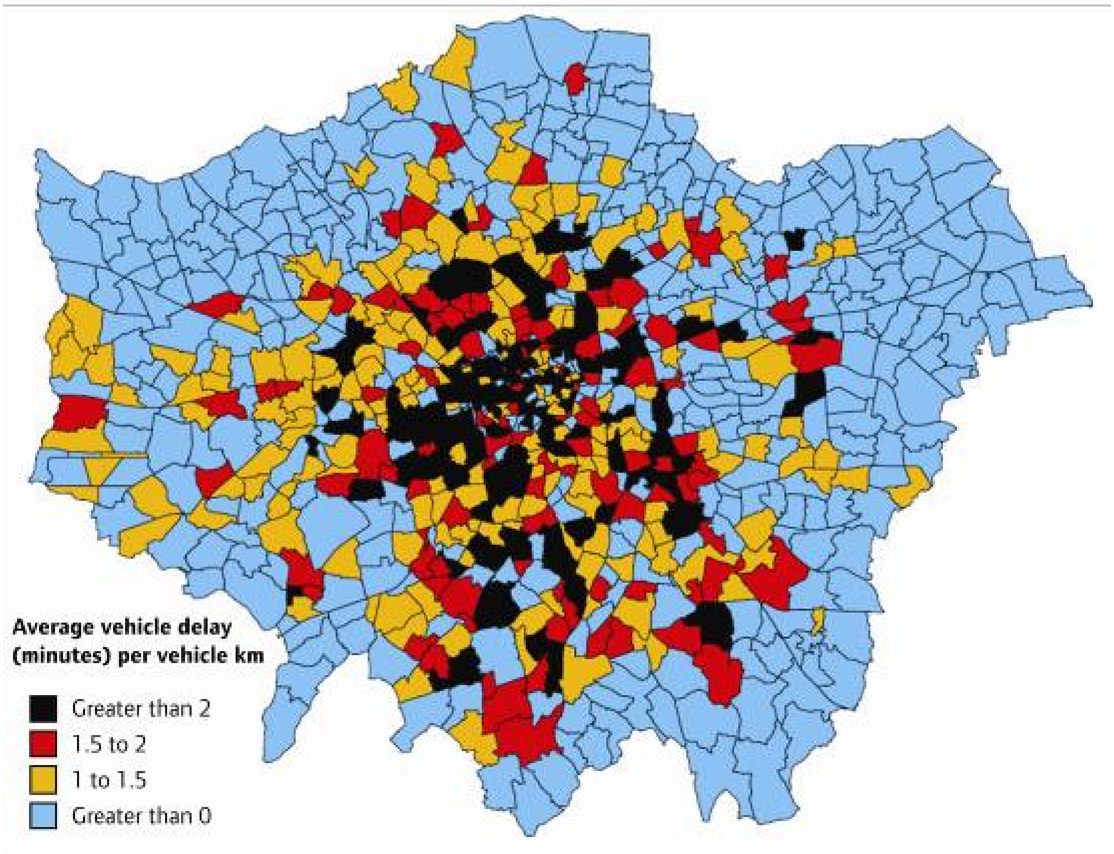
Source: MTS

Figure 2: Rail crowding, 2031



Source: MTS

Figure 3: Highway congestion, average vehicle delay, 2031



Source: MTS

c) Transport infrastructure provision

3.26 Table 6.1 of the London Plan[17] gives an indicative list of transport schemes that are needed to support projected growth whilst meeting the Mayor's wider environmental, safety, quality of life and accessibility objectives. Each scheme includes categories for costs ('high' category for schemes over £1 bn, medium for schemes between £100m and £1bn and low for schemes under £100m) and phasing (short term, before 2012, medium term, between 2013 and 2020 and longer term, beyond 2020 to 2031).

3.27 The indicative list of schemes includes those that have funding committed in the TfL Business Plan and NR HLOS. These schemes include Crossrail and Thameslink upgrade (both due for completion 2018-19) and the LU line upgrades. These form the bulk of the MTS 'reference case' and will provide a substantial increase in rail capacity that is essential to accommodate short to medium term growth in London.

3.28 Additional investment over and above committed schemes will be required. Key schemes in the medium-longer term include delivering a new north east to south west rail link, also known as Crossrail 2, along an alignment similar to the safeguarded Chelsea-Hackney line route, four tracking of the Lee Valley mainline, further train capacity increases on key NR routes, development of key Strategic Interchanges, extensions to the Bakerloo and Northern lines, potential extensions to the DLR and Tramlink networks, enhanced river crossings in east London and continuation of measures to better manage the road

[17] Alongside Mayor's Transport Strategy, 2010, figure 86

network, electric vehicle infrastructure provision, better streets, cycling and smarter travel programmes. The prioritisation of key schemes and programmes for the longer term will be subject to planning processes and investigations of funding mechanisms and will be reflected in future updates of this Implementation Plan.

3.29 A new high speed line between London and major cities in the Midlands and the North (HS2) is currently planned to be open fully in the early 2030s; meeting increasing passenger demand to and from its London terminus and any intermediate stations is a challenge which will need to be met by provision of more public transport capacity.

3.30 TfL is also beginning a major upgrade of London's roads which will start by targeting congestion black-spots and improving safety for all road users.

3.31 Sub-regional transport plans provide a forum for discussing sub-regional transport challenges and requirements. They are updated regularly. As an example the following list sets out transport requirements of particular importance to the East and South East London:

- Maximising the benefits of Crossrail including improving interchanges and access modes, e.g. to opportunity areas, as well as consideration of different options for Crossrail 2
- Stratford International – interchange between European and domestic services. As the plans for HS2 progress, the proposed HS2-HS1 connection should be designed to facilitate orbital high speed services allowing connections between Stratford and Old Oak Common, as well as the regions
- Potential enhancements to the DLR network
- Additional river crossings in East London, to both enhance capacity and improve connectivity

Requirements of importance to other parts of London are set out in the relevant sub-regional transport plans.

3.32 Another aspect of London's transport infrastructure is its accessibility: Currently, approximately 40% of rail stations (including all Tram stops and DLR stations) within Greater London offer step-free access between street and platform. A number of major improvements such as step-free access to platforms at Green Park, Clapham Junction and Kings Cross St. Pancras stations have been completed recently. Approximately a further 50 stations have funding committed for provision of step-free access, including 10 announced in December 2011 through the Access for All programme[18].

d) Transport infrastructure funding and delivery

3.33 The 2010 Spending Review settlement for TfL and Network Rail allows for completion of essential short and medium term schemes such as Crossrail, Tube upgrades and Thameslink upgrade. This level of investment is approximately £4.8 billion per year to 2018. A package of all currently proposed schemes beyond this would require continuing annual investment of around £ 3.5bn to £ 4.5bn [19]in the period to 2031.[20]

3.34 Inevitably, there is uncertainty over funding availability in the medium to long term. Future levels of Government grant will be dependent on the wider economic and political environment. Other main sources of funding, from fares revenue and borrowing are also influenced by wider economic factors. TfL's latest draft Business Plan for the period until 2020

[18] Further details are available in TfL, Taking forward the Mayor's Transport Strategy Accessibility Implementation Plan, published March 2012, and the MTS, including Figure 87 (Accessibility Implementation Plan)

[19] Further analysis is underway to determine precisely the scale of investment required.

[20] Mayor of London, Mayor's Transport Strategy, 2010, p 315

continues to address the key challenges facing London's transport. TfL will continue to work with the Department for Transport and HM Treasury to making the case for continued long-term investment in London's transport network to drive UK economic growth and secure the best possible progress towards the outcomes set out in the MTS. The next Spending Review is due in 2014.

3.35 The Chancellor's Autumn Statement 2012 includes the news that Government has agreed a loan of up to £1bn that will allow the construction of an extension of the Northern Line to the Battersea Power Station site. Extending the Northern Line is key to kick starting regeneration of the Nine Elms area of south London, which offers the significant potential for new growth and development. It has also been confirmed that the Government will work with the Mayor's Office and the London boroughs of Lambeth and Wandsworth to create a zone in which the expected uplift in business rates, alongside developer contributions, will enable the GLA to repay the Government loan that funds the northern line extension.

3.36 Authorities are considering the use of innovative funding mechanisms for major transport projects. As indicated in London Plan Policy 6.5, the Mayor has brought forward a charging schedule in accordance with the Community Infrastructure Levy (CIL) Regulations 2010 to enable him to use the CIL to fund strategically important infrastructure - initially for Crossrail. He started charging CIL in April 2012.

WATER

3.37 The information for water supply, wastewater treatment and flood risk management infrastructure is based on key documents produced by the water companies that serve London and the Environment Agency. Specific sources of information are referenced below.

WATER SUPPLY

a) Strategic water supply infrastructure

3.38 The majority of London's public water supply is abstracted from the rivers Thames and Lee and is stored in reservoirs located in west London and the Lee Valley. The rest of London's water is supplied from groundwater sources. Thames Water's desalination plant at Beckton in East London can provide additional water supply to around one million people per day in times of drought. Thames Water supplies approximately 75 per cent of London's water. The other water companies that supply London include Sutton and East Surrey Water, Affinity Water and Essex and Suffolk Water. The water companies have a statutory duty to develop and maintain efficient and economical water supply systems. They are responsible for managing the water supply network including the reservoirs, boreholes, pipes and water treatment works which make up London's water supply infrastructure.

b) Water supply infrastructure need

3.39 We are facing increasing pressure on water resources. London and the South East have been classified as areas under serious water stress[21]. High

[21] Environment Agency, Water for people and the environment - water resources strategy for England and Wales, 2009: http://publications.environment-agency.gov.uk/PDF/GEHO0309BPKX-E-E.pdf. Note: an update to the water stress methodology was under consultation at the time of writing.

population density combined with limited resources means that we need to carefully manage and plan the water resources in London. Water demand in London is higher than the average for England and Wales. During 2011/12 each Londoner used on average of 164 litres of water a day compared to the average of 145 litres per person per day for England and Wales.

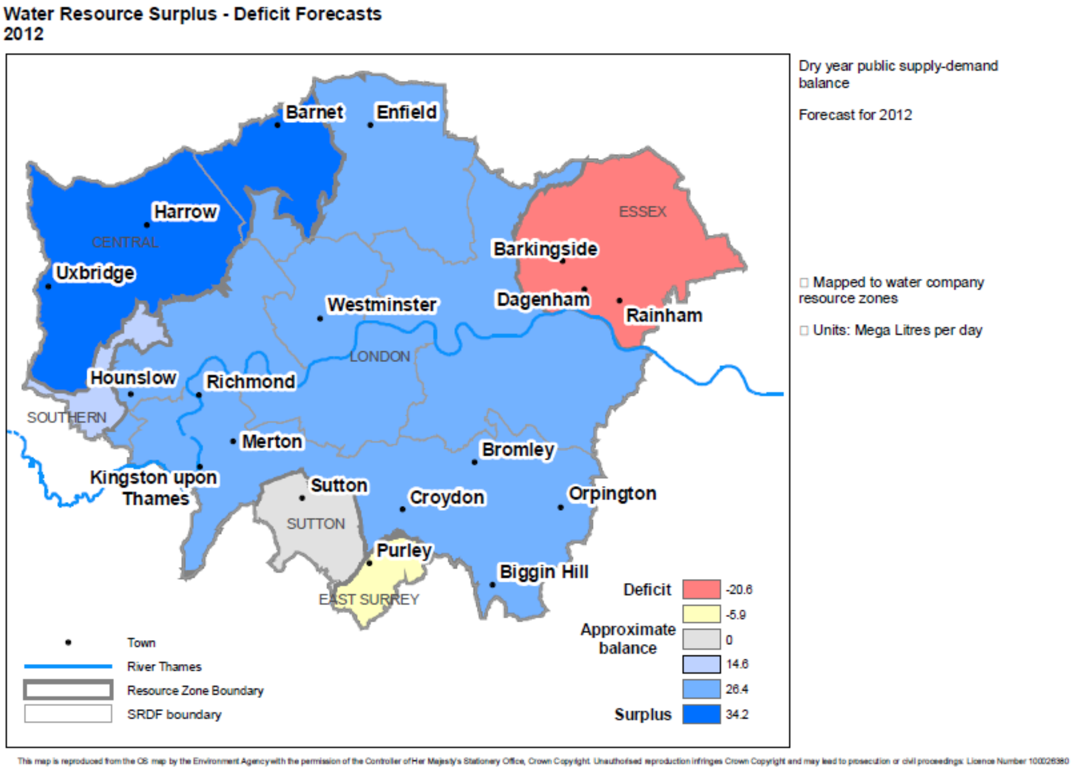
3.40 Due to climate change and requirements from legislation such as the Water Framework Directive there is currently some uncertainty over the amount of water that will be available to supply London in the future. Where water abstraction may be causing environmental damage it may be necessary to reduce or revoke a water abstraction licence to protect the environment. These cases are known as sustainability reductions. Where investigations have shown sustainability reductions to be likely, the Environment Agency has informed the water companies and these reductions have been included in the draft Water Resources Management Plans (WRMPs) for the period 2015-2040 which are under development.

3.41 Water companies have a duty to maintain a secure water supply. Every five years water companies produce WRMPs which set out the current water supply-demand balance and proposed measures to address any supply demand deficit. These measures include specific resource development schemes and demand management actions. The WRMPs use population projections to make sure that future proposed growth in London is planned for. These plans are needed because if no action was taken to either increase supply or manage demand, the water companies supplying London would need to manage a potential cumulative deficit of around 270 mega litres a day by 2031[23]. This compares to an anticipated demand of around 2500 mega litres a day before any demand and leakage savings that companies are able to make. The anticipated deficit figure includes definite and likely sustainability reductions, but reductions that are yet unknown are not included and could substantially add to this figure..

3.42 Figure 4 shows the supply-demand balance in 2012 based on the current WRMPs (2010-2035). Currently there is a small deficit in Sutton and East Surrey's East Surrey Water Resource Zone (WRZ) and a larger deficit in the Essex WRZ of Essex and Suffolk Water. This means that customers face a greater chance of water restrictions in a dry year.

[23] Calculated from indicative Statements of Need published on water company websites in advance of consultation on new draft Water Resource Management Plans (WRMPs) in early 2013.

Figure 4: Water resources surplus – deficit forecasts



Source: Environment Agency

c) Water supply infrastructure provision

3.43 The Government has an aspiration to reduce water consumption to 130 l/h/d by 2030 for existing homes.. To achieve a significant change in demand for water will require a change in people's behaviour and involvement of multiple stakeholders. Water efficient new homes will drive down consumption, as will metering of existing homes and retrofitting of water efficient devices, for example, through the RE:NEW programme.

3.44 Thames Water's preferred programme of options to ensure security of supply in London includes a variety of both demand management and supply schemes (see Table 3).

3.45 Sutton and East Surrey Water is planning improvements to its Bough Beech Reservoir which, although located outside London, supports south London's water supply needs in a dry year. The company is set to increase the capacity of the reservoir's treatment works at peak periods, by 5 Ml/d in 2012-13 and by a further 20 Ml/d in 2017-18 (reflected in Figure 5). Further detail about the company's preferred programme for London can be found in Sutton and East Surrey Water's final WRMP.[22]

[22] Sutton and East Surrey Water's final WRMP 2010: http://www.waterplc.com/userfiles/file/Final_WRMP.pdf

Table 3: Thames Water's programme for London (2010 to 2035)

Programme	Short term (2010-2015)	Medium term (2015-2020)	Long term (2020-2035)
Leakage reduction[23]	1,000km of mains replacement Pressure management Network reconfiguration Active leakage control	2,000km of mains replacement Pressure management Network reconfiguration Active leakage control	
Metering[5]	Compulsory targeted metering to achieve 40% meter penetration	Compulsory targeted metering to achieve 60% meter penetration	Compulsory targeted metering to achieve 77% meter penetration by 2025 for the London Resource Zone
Water efficiency	Enhanced water efficiency programme	Enhanced water efficiency programme	Enhanced water efficiency programme.
Resource development			Artificial Recharge, Kidbrooke (2020/21) and South London (SLARS) (2026/27) Aquifer Storage and Recovery, South East London (2021/22) and Darent Valley (2022 to 2026) East Croydon and Southwark groundwater resources (2028/29) Hogsmill STW reuse (2029/30 Deephams STW reuse (2031/32)

Source: Thames Water, final WRMP(2010 – 2035)

[23] The AMP5 leakage reduction and metering programmes listed above are currently proceeding at a reduced rate as they have not to date received funding from OFWAT.

3.47 Essex and Suffolk Water's Essex WRZ supplies water to north east London including Dagenham, this zone is currently in deficit. The company is currently addressing this through the Abberton scheme, which is due for completion in 2013 (the additional resources provided will result in a surplus to 2026 and beyond, as shown in Figure 5). An overview of the preferred programme is provided as Table 4.

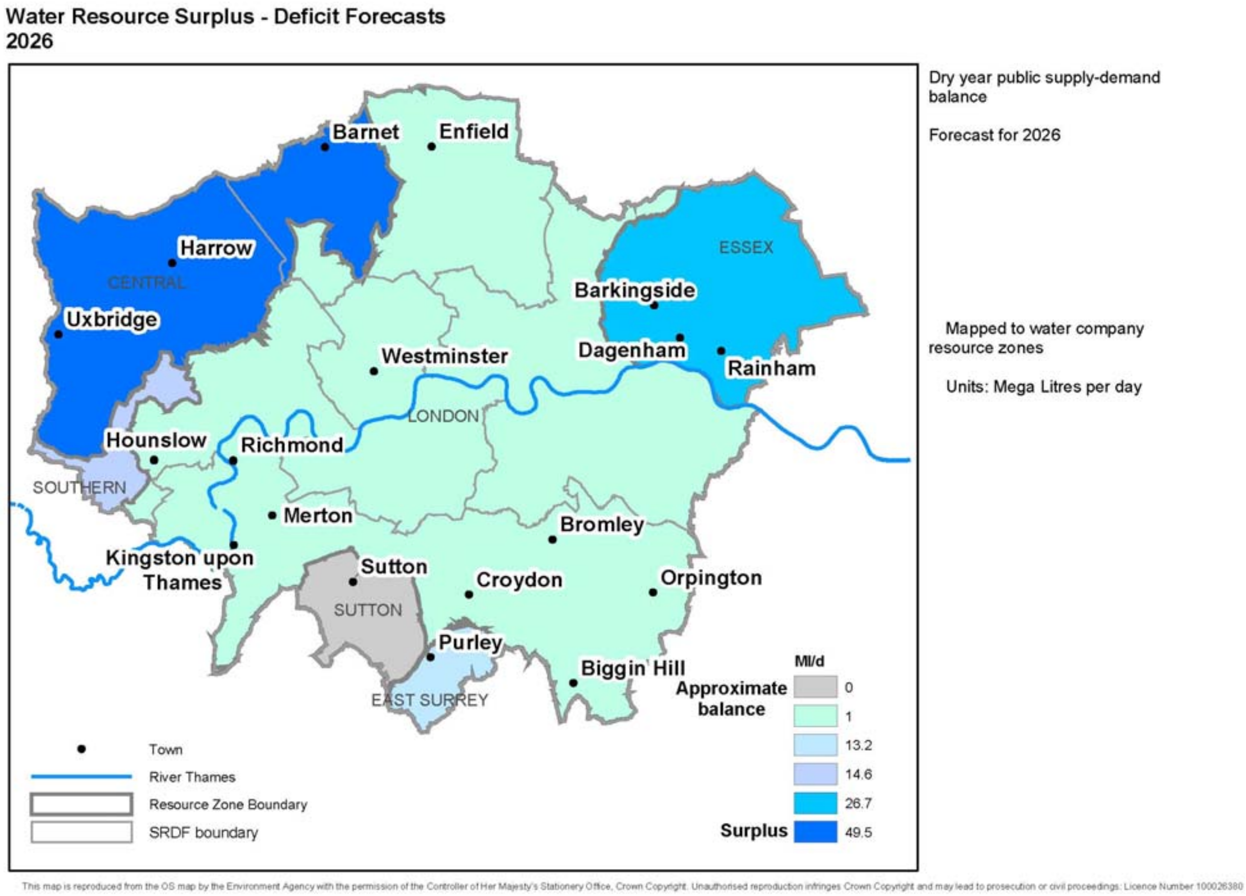
Table 4: Essex and Suffolk Water's preferred programme for London (2010 to 2035)

Programme	Short term (2010-2015)	Medium term (2015-2020)	Long term (2020-2035)
Essex and Suffolk Water (Essex WRZ)			
Leakage reduction	200km of mains replacement. Replacement of 2,000 common supply pipes in Dagenham Pressure management Active leakage control	200km of mains replacement Replacement of 2,000 common supply pipes in Dagenham Pressure management Active leakage control	
Metering	Change of occupier metering to achieve 60% meter penetration	Compulsory metering to achieve 81% meter penetration for 2020 and 89% for 2025)	
Water efficiency	Enhanced water efficiency programme	Enhanced water efficiency programme	Enhanced water efficiency programme.
Resource development	Abberton Scheme, increases water available by 64Ml/d.	None needed	Possible need for new water resource.

Source: Essex and Suffolk Water, Final WRMP

3.48 Figure 5 below shows the supply-demand balance in 2026, which takes into account population growth projections and the options water companies plan to manage supply and demand highlighted above.

Figure 5: Water resources surplus – deficit forecasts



Source: Environment Agency

d) Water supply infrastructure funding and delivery

3.49 In parallel with their WRMPs, water companies are required to produce business plans that set out how they will fund the first five years of their plan. The funding for investment in water supply infrastructure is raised through charges to water company customers. The price that the companies can charge is regulated by the Water Services Regulation Authority (Ofwat) through the five-yearly business planning process[24].

WASTEWATER TREATMENT

a) Strategic wastewater infrastructure

3.50 Thames Water is the sole sewerage undertaker for London. It is responsible for managing the sewage treatment works (STW) and the sewerage network e.g. the pipes and pumping stations which make up London's wastewater infrastructure. Much of central London has a combined drainage system, which carries both surface and wastewater. London's sewage is treated at eight major STW - Beckton, Crossness, Mogden, Riverside and Long Reach that discharge effluent to the tidal River Thames and Hogsmill, Beddington and Deephams that discharge into freshwater tributaries of the Thames.

[24] Thames Water's Investment programme from 2010-2015 http://www.thameswater.co.uk/cps/rde/xbcr/corp/our-plans-for-2010-2015.pdf

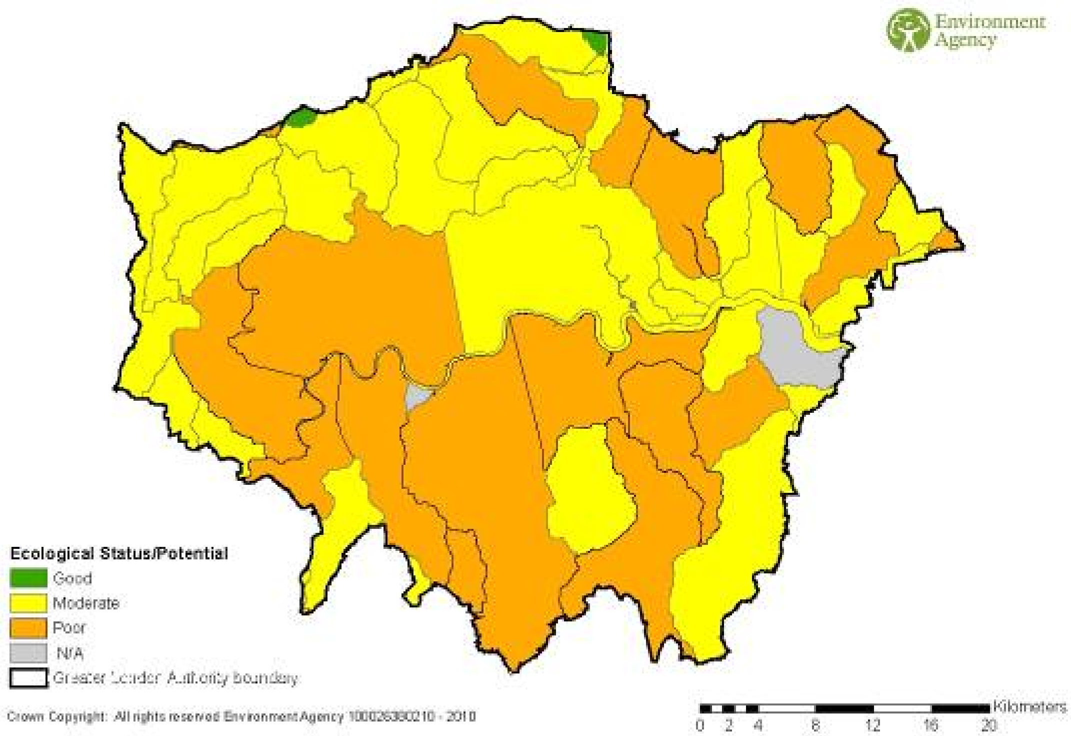
b) Wastewater infrastructure need

3.51 Wastewater infrastructure is essential to sustain urban life. The Urban Waste Water Treatment Directive (UWWTD) requires that urban waste water should be properly collected and treated. In October 2012, a European Court of Justice judgement ruled in favour of the European Commission in a case brought against the UK Government that London's combined drainage system does not meet the obligations under this Directive. In some locations, as little as 2mm of rainfall can result in discharges of storm sewage to the Thames Tideway, with discharges occurring 50-60 times in a typical year. It is estimated that 39 million cubic metres of storm sewage is discharged to the river in a typical year, from the combined sewer overflows (CSOs) and the tideway sewage treatment works (STW). This could rise to 70 cubic metres per year by 2020 unless significant improvements are implemented[25], but by 2015 this figure should reduce to some 18 million cubic metres due to the construction of the Lee Tunnel. These discharges can have a significant adverse effect on dissolved oxygen levels, the ecology of the river and may impact on the health of river users[26]. The need for strategic wastewater infrastructure to address these issues – in combination with the promotion of sustainable drainage (see also paragraph 3.67) is given in Thames Water's 'Thames Tunnel Needs Report'[27] and the 'Thames Tideway Strategic Study'[28]. On a more local scale if sewers are not maintained and upgraded to support growth this can result in CSOs operating in a way that causes environmental harm and an increase in the frequency of pollution incidents.

3.52 The quality of London's water bodies must be improved if they are to meet the requirements of the European Water Framework Directive (WFD). None of London's rivers are currently meeting good ecological status (see Figure 6). It is essential that strategic wastewater infrastructure is planned and provided in a timely way to support existing and new development to maintain and improve water quality in London. There can be severe consequences for the health of the aquatic environments upon which we depend for safe drinking water, recreation, and wildlife if wastewater infrastructure provision does not keep pace with development. The Environment Agency's 'London Environmental Infrastructure Needs: A Strategic Study' (LEINS), gives further evidence on the need for planning of strategic wastewater infrastructure.

[25] http://www.thameswater.co.uk/cps/rde/xbcr/corp/london-tideway-improvements-the-case-for-the-thames-tunnel.pdf
[26] Environment Agency, State of the Environment for London Report, June 2011: http://data.london.gov.uk/documents/SOE-2011-report.pdf
[27] http://files.thamestunnelconsultation.co.uk/files/thamestunnel/1-100-RG-PNC-00000-900007%20Needs%20Report.pdf
[28] http://www.thamestunnelconsultation.co.uk/consultation-documents.aspx

Figure 6: Ecological status/potential of river water bodies in Greater London under WFD



Source: Environment Agency

b) Wastewater infrastructure provision

3.53 The London Tideway Improvement Programme will help address the issues highlighted above and consists of three components:

- Upgrades and/or capacity extensions to Crossness, Beckton, Mogden, Long Reach and Riverside STW. These upgrades, which are currently under construction, will improve the quality of the effluent and increase the amount of sewage the sites can treat, so reducing the frequency and size of storm discharges to the river. The upgrades are due to be completed in 2014 and should largely accommodate population growth until 2021;
- The Lee Tunnel, which together with the extensions to the Beckton STW, will largely eliminate the overflows from the Abbey Mills pumping station, which is currently the largest single source of storm sewage to the river. This too is under construction and is expected to be completed in 2015;
- The Thames Tideway Tunnel has been the subject of extensive consultation and engagement and development consent will be sought early in 2013. The Environment Agency evaluated 57 CSOs and identified 36 of these as unsatisfactory, of which 34 require control through the Thames Tideway Tunnel project. Of the remaining two CSOs, one is being controlled by the Lee Tunnel, and one by a separate project at Wick Lane. It should be completed by 2023 and will help to ensure that the Beckton and Crossness sewerage systems can provide flexibility and capacity for London's growing population.

3.54 As part of its Business Plan for 2010-2015 (AMP5) Thames Water is developing and implementing a proposal for a major upgrade of Deephams STW to provide sufficient capacity to accommodate growth up to 2026. This project will not be completed until the 2015-2020 period (AMP6). The Deephams STW upgrade as well as the Thames Tideway Tunnel are specifically referred to in the National Planning Statement on Waste Water, which was published in March 2012.

3.55 To support the proposed housing growth in London beyond 2021, Thames Water may have to increase its overall sewage treatment capacity to cope with an increased population of around 740,000 by 2031[29]. Some of London's smaller treatment works, away from the Thames Tideway, may require some extra capacity before 2021. Future provision after 2021 will be identified and planned for by Thames Water through their future business plans.

c) Wastewater infrastructure funding and delivery

3.56 The funding for investment in wastewater infrastructure is raised through charges to water company customers. Thames Water will seek approval from the Water Services Regulation Authority (OFWAT) to invest in strategic growth schemes through the five-yearly periodic review of water company prices[30]. The next periodic review will be in 2014. Under recent changes to the periodic review process, water companies have established new Customer Challenge Groups (CCG), which are consulted on business plan options. In the period 2010-2015, Thames Water expects to invest some £1.3 billion to upgrade five of London's sewage treatment works and to construct the Lee Tunnel. The cost of the Thames Tideway Tunnel is currently expected to be £4.1 billion, but the precise figure depends on a number of external factors. The upgrade to Deephams STW is expected to cost several hundred million pounds. There may also need to be additional investment in local sewers and sewage treatment works to accommodate growth up to 2031. The Environment Agency's London Environmental Infrastructure Needs: A Strategic Study' (LEINS) report estimated that an additional £335 million may need to be invested in London's sewage treatment works over this period to prevent deterioration in water status and that further investment will be needed to improve London's water quality.

3.57 In reality, the cost of managing water quality is expected to be even higher, as there are other costs that are not included in the above figures. The additional costs may include future investment driven by measures in the Thames River Basin Management Plan, sewer network improvements, sewer flood alleviation schemes, sewage treatment work expansions to cope with greater effluent volume and improvements to sewage sludge disposal.

FLOOD RISK MANAGEMENT INFRASTRUCTURE

a) Strategic flood risk management infrastructure

3.58 London is at risk from flooding from a number of sources including tidal, fluvial, groundwater, surface water and sewer flooding. The Environment Agency has a strategic overview role for all forms of flooding, and an operational role to manage flood risk from rivers and the sea[31]. Lead Local Flood Authorities lead on the local

[29] Environment Agency, London Environmental Infrastructure Needs: A Strategic Study (LEINS), 2010.
[30] Thames Water's Investment programme from 2010-2015
http://www.thameswater.co.uk/cps/rde/xbcr/corp/our-plans-for-2010-2015.pdf

[31] Flood and Water Management Act 2010
http://www.legislation.gov.uk/ukpga/2010/29/contents

management of flooding from surface water, ordinary watercourses and groundwater. In London this role falls to the London boroughs.

3.59 The Environment Agency has published the Thames Catchment Flood Management Plan (CFMP)[32], which sets out options for flood risk management within the non-tidal Thames catchment. The final flood risk management plan for the Thames Estuary, TE2100[33] was published in November 2012 following Government approval. The London boroughs are working together on the Drain London Forum to carry out their new role in understanding and managing flood risk from surface water, ordinary watercourses and groundwater. Each borough now has a Preliminary Flood Risk Assessment, a Strategic Flood Risk Assessment and a Surface Water Management Plan.

3.60 The Regional Flood Risk Appraisal[34] shows major development areas at risk and illustrates how a wide range of important utilities/services are affected by flood risk. It will be important to ensure that flood risk is suitably managed for assets so that services will continue to be provided under flood conditions. Its recommendations reflect some necessary prioritisation of actions.

b) Flood risk management infrastructure need

3.61 There are approximately 536,000 properties in areas at risk of flooding from rivers and the sea in London. Of these 30,000 (6%) are in areas with a significant risk of flooding35, while 87% are in areas with a low likelihood of flooding due to the presence flood defences (Figure 7), such as the Thames Barrier. Many homes and businesses that would otherwise be at risk of flooding benefit from these defences. The probability of flooding is expected to increase into the future due to climate change, with potentially high consequences for undefended areas of the city.

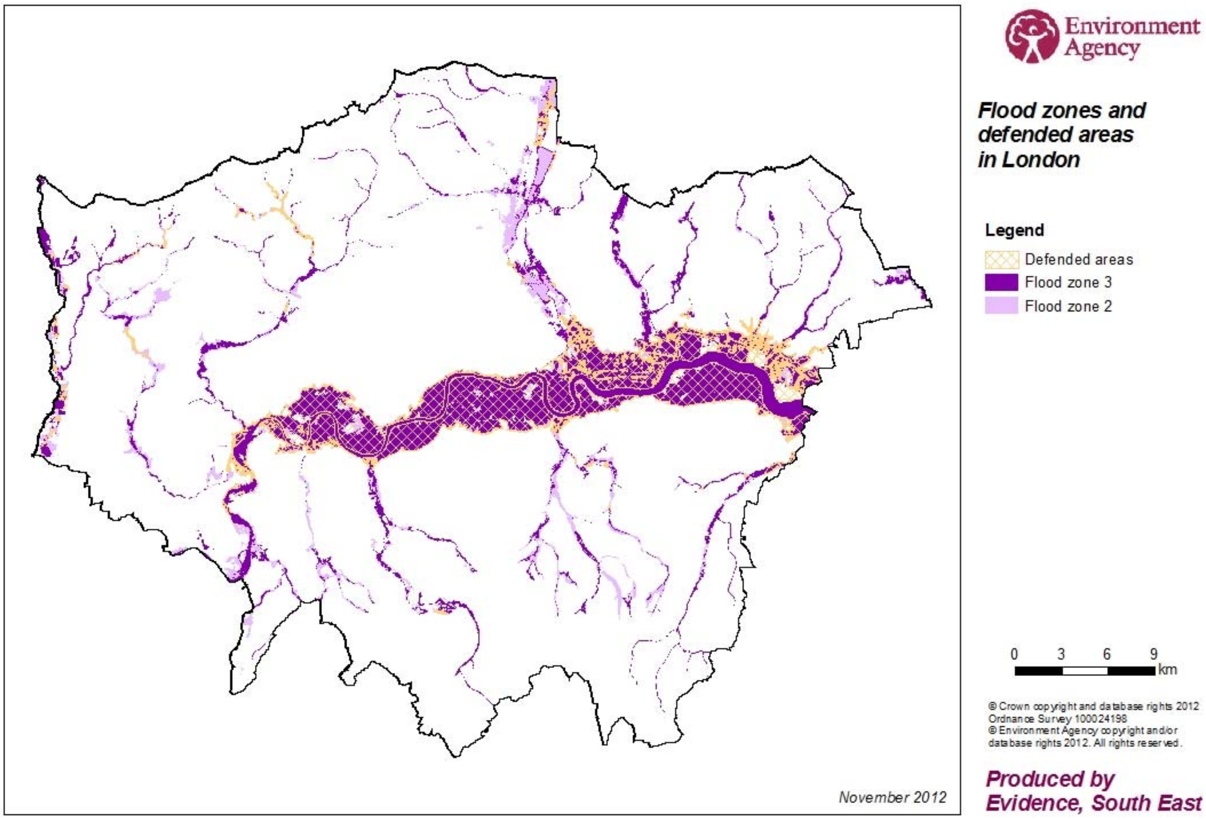
3.62 London's greatest risk of flooding comes from the River Thames. Much of London's flood management efforts and resources are allocated to protecting the city from tidal flooding. As a result, London benefits from a very high degree of protection against tidal flooding i.e. it has less than a 0.1 per cent chance of tidal flooding in any given year.

3.63 The Thames Barrier forms part of the tidal defences in London. It has been raised over 100 times since it became operational in 1982. Just over two thirds of these have been since 2000. Climate change is altering the nature of our weather. This means that the number of times the Thames Barrier is raised, to protect London from high tides and storm surges in the Thames Estuary and high river flows from the tributaries, will increase as sea levels rise and the intensity and frequency of storms increase.

3.64 In terms of fluvial flooding, none of the River Thames tributaries enjoy the same high level of protection and some are completely undefended. The Thames Catchment Flood Risk Management Plan (CFMP) sets out short, medium and long term strategies and actions required to manage flood risk on fluvial rivers in London.

[32] Thames CFMP http://www.environment-agency.gov.uk/research/planning/127387.aspx
[33] TE2100 consultation http://www.environment-agency.gov.uk/research/library/consultations/106100.aspx
[34] http://static.london.gov.uk/mayor/strategies/sds/docs/regional-flood-risk09.pdf
[35] Defined as having a greater than 1 in 75 chance of flooding each year by the National Flood Risk Assessment (NaFRA).

Figure 7: The occurrence of Flood Zones across Greater London (areas benefiting from flood defences are also shown)



Source: Environment Agency

3.65 We have a good understanding of flooding from rivers and tidal sources. With the production of the Surface Water Management Plans for each borough, surface water and groundwater flooding is becoming better understood. Boroughs are now starting to investigate the higher risk areas identified in the Surface Water Management Plans. The Drain London project is continuing to support boroughs in this role. The Surface Water Management Plans will represent key evidence for Local Flood Risk Management Strategies which London Boroughs have a duty to produce under the Flood and Water Management Act 2010. Drain London is currently implementing a £1.5 million programme of demonstration and investigation projects including Community Flood Plans, green roofs, flood storage and drainage measures to mitigate surface water flood risk.

c) Flood risk management infrastructure provision

3.66 The most sustainable way of managing fluvial and tidal flood risk, particularly for new development, is to locate it in areas of lowest flood risk. However, where this is not possible other ways to protect people and property from flooding need to be found.

3.67 Technical and economic constraints to further reductions in flood risk in London, as well as changes to funding mechanisms and flood risk management practices mean reliance on “hard” flood defences may not be viable in the future, meaning that flood risk improvements may need to be achieved through other means. In addition, the amount of development along the edge of watercourses means that options for structural solutions are limited in large parts of London.

3.68 The Thames CFMP identifies redevelopment as a key mechanism for managing flood risk in London. Many sites currently at risk of flooding will be redeveloped. Improving the layout and design of these redeveloped sites provides a crucial opportunity to keep people safe and reduce flood risk to surrounding communities.

3.69 The Thames Estuary 2100 (TE2100)[36] plan sets out actions for ensuring that London remains protected from tidal flooding for the next century. Within the period covered by the London Plan, actions focus on the maintenance of and improvements to the tidal defence network. The TE2100 plan shows that the Thames Barrier will continue to provide a high level of protection until around 2070.

3.70 The Environment Agency's Programme for Flood and Coastal Risk Management Schemes sets out the expected work programme to 2015/16. However, only works for this financial year have been confirmed. For 2013/14, projects within London include major works within the Thames Estuary and works on the Salmons Brook which are expected to benefit nearly 4,000 properties.

d) Flood risk management infrastructure funding and delivery

3.71 The Environment Agency anticipates committing £25m of spend on maintaining and replacing the tidal defences along the Thames Estuary within the next financial year 2013/14, with spend over the next five years expected to reach £40m[37]. Overall spend on Environment Agency flood risk management schemes in London is expected to reach £14m this financial year, with the majority of spend on the Thames Estuary. In addition, £3m of local levy funding has been confirmed for projects in London for this financial year. Over the next ten years, the Environment Agency expects to spend about £300 million on maintaining and replacing the tidal defences along the Thames Estuary.

3.72 In May 2011, the Department for the Environment Food and Rural Affairs (Defra) announced a new approach to funding flood risk management called 'Flood and Coastal Resilience Partnership Funding'. The new approach has allowed a wider range of schemes to be eligible for part funding from central government, with more funding in the form of contributions from beneficiaries e.g. communities and developers. There is also a greater emphasis on funding for flood risk management schemes where the benefits are wider than flood risk management, including improvements in deprived areas and biodiversity benefits. It is likely that most tidal schemes in central London currently proposed by the Environment Agency will qualify for full flood defence grant in aid. However, smaller schemes, including community-led initiatives and measures proposed to address surface water flood risk, may require more of a split between flood defence grant in aid and other funding.

[36] http://environment-agency.gov.uk/research/library/consultations/106100.aspx

[37] Environment Agency's Programme for Flood and Coastal Risk Management Schemes (South East) http://www.environment-agency.gov.uk/research/planning/118129.aspx

ENERGY

3.73 Information for energy infrastructure is initially largely based on initial engagement with key energy companies (UK Power Networks (UKPN) and National Grid). In addition, the Mayor's Climate Change Mitigation and Energy Strategy (Delivering London's Energy Future), which commits London to providing 25 % of its energy need through decentralised energy sources by 2025, signals a shift in the traditional provision and consumption patterns.

a) Strategic energy infrastructure

3.74 This includes both the distribution networks and the transmission infrastructure between the energy generation and the Distribution Network Operators (DNOs) (in London: UKPN and Scottish & Southern Energy Power Distribution (SSEPD) for electricity and National Grid Gas and Southern Gas Networks[38] for gas). Figure 8 provides a wider overview of the companies/organisations currently involved in the energy market.

3.75 For electricity National Grid owns and operates the high-voltage[39] electricity transmission system in England and Wales. Key transmission infrastructure includes the high-voltage power lines/cables (which are either installed as overhead lines, in the ground with other utilities or in deep tunnels constructed specifically for that purpose) and the substations that reduce the voltage for further distribution by the DNOs. The DNOs develop and maintain their network of cables and substations at voltages from 132 kV to 230 volts including the connections to the end users.

3.76 For gas National Grid owns and operates the high-pressure National Transmission System (NTS), which transports gas from terminals to Local Distribution Zones (LDZ), including those supplying London, which generally operate at lower pressure and to which the majority of consumers are connected[40]. Other key infrastructure includes the local transmission network and low pressure gasholders.

3.77 In terms of energy generation there are some power stations in London, which are directly connected to National Grid's high-voltage transmission network. At present National Grid is not aware of any proposals to construct any additional direct connection power stations in London. However, in the light of CO2 reduction targets and a range of challenges and uncertainty surrounding the UK's electricity supply, decentralised energy opportunities, feeding into the DNO's lower-voltage networks such as large-scale heat networks, Combined Heat and Power (CHP) plants and microgeneration such as photovoltaics on individual buildings are rapidly gaining importance[41], as well as energy from waste plants. The Mayor's Climate Change and Energy Strategy and the London Decentralised Energy Capacity Study sets out how decentralised energy can and will be delivered across London.

b) Energy infrastructure need

3.78 The London Energy and Greenhouse Gas Inventory (LEGGI) provides data for greenhouse gas emissions and energy consumption for London. According to LEGGI greenhouse gas emissions generally increased during the 1990s followed by a stabilisation with significant drops in 2004 and 2008. Into the future the Mayor supports a reduction in energy demand through a range of energy efficiency initiatives including retrofitting and a decentralised energy programme.[42]

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[38] South of the River Thames excluding the Battersea to Lambeth area.
[39] Upgrade to 400 kV currently underway.
[40] The majority of customers are supplied from a below 7 bar distribution network.
[41] Mayor of London, Delivering London's Energy Future, October 2011, p. 78-81
[42] Mayor of London, Delivering London's Energy Future, October 2011

Figure 8: The energy market

	Companies/Stakeholders
Energy generation **Electricity**:natural gas, coal, nuclear, renewables plus decentralised generation (e.g. CHPs) **Gas**: production shipment decentralised production	EDF, E:ON, Centrica, Scottish & Southern Energy, Scottish Power, Npower, GDF Suez, and others BP, Exon, NPower, EDF, others
Energy transmission maintenance of gas and electricity networks from generation to local distribution networks **Electricity** **Gas**	National Grid (England and Wales) National Grid (England, Wales, Scotland)
Energy distribution in London **Electricity**: own/maintain local networks from transmission network to end user **Gas**: own/maintain local networks from transmission network to end use	UK Power Networks (majority of London) Scottish & Southern Energy (West London) National Grid (North London), Southern Gas Distribution (South London)
Energy suppliers sell energy to end user	EDF, E:ON, Npower, British Gas, Scottish Power, Scottish & Southern Energy ('big six') and others
Energy customer buy energy from supplier	Consumers
Energy regulator price control for transmission and distribution	OFGEM

Source: GLA

3.79 However, electricity demand is – after a temporary decrease during the economic downturn - forecast to return to a long-run average increase of 1 to 4 % per year[43] in the medium term, and with sustained levels of population and business growth the spare electricity capacity in London's 11 kV network is significantly diminishing. In particular in Central London and in Opportunity Areas such as Vauxhall, Nine Elms, Battersea (VNEB), developers and businesses are concerned about electricity infrastructure provision, and some development is at least held up by negotiations to agree necessary reinforcements to the distribution network. In the City, there has also been a significant increase in demand for capacities exceeding 5 MW to meet a particularly high IT use, and UK Power Networks are constructing a new 33 kV distribution network to meet these demands. It is expected that through engagement with National Grid, UKPN and SSEPD a comprehensive and spatial overview of areas with potential future capacity shortfalls (if no new substations are provided) is included in the next version of this document.

3.80 Gas is currently the most significant source of energy in the UK; excluding the transport sector it provides the majority of the energy used in London, directly or by fuelling electricity generators. National Grid's 2011 gas consumption forecast indicates that total annual gas demand will decrease by 7.6 % by 2020, with gas usage in North London expected to drop from 57 TWh in 2011 to 53 TWh by 2020. A number of factors are contributing to this decline including the anticipated state of the economy, affordability and increased utilisation efficiency and new technologies such as Smart Metering. Peak day demand is expected to remain relatively stable or experience a modest reduction, as this is less influenced by the above factors, particularly during periods of severely cold weather[44].

3.81 National Grid and Southern Gas also facilitate the increasing entry of renewable gas into the grid. Renewable gas is expected to become more important in the future and is a way of de-carbonising the gas grid. The Government is introducing a Renewable Heat Incentive that is intended to assist in the development of the renewable gas industry. As a result of the predicted stabilisation in peak day demand no major 'general' reinforcement works are currently expected within the LDZ. However, local reinforcement may be required as part of future mains replacement strategies and to provide gas to new developments such as Opportunity Areas, for example to serve their energy centres and associated gas-fired CHPs.

3.82 Much of National Grids North London's old metallic gas mains have now been replaced, with over 60% of all mains in the city now polyethylene. Although the current replacement programme is currently under review with the HSE, replacement of the old metallic mains will continue, In Outer London the focus will be on replacing significant lengths of smaller low pressure pipes however the city centre has a high proportion of very large diameter old Victorian medium pressure mains and any future replacement of these will require careful planning and close engagement with other service providers and stakeholders to ensure opportunities and synergies are fully explored.

3.83 There are around a dozen active low-pressure gasholder sites in London. It is likely that all of these will be decommissioned during this decade resulting in brownfield land being released for development. The Mayor is considering the preparation of planning guidance for hazardous installations in 2013 that will also cover gas holders.

[43] Increase in electrical appliances in households/businesses, also potential increasing need for cooling in summer due to climate change

[44] National Grid, UK Future Energy Scenarios, 2011

3.84 An additional national challenge from the Transmission and Distribution Companies' perspective will be the less predictable and less controllable nature of some of the renewable sources across the UK such as large-scale wind power45 and how the network can accommodate such additional generation. However, these issues have to be addressed to facilitate the implementation of the Mayor's decentralised energy target.

3.85 Whilst different from infrastructure needs addressed above, the infrastructure opportunities of decentralised energy provision in particular through medium and large-scale heat networks fed initially by CHP generation and sources of waste heat should be highlighted. The largest renewables opportunity within London is in the wide-scale deployment of small ad medium-scale renewable heat and power technologies, particular photovoltaics. It is projected that renewables could supply more than 10,000 GWh of energy or 12 % of London's total energy supply and decentralised energy as a whole in excess of 25% of London's energy needs. However, there are a range of barriers to the realisation of the decentralised energy opportunities including barriers to investment in heat and electricity infrastructure and the regulatory framework.[46]

c) Energy infrastructure provision

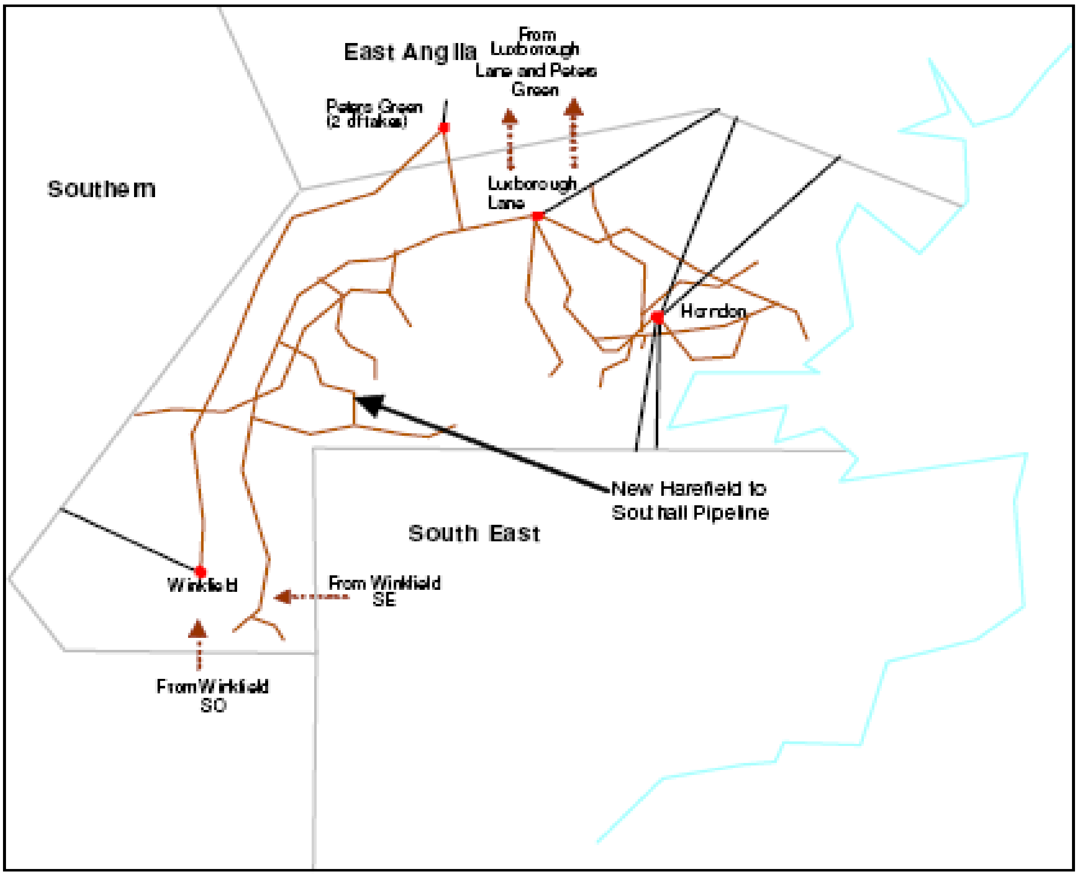
3.86 National Grid's London Cable Tunnels programme worth approximately £ 1 bn is underway. Its Phase 1 (completion by 2015) will provide a new tunnel route from Willesden to Hackney and from Wimbledon to Kensal Green. At the latter and at Finsbury Park new substations will be built subsequently for the purposes, respectively, of providing traction supplies to the Crossrail project and to support current and forecasted demand in Central London. The size and design of National Grid's substations depends on the location and specific requirements but a gas insulated substation can typically occupy an area of up to 250m x100m with a height of below 15 m.

3.87 UK Power Networks plans to invest in electricity distribution infrastructure in London spending approx. £600m in the five year regulatory period to March 2015. This investment involves establishing a number of new main substations where electricity is transformed from 132 kV to 11 kV, and this, in turn requires the installation of new 132 kV cables. Such substations, which typically require a footprint in excess of 1000m^2 and a minimum headroom of 10m, require a construction period of about two years although this may increase for a complex site. UKPN is also developing a new 33 kV network to supply new loads greater than 5MVA in the vicinity of the City. It is often not possible to install 132 kV cables using "open cut" techniques, and hence UKPN is currently constructing a deep tunnel from New Cross to The City. This forms part of an overall reinforcement strategy and will increase both capacity and resilience in The City. UKPN has recently completed a major project to install six new transformers and associated switchgear at Bankside substation, and is currently constructing new 132 kV/11 kV substations at Osborn Street and Limeburner Lane, as well as uprating Moreton Street substation in Pimlico to 132 kV. It is expected that further details about infrastructure investments plans covering the next Business Plan period 2015 to 2023 will be included in the next version of this document, which will also include details relating to the Scottish and Southern Energy Power Distribution network in west London.

3.88 In respect of gas, the following maps (Figures 9 and 10) show National Grid's and Southern Gas' main Local Distribution System (brown/green) and the offtakes from the National Transmission Systems.

[45] National Grid Transmission, RIIO-T1 Business Plan, July 2011
[46] Mayor of London, Delivering London's Energy Future, October 2011, p. 82-84

Figure 9: National Grid's North Thames Local Distribution Zone



Source: National Grid, Long Term Development Plan

Figure 10: Southern Gas' South East Local Distribution Zone (extract)

Source: Southern Gas, Long Term Development Statement

3.89 It is expected that the information about specific significant investment schemes included in National Grid's and Southern Gas' Business Plans that have been submitted to the regulator Ofgem will be included in the next version of this document[47].

3.90 To achieve the Mayor's decentralised energy target the development of decentralised heating and cooling networks as well as large-scale heat and electricity transmission networks is essential. The London Heat Map helps to identify key locations for decentralised energy opportunities. A number of potential heat networks have been identified and mapped out, together with their potential heat sources and sources of heat demand and these include in particular the Opportunity Areas. A number of CHP plants have already been identified and policy drivers promote them, in particular for major developments. These are the following CHP-led district energy schemes: Olympic Park and Stratford City, Citigen, the Pimlico District Heating Undertaking (PDHU), Barkantine Heat and Power, Whitehall District Heating Scheme, the Bunhill Energy Centre, King's Cross Central and the University College London and Bloomsbury CHP.

3.91 The Mayor's Decentralised Energy Programme Delivery Unit (DEPDU) provides services to help others develop and bring to market their decentralised energy schemes. The Mayor contributes to the delivery of exemplar decentralised energy projects such as the London Thames Gateway Heat Network or the Upper Lee Valley Energy Network, which are geared towards unlocking barriers to investment by the private sector. The cost of infrastructure for such large-scale projects tends to exceed £ 100 million. The total investment required to achieve the Mayor's target is in the order of £ 5 – £ 7 billion over the next 15 years.[48]

d) Energy infrastructure funding and delivery

3.92 Funding for investment in the electricity and gas infrastructure is raised through transportation and new connection charges, which are paid to the network operators for transmission through the networks. The price that the companies can charge is regulated by Ofgem. They set the maximum amount of revenue which the operators can take through charges they levy on users of their networks to cover their costs and earn them a return in line with agreed expectations. Ofgem's upcoming price control reviews reflect the a new regulatory framework (the so-called RIIO model[49]) which is intended to put more emphasis on incentives to drive the innovation needed to deliver a sustainable energy network at value for money to existing and future consumers. It also highlights greater opportunities to influence Ofgem and network company decision-making.[50]

3.93 National Grid has submitted revised draft Electricity and Gas Transmission RIIO-T1 Business Plans for 2013 – 2021 to Ofgem in spring 2012. Demand forecasts from the DNOs have been taken into account. For electricity the plan set out National Grid's strategy for infrastructure modernisation and new connections and includes expenditure of £ 21.9 bn (nominal) between 2013 and 2021. Over the £14bn capital expenditure programme roughly 60 % will be spent on new connections and 40 % on replacing existing assets largely built in the 1950s/1960s (above figures are national). For gas there will be the need to connect new and expanding

[47] National Grid, Gas Distribution Business Plan submission for 2013 – 2021, Nov 2011, can be view at: http://www.talkingnetworksngd.com/

[48] Mayor of London, Delivering London's Energy Future, October 2011, p. 99

[49] Revenue = Incentives + Innovation + Output

[50] Ofgem, RIIO: A new way to regulate energy networks, October 2010

sources of gas (e.g bio-gas from waste[51]) and provide new gas offtakes.

3.94 For gas distribution National Grid and Southern Gas have submitted their revised draft RIIO-GD1 Business Plans to Ofgem in spring 2012. National Grid's submission amounts to £ 13.6 bn (nominal) over the next eight years on its four gas distribution networks.

3.95 For electricity distribution the current price review period goes until 2015 and the formal preparation for the following period (RIIO-ED1) from 2015 to 2023 is well underway. UKPN is engaging with customers and stakeholders on the requirements for their RIIO-ED1 business plan with particular emphasis on the underlying planning assumptions and the key output measures that they might be assessed against.

3.96 The regulatory regime requires that customers be protected from companies spending irresponsibly to build the value of their asset base. However, this can have the effect of constraining investment until it is unambiguously required. This situation is further compounded by the complexity of development in London.

3.97 The constraint of anticipatory investment in infrastructure (i.e. ahead of need) raises questions about the incentive for the DNOs to plan more comprehensively and for the long-term the infrastructure required to accommodate further growth and business needs, although the London Plan provides robust evidence to underpin its growth figures. Planning with longer-term timescales could potentially also be more cost effective and prevent delays as they currently occur when new infrastructure is required. The Mayor will consider exploring the promotion of potential improvements to the way electricity infrastructure is provided and ensuring a forward planning orientated distribution of costs and risk. He and the boroughs may also consider using the planning system (including the use of CIL and section 106 as appropriate) to fund and enable energy networks and renewable energy technologies and infrastructure. There is further potential for funding through Allowable Solutions[52] as part of the requirements for new development to be zero carbon – residential 2016 and non-residential 2019.

3.98 The following specific issue illustrates the Mayor's concerns further: A new distribution substation may cost a DNO approx £ 15 million, and costs would normally be recovered from a developer whose development may exceed the available network capacity within an area. A developer may face in such a situation a major cost for a new piece of electricity infrastructure that could go well beyond his needs and which may significantly affect the economics of the scheme. DNOs may view this situation differently: For a major new development, the demand created may exceed the capacity available within the local network. The regulatory framework requires the developer to pay for the provision of the additional capacity which is required for their sole-use. Whilst the distribution company will pay for any additional reinforcement in the area, as it is in the common good, and the developer will be compensated for any capacity created which is over and above their needs, the developer may still be faced by a substantial upfront cost[53]. He may also have to integrate the infrastructure (e.g. a new substation) into his development site. This piecemeal way that developers contribute to the provision of electricity infrastructure potentially puts a risk on the viability or

[51] The London Waste and Recycling Board is looking to support London waste-based anaerobic digestion biogas to grid projects that would inject gas into London's gas grid.

[52] This is a mechanism to give developers an economical way of compensating for the CO2 emissions reductions (to achieve 'zero carbon') that are difficult to achieve through normal design and construction (i.e. carbon compliance).

[53] The so-called 'second-comer' rules ensure that the developer will gain a credit for future connections and/or some compensation from other developers who take up spare capacity in the new infrastructure.

delivery of developments or leads to a reduction of developer contributions that can be made for affordable housing or sustainable transport provision.

3.99 In order to address the issues set out above the Mayor hosted an Electricity Summit in November 2012 at which a High-level Working Group was launched that should facilitate closer cooperation between key stakeholders to promote sustainable levels of investment in the delivery of London's electricity infrastructure when and where required. The two key components of this are network accessibility and network competitiveness. Stakeholders have reacted positively to the establishment of the Working Group and further details about its work will be included in the next version of this document. The Mayor may also consider helping to identify land for required new substations, tunnel head houses and other energy infrastructure and possibly facilitating coordination of new cable routes with other infrastructure providers in the light of concerns of road works causing congestion. This could be underpinned by an appropriate London Plan policy dealing with land for energy infrastructure.

3.100 To support the Mayor's decentralised energy target public money needs to be invested initially to mitigate underlying risks and to create opportunities for private investment and to develop markets in the decentralised energy sector. DEPDU will provide guidance to Boroughs on business models. The Energy Service Company (ESCO) is a common model for the delivery of small-scale decentralised energy schemes. The Government's Green Investment Bank proposals will also provide an important opportunity to develop energy infrastructure[54]. The principle could be that the bank would fund an entire investment and returns are made according to the rate of connecting new customers. The Mayor seeks to influence the Government on its programmes that support decentralised energy. Other incentives exist that will support the deployment of decentralised energy including Renewables Obligation, Feed in Tariff, Renewable Heat Incentive and Climate Change Levy. [55] The Mayor has also secured around £3 million in European Local Energy Assistance (ELENA) funding from the European Investment Bank to support the commercialisation of large scale decentralised energy projects. This funding is supporting a team of experts to take potential decentralised energy projects from concept through to investment grade proposals.

3.101 Under the new regulatory regime, decentralised energy offers the DNOs the opportunity to off-set network investment by supporting the network at peak times. There is also the opportunity to intelligently integrate the decentralised energy supply chain from production to consumption using so called Smart Technology[56].

3.102 UKPN's Low Carbon London programme is exploring how the electricity distribution network should change to support the delivery of the London's carbon reduction target. It aims to do this by installing smart meters in the Mayor's Low Carbon Zones and Green Enterprise District. monitoring electric vehicle use, trialling demand response contracts with industrial and commercial customers in the City of London and the Green Enterprise District, establishing a Low Carbon London Learning Laboratory at Imperial College London.

[54] The principle could be that the bank would fund an entire investment and returns are made according to the rate of connecting new customers.

[55] Mayor of London, Delivering London's Energy Future, October 2011, p. 73 and 85

[56] GLA research is underway to look at the benefits and how this could work in London.

TELECOMMUNICATIONS

3.106 Information for telecommunications infrastructure is initially largely based on input from British Telecom (BT) and their six-monthly rolling infrastructure work program. Information from the regulator Ofcom and from BT's competitors with a significant share of London's market is expected to be included in the next version of this document.

a) Strategic telecommunications infrastructure

3.103 This includes the availability of fast broadband[57] and ethernet connections as well as Wi-Fi Hotspots. The required physical infrastructure includes data centre and street cabinets as well as the copper, fibre and ethernet connections. Wi-Fi equipment can be included in residential and business premises but also in pay phones, bus stops and lampposts.

b) Telecommunications infrastructure need

3.104 Telecommunications is a fast-growing sector, and software companies are particularly thriving in London compared with other European cities[58], reflecting London's global city role as a finance and creative capital. An economic evidence base for the Mayor's Digital London initiative has been produced[59]. It has been identified that ICT companies concentrate mainly in the CAZ but also for example in the Docklands and Greenwich (back offices). Moreover, a digital hub is fast developing in East London. The area has experienced 700% growth over the past three years[60]. The survival of these companies is dependent upon fast telecommunications infrastructure – without this London's digital economy will not be globally competitive.

[57] Dial-up internet is hardly used any more.
[58] London as a whole is home to 22,000 ICT and software companies - more than three times the amount of its nearest European competitor, Madrid.
[59] http://www.london.gov.uk/publication/londons-digital-economy
[60] London & Partners data

3.105 The use of the internet for domestic use is also increasing rapidly with the increasing popularity of online buying and selling, home working and online marketing as contributing factors. The growing demand for bandwidth is driven in the residential sector largely by innovation in the entertainment sector (HD TV, etc). The Olympic Games in 2012 gave a boost to the demand in particular for instant internet access anywhere in London requiring a further roll out of wireless coverage. BT had a target of 500,000 Wifi Hotspots in London by the time of the Olympic Games. Future targets are being identified and the potential significance of 4G network rollout across London as well.

3.106 In 2011, 19 million (77 %) of households in Great Britain had an Internet connection. Access barriers for the remaining 5.7 million include the high cost of equipment and the lack of skills to use the internet. However, for over half of those without a connection it is a deliberate choice.[61]

3.107 Data centres represent important telecommunications equipment for many large businesses in London. To ensure complete resilience for un-interrupted service the distance to the data centre should not exceed 22 miles.

c) Telecommunications infrastructure provision

3.108 Policy 4.11 of the London Plan promotes the expansion of modern telecommunications infrastructure and aims to address e-exclusion.

3.109 According to BT almost everywhere in London high-speed broadband (up to[62] 24 Mbit/s) is available. The roll out of super-fast broadband (up to 110 Mbit/s) is under development and the coverage of 2.6 million premises in London was

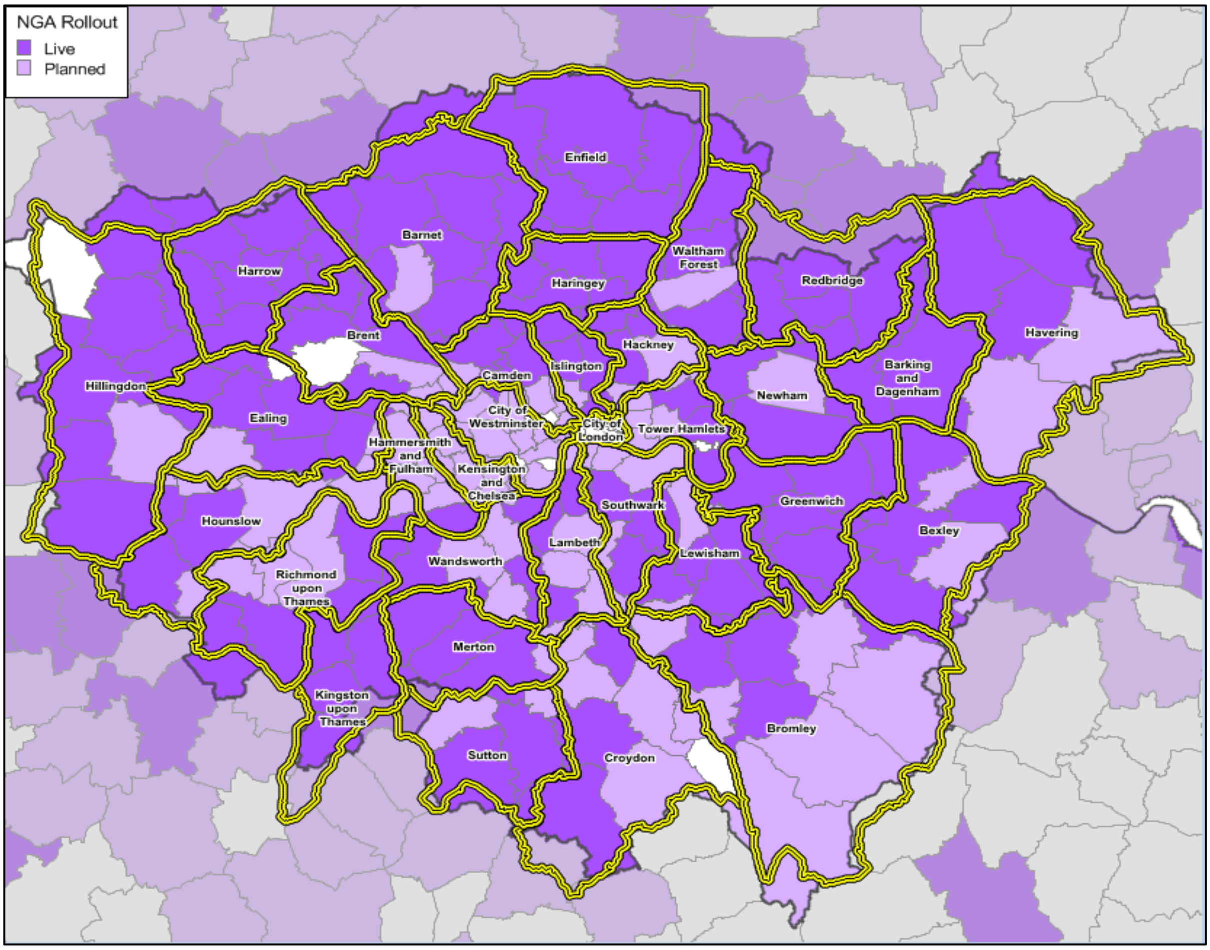
[61] Office for National Statistics, Statistical Bulletin, Internet Access - Households and Individuals, August 2011
[62] The speed decreases with the distance from the exchange or street cabinet.

targeted by March 2012. It requires a fibre connection directly to the premises or at least to a street cabinet. BT provides the first for new development areas if the developer informs them at an early stage. For large business services BT provides an ethernet connection (up to 10 Gbit/s). The maps on the following page (Figures 11 and 12) show BT's super-fast and ethernet deployment. Areas where currently no super-fast broadband is planned include mainly remote areas in north-east Hillingdon, Brent and south Croydon as well as the City of London and other business centres. These areas mainly cater for large businesses through the provision of ethernet connections but less well for the relatively few residential customers and SMEs. In terms of ethernet deployment the majority of London can be connected. The 'white' areas, where connections are technically possible but potentially more expensive to provide, include individual areas within the north of London as well as areas in Bexley, Lambeth, south Bromley and south Croydon.

3.110 It should be noted that the information provided for BT's coverage requires further updating and should be complemented with information from its competitors with a significant share of London's market such as Virgin Media. Such information is expected to be included in the next version of this document.

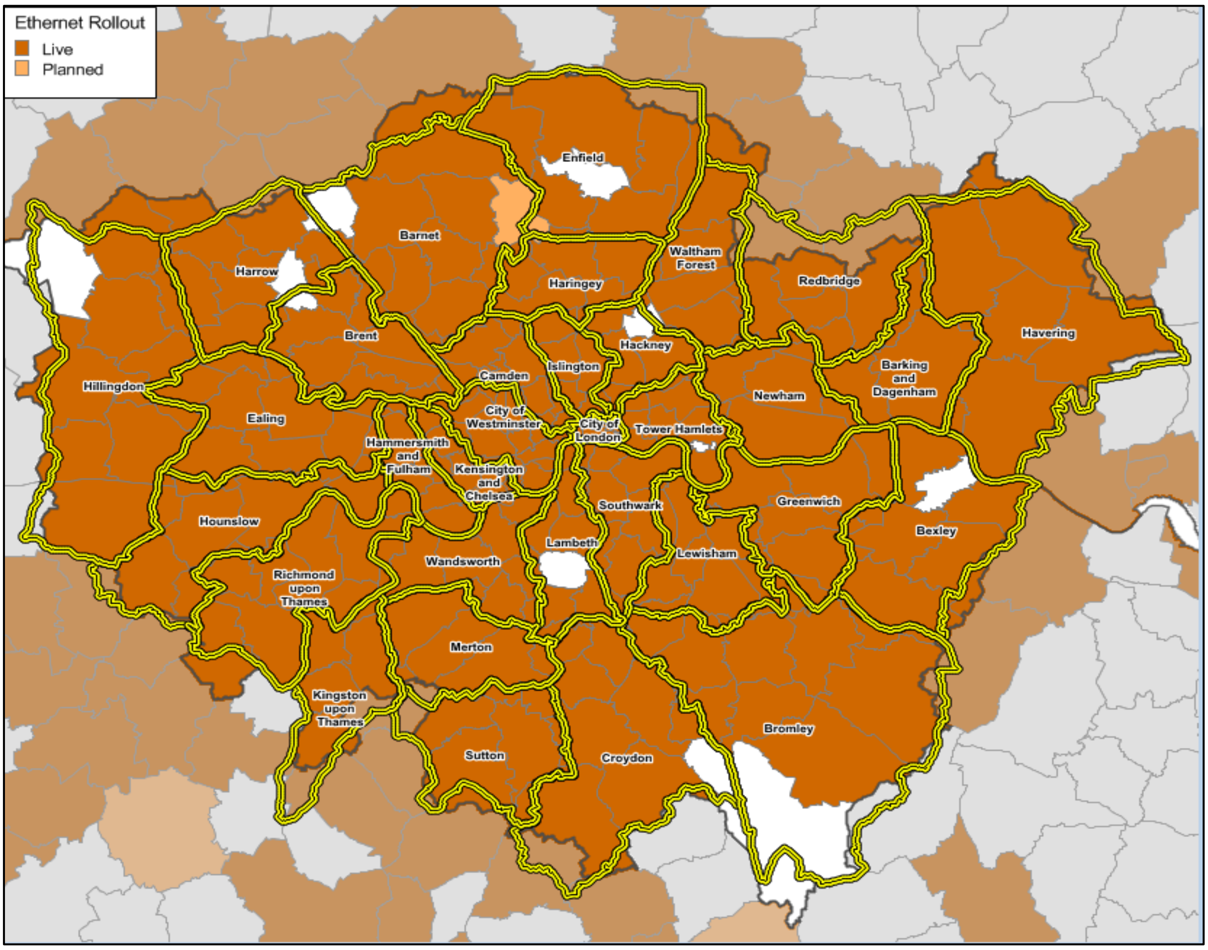
3.111 As telecommunications infrastructure equipment becomes smaller through innovation, over time the size and number of the exchanges required is likely to decrease.

Figure 11: Super-fast broadband deployment in London



Source: BT

Figure 12: Ethernet deployment in London



Source: BT

d) Telecommunications infrastructure funding and delivery

3.112 The Government has established an urban broadband fund that will create ‘super-connected cities’ across the UK. The cities will receive support from the fund over the next three years. The GLA has secured for London £ 25 million from DCMS and will match this with other public and private funds in particular to meet the digital connectivity needs of London's businesses. It is expected that through the delivery of this project further spatial data about telecommunication needs of different parts of London may become available.

3.113 Investment and funding of telecommunications infrastructure are regulated by Ofcom. In the light of the focus on responding flexibly to individual customer needs and the fast pace of innovation in this sector the rolling investment program only covers six months into the future. It is possible that already within a few years new bandwidth technologies will be available. This is likely to also require very regular reviews of this section of the Implementation Plan.

3.114 In terms of any current supply gaps identified there are mainly economic but few technical barriers for filling these gaps. Residential development is the economic driver for telecommunications investment.

3.115 A technical constraint to provision is the complexity of underground works in the light of underground infrastructure for other types of infrastructure (gas, electricity, transport, water) and potential conflicts of required construction works with surface transport. A coordinated approach is necessary to address these complexities and to identify potential synergies.

3.116 The provision of data centres and street cabinets may be constraint by the availability of electricity as potentially in the centre of London (see section on electricity infrastructure). In some parts of London difficulties have been experienced between boroughs and service providers over the siting of street cabinets and other infrastructure. This may be an issue for further consideration if it impedes implementation of essential infrastructure.

WASTE

3.117 Information for waste infrastructure is largely drawn from the Mayor's Municipal Waste Management Strategy (MWMS) and supporting documents, and the Mayor's Business Waste Strategy for London (BWS), all published in November 2011[63]. Work undertaken by the London Waste and Recycling Board (LWARB)[64] is also reflected.

3.118 For the purposes of this Implementation Plan, London's waste arisings (ie waste generated in London) is categorised into three streams:

- Local Authority Controlled Waste (LACW) (previously known as municipal solid waste (MSW)) – waste collected by London's waste authorities, principally from households, but also an element from commercial organisations
- commercial and industrial (C/I) waste
- construction, demolition and excavation (CDE) waste

The London Plan focuses mostly on MSW and C/I waste, as these are the waste streams which national planning policy requires planning authorities to address through their plans, identifying appropriate waste management capacity.

3.119 The problems of providing reliable estimates of waste data are long standing and well-known. While the quality of MSW data is accepted, with authorities making regular returns to DEFRA's Waste Data Flow, there is no equivalent for C&I waste. The Environment Agency provides C&I waste treatment data for licensed sites through its waste interrogator tool. However, what may be a significant proportion of C&I waste is managed by sites exempt from the need for a licence from the Environment Agency, so the quantum and origins of the waste these sites

[63] http://www.london.gov.uk/publication/londons-wasted-resource-mayors-municipal-waste-management-strategy
[64] http://www.lwarb.gov.uk/

handle cannot be precisely quantified. The imprecision of C&I data is a national one but as London is the largest commercial centre in the country this problem is exacerbated. CD&E estimates are based on survey data undertaken in 2003.

a) Strategic waste infrastructure

3.120 The strategic waste infrastructure addressed in this section of the Implementation Plan is that which is required to manage London's waste arisings within London by 2031 in line with London Plan waste policies– chiefly, material reclamation facilities (MRFs), composting and anaerobic digestion facilities, pre-treatment facilities and thermal treatment facilities.

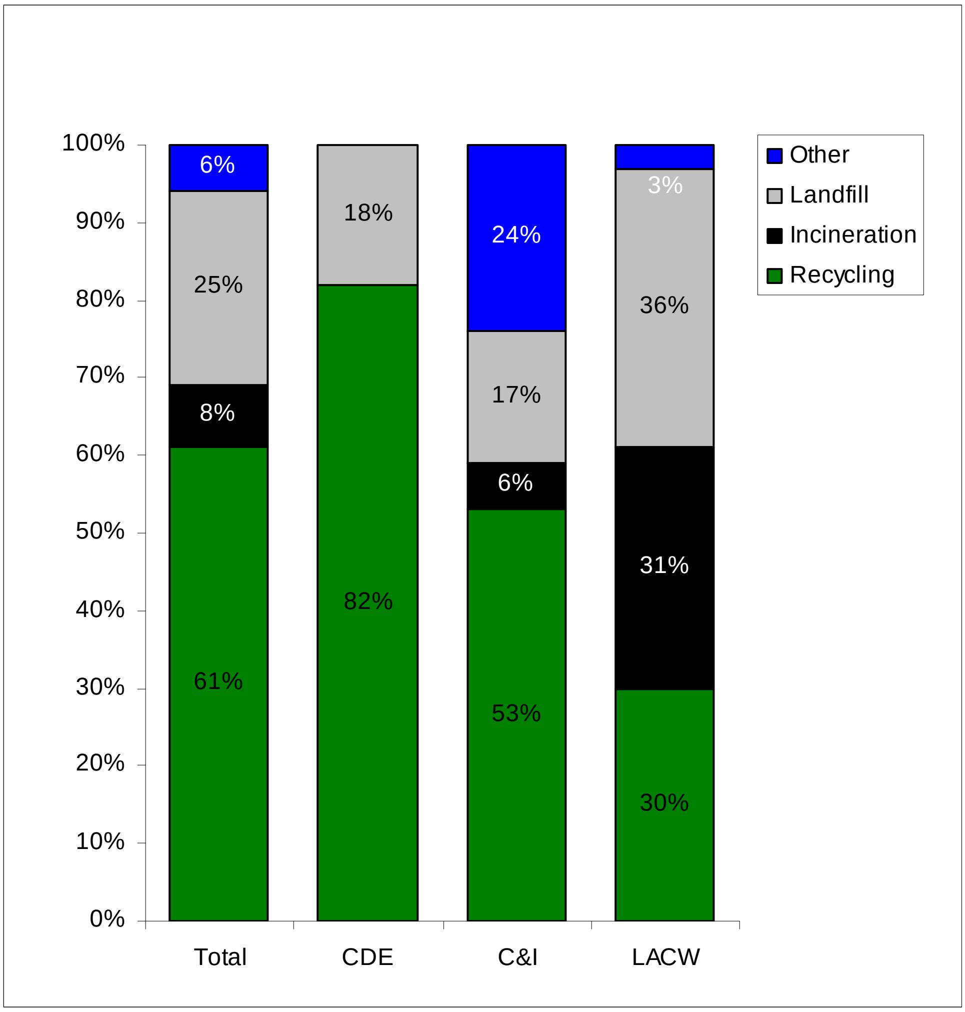
b) Waste infrastructure need

3.121 In 2008, London generated a total of 20 million tonnes (mt) of waste, comprising approximately 4 mt of LACW, 6.5 mt of C/I waste and 9.5mt of CDE waste[65]. The London Plan estimates London's MSW and C/I waste arisings (the key waste streams for planning purposes) at 10.7 mt for 2011, rising to 11.7 mt in 2031 of which 53% is currently managed in London for the purposes of meeting waste apportionment, with the remainder exported, chiefly to landfill beyond the Greater London area.

3.122 Figure 13 shows the waste management methods used in London for each of the three main waste streams[66]. Overall, 61% of London's waste is reused, recycled or composted, but it has to be said that this figure is skewed by the very large proportion (82%) of CDE waste which is managed in this way. Reuse, recycling and composting accounts for 53% of C/I waste, and only 30% of LACW, although this waste makes up the lowest proportion of waste arising overall.

[65] The Mayor's Business Waste Strategy for London, November 2011, page 24
[66] Ibid, Figure 2, page 25

Figure 13: Breakdown of London's waste management methods 2009/10



Source: MWMS & BWS

3.123 The Mayor's key London Plan policy objectives for waste, as set out in Policy 5.16 Waste Self-Sufficiency, are to:

- minimise waste
- increase reuse, recycling and composting, and to
- maximise London's waste self-sufficiency – i.e. to reduce waste exported to landfill outside London, by managing over the plan period (to 2031) as much of London's waste within London as is practicable.

To make sure this happens, Policy 5.17 Waste Capacity requires boroughs to allocate land for waste to provide enough capacity to deal with the amounts of waste allocated to them through a spatial redistribution process known as waste apportionment.

3.124 London Plan Table 5.3 shows the tonnages of apportioned LACW and C/I waste boroughs are expected to manage through the plan period. The amounts rise over time – not because waste generated is expected to increase dramatically, but because an increasing proportion of waste will be managed within London as waste exports to neighbouring regions decline and the capital nears waste self-sufficiency.

c) Waste infrastructure provision

3.125 In order to achieve the Mayor's objective of waste self-sufficiency, London will need to develop infrastructure capacity to manage at least an additional 8.5 mt of MSW and C/I waste within its boundaries by 2031.

3. 126 To develop this infrastructure, LWARB's funds alone will not be sufficient. Given the extent of the capacity gap and the capital cost associated with waste management infrastructure development, LWARB's fund is only capable of supporting partial fulfilment of the 'gap' requirements. LWARB therefore takes a targeted approach to the use of its funding to make sure the identified capacity gaps are narrowed as much as possible, supporting scale projects and thereby reducing the overall capacity gap.

3.127 To date, LWARB has committed to making loans to six infrastructure projects totalling £18.3 million – see Table 5. These projects will deliver a total of 428,000 tonnes of additional waste management capacity, for local authority collected waste and C/I waste[67].

3.128 As pointed out earlier, London currently deals with a proportion of its waste by exporting it to other regions, mostly to landfill. The London Plan sets stringent, but achievable, targets for the capital's waste authorities to progressively increase internal waste management capacity so that the exported component decreases over time. The Mayor is working with waste authorities in neighbouring regions to monitor and plan for this transition towards self sufficiency, particularly against the background of progressive exhaustion of landfill capacity outside London.

d) Waste infrastructure funding and delivery

3.129 It is estimated that the total infrastructure investment required for London's waste management needs could have capital costs in the region of £2bn and annual operational costs of £150 million.

3.130 This level of investment will be met primarily through commercial funds It is evident through LWARB's project portfolio that the waste industry is keen to help fill London's waste management capacity gap, but significant additional investment is necessary from banks and other financial institutions to fill the market. Whilst the UK Green Investment Bank is very active in the PFI/PPP space, LWARB's financial involvement in merchant projects has been demonstrated to help leverage private funding to the extent that such projects become viable. It is essential that LWARB continues to receive funding from the government beyond 2015 to develop projects currently in the pipeline, to give certainty to the market, and to leverage in additional funding for further projects. There are currently a number of funds to leverage investment from, which could contribute to developing waste management infrastructure in London, including the London Green Fund (£186 million).

3.131 These substantial costs could be partially offset, however, by savings achieved through the successful implementation of the full range of Mayoral waste policies – for example:

- Managing London's LACW in the most optimal way through reuse, recycling and renewable energy generation could save London waste authorities up to £90 million per year.
- Preparing London to manage all its waste (including C/I and CDE waste) in the most carbon efficient and economically beneficial way could generate approximately 1260 green-collar jobs and contribute £52 million of direct Gross Value Added (GVA) to the economy each year to 2025.

[67] Ibid, pages 60 and 117

- **Table 5 LWARB-funded and committed waste infrastructure projects 2008-11**

Project Sponsor	Project types	Capacity (tonnes per year)	Location	Status of project
Confidential	Anaerobic digestion	44,395	Greenwich	Funding committed
TEG Group	Anaerobic digestion	49,000	Barking and Dagenham	Contracted
Biossence	Thermal treatment	130,000	Havering	Contracted
GreenTech	Plastics Reprocessing	25,000	Enfield	Funding committed
Orchid Environmental Limited	MBT/MHT	160,000	Bexley	Funding committed
Confidential	Plastics Reprocessing	20,000	Greenwich	Funding Committed

- *Source: LWARB*

- Energy generated from London's municipal waste, after maximising recycling, could contribute £92 million of savings to London's £4 billion electricity bill and take £24 million off London's £2.5 billion gas bill[68].

SOCIAL INFRASTRUCTURE

3.132 Information for social infrastructure is initially largely based on GLA research to build on relevant London Plan policies and the Housing SPG.

a) Strategic social infrastructure

3.133 This focuses initially on education, health and social care, sport, policing and emergency facilities as strategic social infrastructure but social infrastructure also covers a wide range of other facilities such as community, cultural, play and recreation facilities and places of worship, and many other local uses and activities which contribute to Londoners' quality of life. Provision for these facilities should be addressed at the local level.

[68] The Mayor's Municipal Waste Management Strategy, November 2011, page 95

EDUCATION

a) Education infrastructure need

Primary and secondary education

3.134 GLA demographic projections show the total numbers of primary age children are set to rise by 20.7 per cent by 2021. In addition, the numbers of children seeking secondary school places is expected to rise greatly, with the number of eleven-year olds up 22.4 per cent by 2021. This means the minimum total demand for places by children resident in London between 2011 and 2021 will require 4,900 additional primary classes and 2,800 additional secondary classes across London[69].

3.135 The GLA currently runs a pan-London school roll projections service for boroughs. Opportunities to expand the service so it covers all boroughs and gives a more strategic picture of school places in the capital will be explored in 2013. The Mayor will work closely with boroughs and the Department for Education (DfE) on identifying areas of need.

Higher Education

3.136 GLA's Data Management and Analysis Group's Briefing on projected demand for places at Higher Education Institutions in London[70] demonstrates that on current trends, total full-time undergraduate numbers are projected to increase by 67,313 (31%) between 2009-2010 and 2021-22. Total full-time post-graduate numbers are projected to increase by 97,910 (131%) over the same period.

[69] This does not take account of some spare capacity within some schools nor take account of London's higher mobility of children across borough boundaries

[70] Mayor of London. Projected Demand for Places at Higher Education Institutions in London, Intelligence update 13-2011. http://data.london.gov.uk/datastore/package/projected-demand-places-higher-education-institutions-london

Table 6: Actual and projected demand for full-time undergraduate places at London HEIs

	UK domiciled full-time under-graduates	'Other EU' domiciled full-time under-graduates	'Non-EU' domiciled full-time under-graduates	Total full-time under-graduates
Actual (2009-10)	175260	15405	26680	217355
Projected (2021-22)	222212	15728	54148	284668
% increase	27	2	103	31

Source: Students in Higher Education Institutions 2009/10, Higher Education Statistics Agency

Table 7: Actual and projected demand for full-time postgraduate places at London HEIs

	UK domiciled full-time post-graduates	'Other EU' domiciled full-time post-graduates	'Non-EU' domiciled full-time post-graduates	Total full-time post-graduates
Actual (2009-10)	30990	11355	32365	74725
Projected (2021-22)	51839	24065	78807	172632
% increase	67	112	143	131

Source: Students in Higher Education Institutions 2009/10, Higher Education Statistics Agency

3.137 Tables 6 and 7 show that on current trends, the rate of increase is projected to be higher among overseas students (particularly non-EU) than among domestic students. However, it is important to note that the Government proposals below will affect future demand for places from students and these are not factored into the above projections:

- Change to tuition fees for domestic students and more specifically London
- Immigration policy to address non-economic routes of migration into the UK (the introduction of higher English language requirements for incoming students, limitations to the amount of international students education providers can accept, standards that education providers need to meet before they can accept new international students and restricting applicants to study one course only)

The supply of student accommodation in London and the affordability of rents are key considerations for students and factors in the choice of the institution and the overall attractiveness of HEIs in London. Strategic planning is essential if the projected demand for new bed spaces in student accommodation is to be met.

b) Education infrastructure provision

Primary and secondary education

3.138 It is clear that London is facing a growing crisis in school places. London Councils forecasts a serious shortage of both primary and secondary school places in the next four years of 90,000 by 2015/2016[71] based on available capacity in May 2011.

3.139 Free Schools can play an important role in helping to provide more good quality places where there is a shortage, but also in those areas where there is no shortage but parents feel the quality of provision is not good enough. London is currently home to 26 open Free Schools.

3.140 As the strategic planning authority and regeneration and housing agency for London, with access to data about school places, the Mayor intends to set up a 'New Schools for London' unit in the GLA to help address the shortage of school places in London and support the development of Free Schools. The Mayor has also committed to auditing the GLA group estate for 10 buildings or sites for purchase by the DfE for Free School developments.

Higher education

3.141 By far the largest concentration of higher education in the UK is in London. London counts 41 publicly funded Higher Education Institutions and a total of 427,785 students and 99,290 members of staff. Private institutions have no legal requirement to produce figures on their status. However it is estimated that 10% of students attend 488 private sector institutions in London (private providers and other higher education centres) amounting to 122,000 students.

3.142 Since 2010-11, all universities and colleges have been subject to limits placed on the number of undergraduate students they can recruit, known as student number controls. From 2012-13, the Government asked Higher Education Funding Council for England (HEFCE) to implement a core margin policy whereby institutions offering lower tuition fees could bid for additional student places from a margin made available through a reduction in the number of places available at all institutions. Furthermore, the Government introduced its high-grades policy – in 2012-13 students with AAB at A level or other exempted qualifications were excluded from the student number control limit. In 2013-14 it is likely this will extend to ABB. These policies could affect the capacity of universities and colleges in London to recruit students, expand or contract provision differentially. HEFCE continues to monitor developments nationally.

3.143 The future role of local educational authorities is presently unclear. Future provision for primary and secondary schools will have to be investigated further in the light of the emerging changes.

c) Education infrastructure funding and delivery

Primary and secondary education

3.144 Funding for all schools in the UK is undergoing reform. London's schools will receive nearly £6.5 billion via the Dedicated Schools Grant (revenue stream) in 2012-13, with a further £225 million of funding being provided via the Pupil Premium targeted at the 375,000 most deprived pupils in the capital. London boroughs will receive £414 million in core capital funding, and this was supplemented in April 2012 by an additional £307 million for school places.

3.145 In 2011 the Government allocated an extra £260 million to the capital to address the serious shortage of places needed in primary schools in the next

[71] This is calculated by London Councils as a shortage of 78,923 primary school places and 12,227 secondary school places across London, between 2011/12-2015/16. They estimate total cost of meeting such a shortfall as £2.3bn by 2015.

four years. The 2012 Autumn Statement with £1 billion to expand 'good' schools and build 100 new Free Schools and academies (national figures). London authorities can use the capital funding they receive from the DfE to establish new schools, with a statutory presumption that these should be Academies or Free Schools. Free School groups can also access capital funding through the Free School application process run by the DfE. Yet many are struggling to find suitable sites in their area of choice.

Higher education

3.146 Higher education in London is funded by Higher Education Funding Council for England (HEFCE). HEFCE recurrent funding allocated to universities and directly-funded colleges in London totalled £1,386 million in 2011-12. HEFCE's grant is reducing to reflect the higher proportion of funding available to institutions through increased tuition fee income from 2012-13 – the first year with students paying fees of up to £9000 per year. Total national HEFCE grant available for 2012-13 is £5,311 million (with £3,213 million for teaching) compared to £6,507 million (£4,339 million for teaching) in 2011-12. This will affect all London institutions differentially, though most will see cash reductions in their funding from HEFCE.

3.147 In April 2009 London Councils published estimates that by 2014 London could have a shortfall of more than 18,200 reception class places, with 14,700 five year olds being taught in temporary classrooms[72]

3.148 In respect of primary and secondary education, the Government will:

- invest an extra £600 million to fund 100 additional Free Schools which are all-ability state-funded schools set up in response to parental demand by the end of this Parliament. This will include new specialist maths Free Schools for 16-18 year olds, supported by strong university maths departments and academics; and
- invest an additional £600 million to support those local authorities with the greatest demographic pressures – the majority of which are in London. This funding is enough to deliver an additional 40,000 school places.

3.149 Planning obligations can be secured to ensure delivery of new facilities and services (see London Plan Policy 8.2). A number of boroughs are also bringing forward proposals to use CIL for this purpose. Further investigations will be carried out on funding opportunities associated to higher education and primary and secondary facilities.

[72] Do the Maths: tackling shortages of primary school places in London. London Councils, April 2009.

HEALTH

a) Health infrastructure need

3.150 In July 2010 the Government published its White Paper ‘Equity and Excellence: Liberating the NHS’ setting out plans to restructure the NHS. The Health and Social Care Act will bring about the transfer of responsibility for commissioning most healthcare services to consortia of GPs, known as clinical commissioning groups, and the establishment of an NHS Commissioning Board for commissioning primary care services and specialist acute services. In addition, the Primary Care Trusts’ (PCT) public health function will transfer to local authorities. The strategic health authority NHS London and the 31 London PCTs will be abolished and the ambition is for the new clinical commissioning groups to be the statutory commissioning bodies from April 2013.

3.151 In advance of this, PCTs have arranged themselves into six clusters to reduce management and operating costs and to support the development of GP commissioning in London. The clusters have produced Quality, Innovation, Productivity and Prevention (QIPP) plans as part of national initiative to improve the quality of care and deliver efficiency savings. QIPP priorities include providing services closer to home, reducing avoidable admissions and re-admissions to hospitals, reducing length of stay and implementing new pathways for urgent care. Health improvement and prevention initiatives and programmes will also deliver significant cost savings to the NHS.

3.152 The regeneration of individual areas will require a comprehensive assessment of health and wider social infrastructure requirements in accordance with the methodology in paragraph 3.88 of the Plan, including site opportunities and options for integrated provision of services. Housing development in the Opportunity Areas and Areas of Intensification will place significant pressure on existing health services and many of the areas have limited or no existing health provision. Therefore, new primary healthcare facilities will be required to cater for the new population. Across London it is estimated that the following primary care health services will be required:

Table 8: Broad health requirements

Broad health requirements	Broad requirements (low)	Broad requirements (high)
Number of Whole Time Equivalent (WTE) GPs	158	235
Primary and community care space (m2)	26,070	38,775

Source: The London Strategic Housing Land Availability Assessment and Housing Capacity Study (SHLAA/HCS) and the HUDU Model. The ‘low’ and ‘high’ requirements relate to different net population growth scenarios.

3.153 The planning of new facilities will take account of local commissioning priorities which in turn are influenced by current and future health needs and demand for services. London continues to experience significant population growth and an increasingly ageing and ethnically diverse population. Increased demand for services, coupled with shifting care closer to home and out of hospitals, including the early detection and treatment of long-term conditions will place greater pressure on primary and community care. Local decision making will also seek to integrate services across primary and secondary care and social care organisations. Health and wellbeing boards and their partners undertake and contribute to the Joint Strategic Needs Assessment and Joint Health and Wellbeing Strategy that inform GP commissioning plans and support the integration of delivery.

3.154 No infrastructure requirements for secondary care are provided at this stage as further work is needed to assess the implications of QIPP plans, hospital reconfiguration plans and reviews of mental healthcare services. Individual hospital sites will also be subject to rationalisation as different institutions take out clinic and bed capacity.

b) Health infrastructure provision

3.155 Currently health estate planning is driven by PCT clusters who are developing estate strategies. Making better use of the NHS estate in London is a key element of QIPP with a focus on providing greater access to services and improving the quality and efficiency of the estate. New premises should be able to deliver sufficient capacity to meet the needs of existing and future patients and deliver care closer to home, which will include investment in out-of-hospital services.

3.156 Specialist hospital services are being centralised and community health services have been transferred to hospital trusts. Plans are underway to reconfigure hospital services in north east London, in north London and in south east London.

3.157 The NHS estate in London (valued at current use at approx £6 billion) is complex, comprising some 2,000 sites operated by many different organisations, many of whom are undergoing major reorganisation. The ownership and management of the PCT estate is changing. Some properties have been transferred to community service providers, whilst PCTs retain the residual estate for the time being.

3.158 During 2010/11, 21 new primary care centres were opened. It is unlikely given the focus on estate modernisation and efficiency that this level of new build development will continue. However, local authority and private sector regeneration and development schemes offer an opportunity to deliver new facilities and partially fill a funding gap through s106/CIL.

c) Health infrastructure funding and delivery

3.159 The Spending Review 2010 has reduced NHS capital funding by 17%, with the expectation that NHS organisations will achieve £20 billion savings through quality and productivity improvements by 2014. The Operating Framework for the NHS in England states that there will be no automatic capital allocations for PCTs, with necessary funding being granted on a case-by-case basis. The priority for capital funding will be on maintenance and essential smaller improvement schemes. It is likely that capital funding for new build schemes will be tightly constrained. Also, additional demand for healthcare services generated by rapid population increases and transient populations will generate significant revenue costs which are not immediately picked-up in PCT allocations.

3.160 Based on estimated housing capacity and population increase on large sites in the designated Opportunity Areas and Areas of Intensification from, it is estimated that broad health infrastructure costs will be around £ 1 – 1.5 bn.[73] This figure includes both primary and secondary capital and revenue costs.

[73] London Strategic Housing Land Availability Assessment and Housing Capacity Study (SHLAA/HCS) and the HUDU Model

SPORT

a) Sport infrastructure need

3.161 Swimming pools, sports halls and artificial grass pitches are most important in supporting community sports participation. They are also the most important facilities in terms of local authority investment. More detailed information on projected community demand and projected supply by 2021 of swimming pools, sports halls and artificial grass pitches can be found in the Mayor's technical report on strategic sports facilities in London.[74] The essential contribution parks, open spaces and playing fields make for informal play and recreation is recognised in paragraph 3.184. Specifically on playing fields research is being considered, also to identify data about additional requirements.

Swimming pools

3.162 At a London wide level, demand and supply for swimming pools are broadly in balance and will be in 2021. However, there are some variations or 'hot spots' within each sub region. The central, east and north sub-regions have the greater supply deficit of swimming pools. In these areas, there is a need for additional swimming pool provision or a change in the management of existing swimming pools to increase access.

Sports halls

3.163 London's population growth is projected to generate a demand for 2,486 badminton courts in 2021.The total capacity or sports hall supply across London is 1,795 badminton courts, available for community use courts. Across London total demand exceeds total supply by some 690 badminton courts.

Artificial grass pitches

3.164 Across London the five sub regions are projected to generate a demand for just under 269 pitches by 2021. This total demand compares with a London total supply across the five sub regions in 2021 of 138 pitches, available for community use. This means that total demand exceeds total supply by just over 130 pitches.

b) Sport infrastructure provision

Swimming pools

3.165 London has 273 swimming pool sites[75] of which 177 sites are public and 96 sites are commercial sites. Public swimming in public pools represents 64.8% of the total swimming pool stock in London. The highest supply of swimming pool sites is in the South sub-region, with 74 sites and 27% of the total swimming pool capacity across London. Pools in London are close to capacity (pools are regarded as being close to full when they are at 70% of their theoretical capacity).

Sports halls

3.166 London counts 436 sports halls sites and a total of 603 individual main halls. The East sub-region has 34% or some 149 sites of the London total sites. The South sub-region has 24% of the total London supply of sports halls with 106 sites. By 2021, 91% of the sports hall capacity will be used across London.

Artificial grass pitches

3.167 London has a total supply of 158 artificial grass pitch sites of which 151 sites are public and 7 sites are commercial artificial grass pitches. The East sub-region has the highest number of artificial grass pitch sites with 50 sites and 31% of the total London supply. By 2021, London's 158 artificial grass pitches sites will be at capacity.

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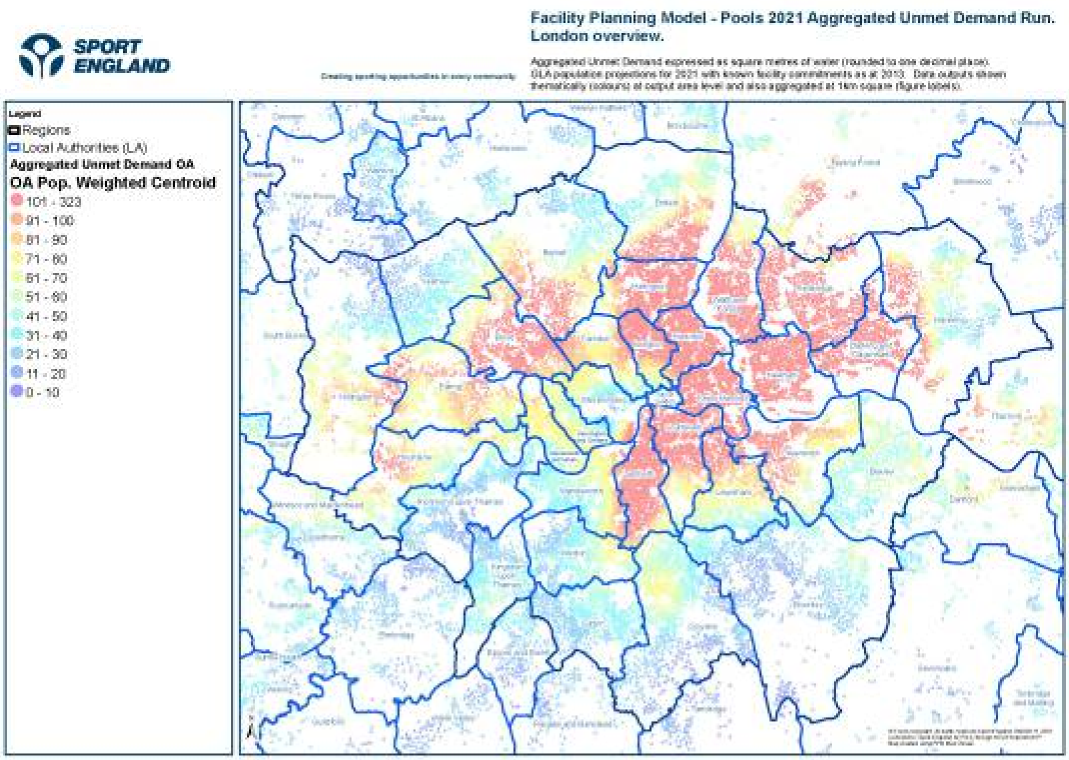
[74] An evidence base for sports facilities in London – the basis for strategic sports facilities planning across London using Sport England's Facility Planning Model. David Payne, August 2010. http://www.london.gov.uk/who-runs-london/mayor/publications/planning

[75] ibid. http://www.london.gov.uk/who-runs-london/mayor/publications/planning

Figure 16: Unmet demand for swimming pools in London 2021



Source: Sport England

3.168 The sport facility stock in London changes on a regular basis with new sites opening and some sites closing. The Mayor's technical report on Sports Facilities in London[76] is both used by the GLA (Mayor's Capital Legacy Fund) and Sport England via their investment programmes to inform their decision making processes in relation to the capital grants that they allocate in London. This helps to ensure that the investment is targeted to have the maximum impact. The data from the technical report is also used by National Governing Bodies as part of the production of their National Facility Strategies which delineate the priorities for facilities for those sports in London

3.169 For community sports facilities, Table 9 provides unit costs for individual key facilities.

Table 9: Unit costs for key community sports facilities

Facility Type	Facility Details	Costs
Pools	25m pool (5 lane)	£3,120,000[77]
Sports hall	1 court - 4 court	£800,000 - £2,685,000
Artificial grass pitches		£690,000 - £1,185,000

Source: Sport England

[76] Ibid. http://www.london.gov.uk/who-runs-london/mayor/publications/planning

[77] http://www.sportengland.org/facilities__planning/planning_tools_and_guidance/planning_kitbag/facilities_costs.aspx

c) Sport infrastructure funding and delivery

3.170 For sport facilities, Sport England invests National Lottery and Exchequer funding[78] (around £225 million a year) to help grow participation in grassroots sport and create opportunities for people to excel at their chosen sport. Although these funding pots contribute significantly to the overall investment in sports facilities, others funding sources such as the London Marathon Trust, the Lottery grants secured by amenity societies or Friends' groups to make improvement in facilities, are important to deliver the funding necessary to secure all of London's sporting needs.

POLICING

a) Policing infrastructure need

3.171 The Metropolitan Police Service (MPS) and the Mayor's Office for Policing and Crime (MOPAC) are committed to delivering a more efficient, effective and locally focused service with modern facilities. The Metropolitan Police 'Estate Strategy 2010 - 2014' sets out how this will be achieved. It maintains the principles to modernise and maximise the Metropolitan Police Estate. An element of modernisation is a requirement for 'strategic' policing facilities, with a pan-London role.

3.172 The Estate Strategy highlights the following as key challenges facing the estate:

- Responding to the speed of change and increasingly dynamic nature of policing.
- Having the right buildings; of the right size; in the right place.
- Being able to able to accommodate new policing operations at short notice.
- Accommodating new functions into existing buildings without disrupting current operations.
- Working with a range of other public sector partners.
- Working within increasingly difficult financial constraints and ensuring optimising the use of our assets.

b) Policing infrastructure provision

3.173 It is important that the diverse nature of policing needs as a result of development and intensification can be met. Policing needs vary on a borough-by-borough basis and are influenced not only by population numbers but also by demographics, accessibility and specialist operational need. The identification of strategic policing requirements allows a holistic approach to the provision of policing facilities and the MPS have identified the following facilities (Table 10) will be required, together with details of funding arrangements.

3.174 The MPS also has to ensure communications coverage through roll-out of its Airwave network. This means ensuring provision is made for the necessary infrastructure to be incorporated in new development. The Mayor is considering providing guidance about how this might best be done.

[78] http://www.sportengland.org/funding.aspx

c) Policing infrastructure funding and delivery

3.175 Please see Table 10.

Table 10: Requirements for strategic policing facilities

Infrastructure/ Delivery	Short term (2010-2015)	Medium term (2015-2020)	Long term (2020-2035)
Custody Provision[i]	35 units total provision to 2017		
Strategic Deployment Facilities[5]	5 units		
Pan-London Training Facilities		4 units	
Specialist Operational Training Facilities	Undetermined		
Regional Ware-housing Facilities		4 units	

Facility Type	Facility Details	Total Costs (Committed)	
Custody Provision[ii]	To increase capacity to meet policing needs and resilience to Prison and Courts Service To provide modern, fit for purpose custody accommodation for detainees and staff Backup and public meeting facilities also incorporated to meet legal requirements of the Police and Criminal Evidence Act	[iii]£105m	(£45m)
Strategic Deployment Facilities[5]	To meet the strategic and international crime prevention role, including counter-terrorism, diplomatic protection and UK security	£45m	(£18m)
Pan-London Training Facilities	Provision of officer training facilities, widely located, principally for borough-based policing activity	£14m	(£7m)
Specialist Operational Training Facilities	Provision for various specialised policing operation, including firearms and Forensics	Unknown	Unknown
Regional Ware-housing Facilities	Accommodation for backup operations	£28m	(£7m)

Source: Cgms

EMERGENCY SERVICES: FIRE STATIONS

a) Fire services infrastructure need

3.176 The London Fire Brigade (LFB) operate 113 fire stations across London (including 1 river station) and 169 pumping appliances (fire engines) located at those stations. The location of 271 vehicles enables them to provide additional support when required at major incidents while maintaining cover across London for day-to-day demand. In preparing how to deliver an emergency fire and rescue service to London the LFB are mindful of how London will change over the coming years. There are however no direct links between the population size of London and the number of emergency incidents the LFB attend[79].

3.177 New buildings, whether homes or business premises, will be built to a modern standard and many will have fire protection measures incorporated. There is a relationship between the risk of fire and deprivation, but improving living standards which new homes will bring, and greater public awareness of the causes and risks of fire should see a reduction in the number of incidents. It is expected that London will continue to see an overall reduction in the number of incidents attended by the London Fire Brigade up to 2030.

3.178 The LFB looks at when and where incidents have happened in the past to determine the future demand for their emergency response service. The LFB have detailed incident records going back to 2000 and are able to use such data to accurately model and plan for the future. Over the past decade the LFB have been successful in reducing the number of emergency incidents they have to attend (through their community and regulatory safety work). This however does not directly lead to a reduction in the number of staff or vehicles they need as the complexity of incidents has increased and the risks faced are more significant. The LFB regularly review the different requirements they have for their vehicles and their staffing arrangements that give the greatest flexibility in providing cover and resilience.

b) Fire services infrastructure provision

3.179 The London Fire Brigade (LFB) are a London-wide service and they locate their fleet of emergency response vehicles where they can offer the best protection to London as a whole. Local fire stations can provide people with emergency cover. However, it is often that vehicles come from a number of surrounding stations. The LFB aims to reach most emergency incidents in less than six minutes.

3.180 The LFB's Asset Management Plan describes the intentions for the location and regeneration of fire stations in London. This is based on modelling work which has identified the best locations for fire stations (and the number of vehicles they need to accommodate) and a detailed review of the LFB's property estate.

3.181 The 2009 Asset Management Plan identified 30 priorities for property improvement. Of these, 19 priorities are currently addressed – 9 replacement fire stations as part of a Private Finance Initiative (PFI) project (Dagenham, Dockhead, Leytonstone, Old Kent Road, Orpington, Mitcham, Plaistow, Purley and Shadwell), Harold Hill (construction completed) and Walthamstow (construction underway), and a new site to replace West Norwood fire station (subject to planning permission). 3 stations are awaiting potential development proposals as part of the LFB's Corporate Property Project (Lambeth, Kentish Town and Clerkenwell) and 4 stations have been included in the Capital Programme (Deptford, Holloway, Plumstead and East Ham) for either rebuild or refurbishment.

[79] Fourth London Safety Plan 2010/2013

c) Fire services infrastructure funding and delivery

3.182 The 9 replacement fire stations are funded through £57.4m of PFI credits secured in 2006. The level of capital investment required to address essential estate works is £141m over the next 10 years and is summarised as follows: Maintenance improvement work identified from a condition surveys is £87m. Assuming 20% of the works identified will be funded from revenue, the indicative financial requirement to address the backlog is estimated at £70m:

- £49.3m for improved functionality and condition at Plumstead, Woolwich, West Norwood, Brixton, New Cross, East Ham, Heathrow and Hendon fire stations;
- £21.7m for committed works included in the Capital Programme for 2011/12 and beyond.

These costs assume that the PFI programme proceeds and is based on temporary fire stations not being required and any alternative site purchases will be matched by disposal of existing sites. Responding to this total expenditure of £141m requires an on-going capital programme (supported by borrowing) together with the receipt anticipated in 2013/14 from the sale of 8 Albert Embankment (the former HQ building).

GREEN INFRASTRUCTURE

3.183 London’s green infrastructure is identified through the All London Green Grid Supplementary Planning Guidance (ALGG SPG)[80] and a series of ALGG Area Frameworks. The ALGG SPG provides an overview of strategic green infrastructure opportunities for each area. The Area Frameworks describe area objectives and the projects and initiatives that will deliver London’s green infrastructure. Together they provide a green infrastructure strategy for London, providing guidance and a spatial framework for London-wide green infrastructure and promoting partnership working across 11 established Green Grid area groups within London and beyond via Green Arc Partnerships.

a) Strategic green infrastructure

3.184 The definition of green infrastructure is a multi-functional interdependent network of open and green spaces and green features (eg green roofs). It includes the Blue Ribbon Network (the network of London’s waterways) but excludes the hard surfaced public realm. Its multi-functionality is a key characteristic of green infrastructure: Green infrastructure can be beneficial for and/or have synergies with mitigation/adaptation to climate change, biodiversity, landscape, heritage, water management, recreation and tourism, transport, health and education, and food production

3.85 Trees and woodlands are an important element of green infrastructure in London. In recognition of the benefits of good management of this resource as an ‘urban forest’, supplementary guidance has been published to foster a more integrated approach to long term management of this affair.

3.186 To help drive forward the implementation of green infrastructure, the Mayor has set targets of an additional two million trees over the whole of London by 2025[81], and an increase in the amount of surface greened in the Central Activities Zone by at least 5% by 2030.

b) Green infrastructure need

3.187 The London Strategic Parks report[82] identified areas of deficiency for London in both Regional and Metropolitan Parks and identified the need to encourage the development of networks of open spaces to meet strategic open space

[80] The ALGG SPG is available for download at http://www.london.gov.uk/publications

[81] Mayor of London, London Plan 2011, p. 239

[82] http://www.london.gov.uk/archive/mayor/planning/parks/index.jsp

requirements, and promote cross-borough coordination in implementing proposals for new or improved Regional and Metropolitan Parks.

3.188 Borough Open Space Strategies provide the evidence base for identifying local needs and provision. The London Plan sets out in Table 7.2 benchmarks for access to public open space to assist boroughs in setting local standards in their Open Space Strategies. Figures 17 and 18 illustrate deficiencies in public open space and access to nature.

3.189 In central London, in particular, green infrastructure has been identified as a key mechanism for addressing issues of overheating and surface water flooding. It is expected that green roofs will be the main mechanism for meeting this target.

3.190 Improving the quality of green infrastructure is a key issue. In recent years there has been significant new investment in the look and feel of parks and green spaces across London. The ALGG aims to ensure these investments, and future investments, also enhance the functionality of the spaces to demonstrate that continued investment and maintenance delivers a wide range of environmental, social and economic benefits, and is therefore a key to delivering sustainable development.

c) Green infrastructure provision

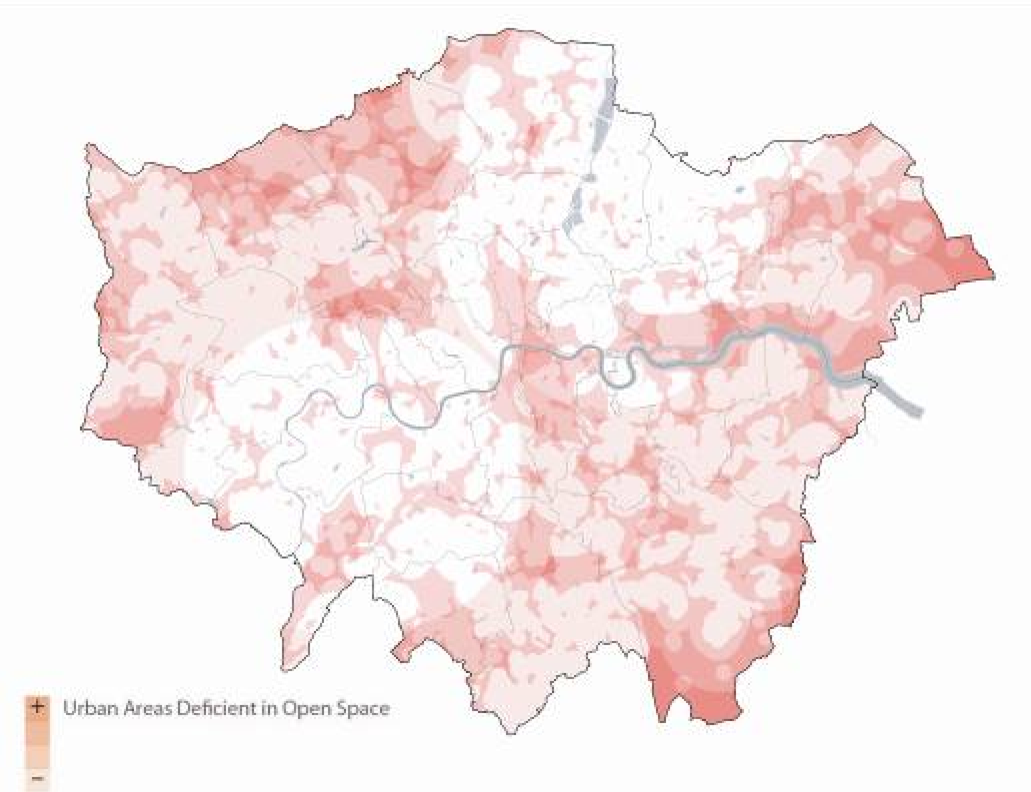
3.191 As part of the ALGG 11 Green Grid Areas have been established (Figure 19). Key types of opportunities recognising the range of functions of green infrastructure across the different areas include:

- The delivery of new strategic parks and open spaces and connections between them, promoting a range of benefits, including health and well-being.
- The improvement of facilities, attractions (including heritage and landscape features), views and routes for walking and cycling to ensure better recreational/tourism values.
- The creation, restoration and improved management of green infrastructure to ensure better ecological, landscape, climate change adaptation and sustainable food production outcomes.
- The integration of green infrastructure into development and regeneration schemes, promoting quality of life.

3.192 There are opportunities of specific strategic importance and/or a specific nature that have been identified through the ALGG process (e.g. schemes that require significant physical investment/funding). For example, one of the key pieces of strategic green infrastructure so far identified is the Wandle Valley Regional Park. The boroughs of Wandsworth, Croydon, Sutton and Merton have developed with the Mayor and other key partners such as the Environment Agency, the Wandle Forum and the National Trust, a governance framework for the regional park.

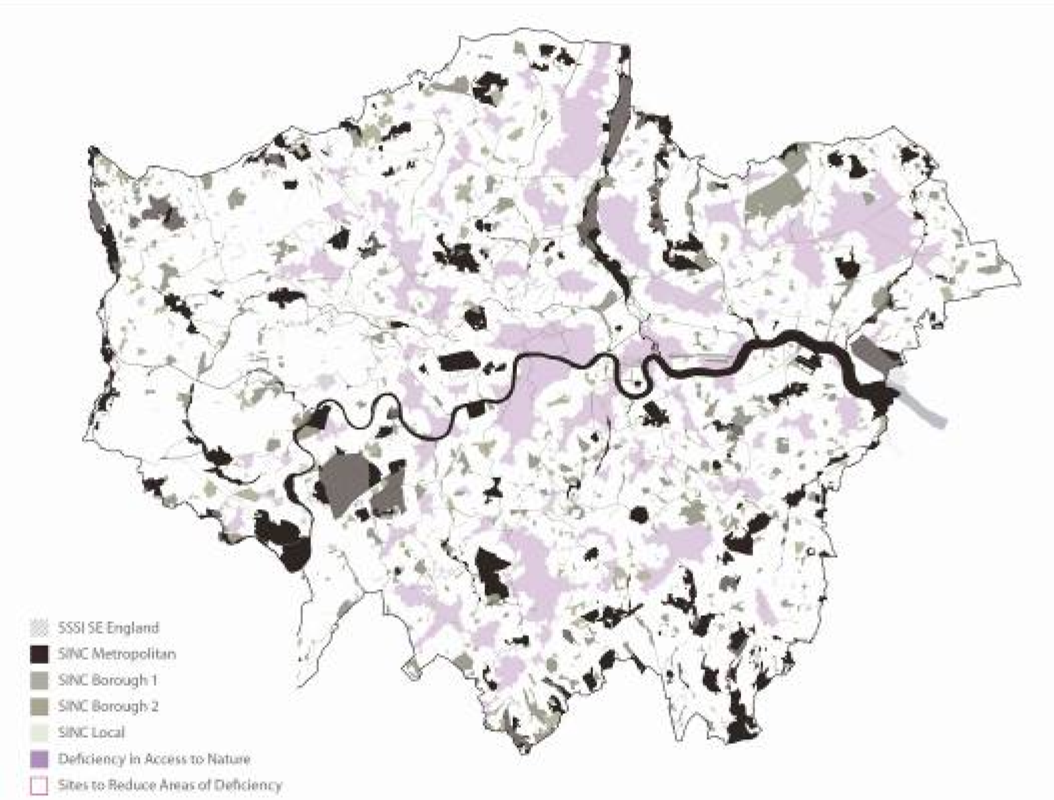
3.193 Green infrastructure continues across the boundaries of London to the areas beyond and in London’s urban fringe. The Green Arc partnership of neighbouring counties, in particular in North East London, with the GLA and key stakeholders such as the City of London and Natural England, are seeking to further develop ways of working to create a well-connected and accessible countryside around London. The Lee Valley Regional Park, Epping Forest and the Forestry Commission at Thames Chase Community Forest are especially significant areas for London.

Figure 17: Open space deficiency plan



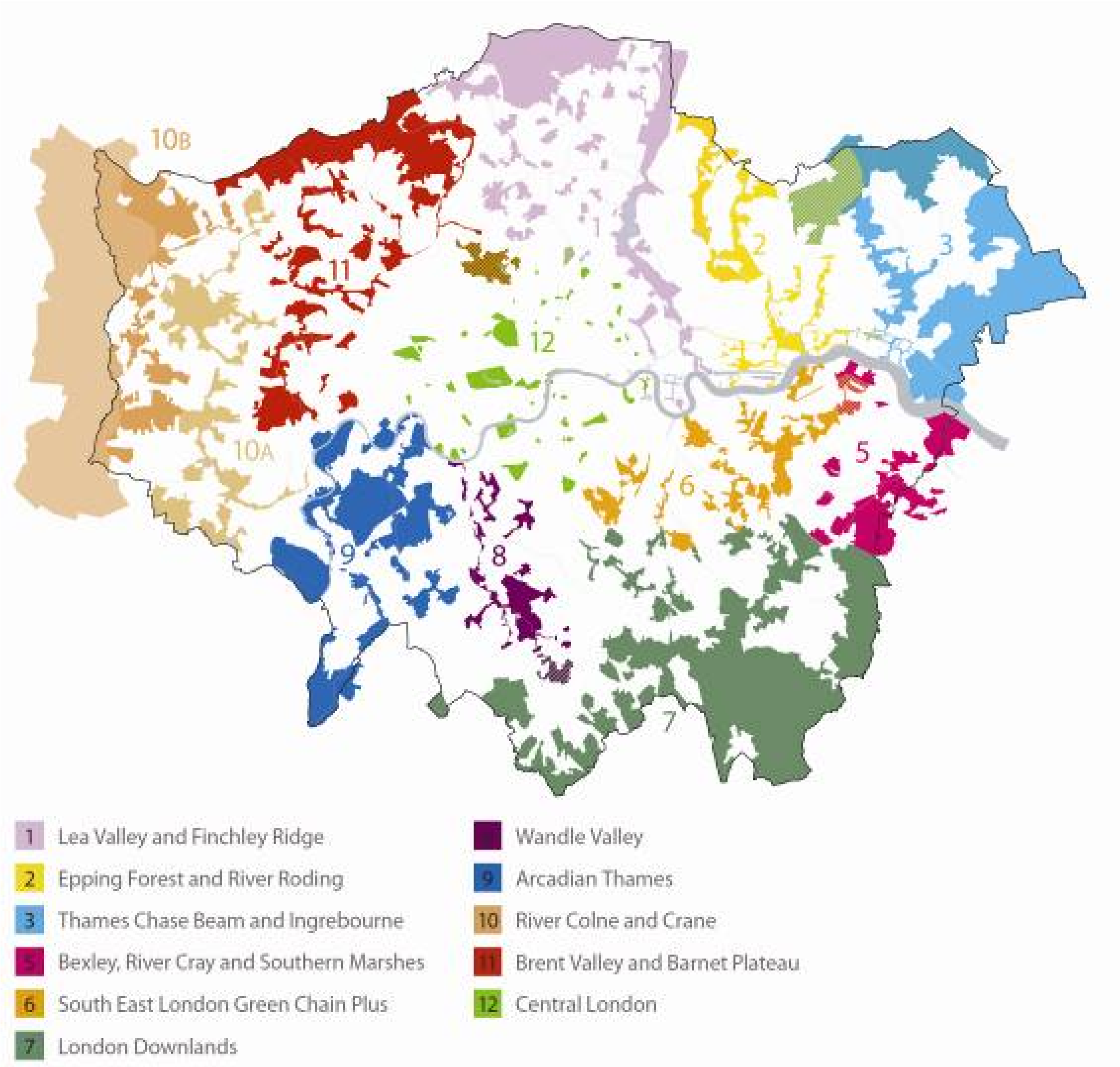
Source: ALGG SPG

Figure 18: Access to nature



Source: ALGG SPG

Figure 19: Green Grid Governance Areas



Source: ALGG SPG

c) Green infrastructure funding and delivery

3.194 The precursor to the ALGG was the East London Green Grid. Many of the projects identified in this sub region received funding through the Government's Thames Gateway Parklands initiative. In the current economic climate it is unlikely that similar levels of resource will be available directly from the public purse for the expanded ALGG.

3.195 However, alternative funding streams and new ways of resourcing green infrastructure are being explored as part of the ongoing development of the green infrastructure concept. Quantifying the costs and benefits of investing in green infrastructure is one of the key objectives of the Government's recently launched Green Infrastructure Partnership[83]. This will highlight the multi-functional nature of green infrastructure, which means the opportunity to be provided and resourced as a component of, or complementary to, other infrastructure and services such as flood and water management, transport and public health.

3.196 Mayor's direct delivery programme for the ALGG is via his London's Great Outdoors initiative and includes the Mayor's Street Trees initiative and his Pocket Parks fund. It also includes: the former Help a London Park programme; the 'Big Green' fund, which will support a number of exemplary strategic scale projects or clusters of projects; other green space enhancements delivered through Transport for London's public realm programme; the Outer London Fund and the Mayor's Regeneration Fund. These have and will continue to enable Londoners to gain access better quality spaces; increasing opportunities for coming together, relaxing and playing; for healthy living, food growing and a little more contact with nature.

3.197 The Mayor is far from alone in providing support for green infrastructure across London. Stakeholder programmes that are helping to deliver the ALGG include: Heritage Lottery Fund's Parks for People as well as Landscape Partnerships funds; the Environment Agency's river restoration programme; and funding secured by a wide range of third sector organisations to deliver a wide range of nature conservation, food-growing and tree-planting projects.

3.198 The supplementary guidance on preparing tree and woodland strategies, advocates the incorporation of the valuation of these assets as a mechanism for identify their full value to communities. In London the Capital Asset Valuation for Amenity Trees (CAVAT)[84] is followed by TfL and a number of boroughs, and the i-tree[85] methodology has also been used. It is hoped to extend the use of i-tree across London.

3.199 Developer contributions are of high importance to the funding of green infrastructure: London Plan Policy 5.10 requires major developments within the CAZ to contribute to green infrastructure towards the Mayor's target and Policy 2.18 requires developments in deficiency areas for Regional or Metropolitan Parks to contribute appropriate elements of green infrastructure. Boroughs may also consider the inclusion of green infrastructure investment into a local Community Infrastructure Fund (CIL).

3.200 The Opportunity Areas and large-scale regeneration schemes provide specific opportunities for the integration of green infrastructure from the outset.

3.201 A key issue for green infrastructure is the cost of maintenance as well as the original capital expenditure. The London Parks and Green Spaces Forum and the London Benchmarking Group have developed an annual benchmarking

[83] http://www.defra.gov.uk/environment/natural/green-infrastructure/

[84] CAVAT - Capital Asset Valuation for Amenity Trees. 2010. London Tree Officers Association

[85] Green Benefits in Victoria, Victoria BID June 2012

survey to monitor and compare the costs of managing parks and green spaces. Figures are generally collected on a borough basis with a breakdown of different types of maintenance regime. Data for 2011/2012 is currently being collected.

3.202 Increasingly, park “friends” groups and other community groups are helping to provide volunteers to assist in the maintenance of green spaces. The London Parks and Green Spaces Forum has helped to establish a Friends Network to share best practice. It is likely that volunteers will become a more significant resource for green spaces in the future.

3.203 Innovative thinking and new approaches to the ways green spaces are designed and managed can make a significant contribution to implementing green infrastructure at little or no extra cost. However, lack of appropriate design, management and operational skills is a limiting factor in optimising the benefits provided by a green infrastructure.

CHAPTER 4

FUNDING OPPORTUNITIES

CHAPTER FOUR FUNDING OPPORTUNITIES

4.1 Some funding opportunities are generic, applying across different types of infrastructure and many implementation activities.

4.2 Beyond continued 'mainstream' funding from Central Government, the Mayor's and the boroughs' capital programmes, only the most relevant and/or innovative funding mechanisms that the Mayor intends to pursue are covered and include:

- **Planning Obligations**
  Whilst the CIL could become the principal means of funding infrastructure, it is likely that planning obligations will continue to have an important role with regard to affordable housing, items that are not infrastructure and site-specific requirements. As set out in Policy 8.2, the Mayor will provide guidance for boroughs and other partners on the preparation of frameworks for negotiations on planning obligations in DPDs, reflecting his strategic priorities including affordable housing, transport, climate change, learning and skills, healthcare, child care facilities and small shops. However, the Mayor does recognise the need for realism about the extent to which development can bear the costs of providing infrastructure, particularly in the conditions likely to exist in the early years of the Plan period.

- **Tax Increment Funding (TIF)**
  This is an innovative funding mechanism deploying projected future tax gains of infrastructure and other improvements (in terms of additional business rates) to an area to finance the infrastructure itself. The Government has brought forward legislation that will enable TIF projects to take place, with two possible options with TIF areas being part of the overall retained business rate system or as possible separate areas. The Mayor has strongly supported the latter option. The Government have also committed to examine whether the Mayor and partner authorities could borrow against CIL income and Enterprise Zones, such as in the Royal Docks, provide a source of business rate income to the London Enterprise Partnership for 25 years which could also potentially form a basis for borrowing to fund infrastructure.

- **Accelerated Development Zones**
  The Accelerated Development Zone concept is based on that of TIF and is designed to allow local authorities in defined areas to capture incremental value in the form of tax revenue generated from new development. In order to do this, local government requires the power to retain long-term local tax revenues generated from development, such as business rates, allowing funds to be raised for investments, through securitisation of those revenues.[86]

- **EU Capital Grants**
  Building on the successful application for waste management funding through the JESSICA programme[87], opportunities to apply for similar funding for other significant infrastructure projects could be considered.

- **Incentivisation Schemes**
  The New Homes Bonus was introduced in 2011; the scheme incentivises housing delivery by

[86] LG Futures, Enabling capital investment by London local government, 2010, p 76

[87] Joint European Support for Sustainable Investment in City Areas – an initiative of the EU Commission, in conjunction with the European Investment Bank, to promote sustainable investment, growth and jobs

providing local authorities with funding equal to the national average for the council tax band on each additional property and paid for the following six years as unringfenced grant. The bonus is also paid on empty properties brought back into use and includes an additional £350 for each affordable home. - The Government is also working on business rate reforms to encourage economic development. It is legislating to grant billing authorities (i.e. London boroughs) additional powers to offer discounts on business rates to promote economic development. It has also announced proposals for local authorities to retain all or part of their growth in business rates yield. These initiatives will be introduced by April 2013.

- **Other** potentially relevant funding opportunities include:
    - local government bonds (which were used by TfL to finance £600m of investment in the Tube system between 2004-2006)
    - the Private Finance Initiative (subject to a robust evaluation to ensure value for money and government support)
    - encouraging local government pension funds to invest in delivering infrastructure projects
    - placing local authority assets into special purpose vehicles (e.g. local housing companies or urban regeneration companies) to promote investment in partnership with private developers
    - Other central and local funds which could be used to support infrastructure.

  The potential for their application to support the implementation of the Plan and the required infrastructure has to be investigated further.

4.3 At least the early part of the period covered by the London Plan is likely to see significant constraints on public expenditure, with fewer resources available for infrastructure and other provision needed to support the growth identified in the London Plan. However, the London Plan does not dependent upon a particular level of short-term public spending, and there is the flexibility to revisit the phasing of required expenditure and to deliver the policies in ways that minimise public money. This can be addressed in future iterations of the Implementation Plan.

4.4 The Mayor is seeking greater financial independence and aims to influence Government on its review of local Government finance that started in summer 2011. In particular he would like to see changes to the criteria for funding allocation recognising the generation of outputs and tax income, which are significantly higher in London than in all other parts of the country. Currently it is only based on expenditure need. This is also of importance as the density of development in London creates an added imperative for investment because the downside risks of breakdown are so much greater in a large, crowded, city than elsewhere in the country.[88] The London Finance Commission has been set up by the Mayor to look at new ways of devolving funding to London. Comprising a number of experts, the Commission will examine the potential for greater devolution of both taxation and the control of resources (capital and revenue) to improve the tax and public spending arrangements for London. It will report to the Mayor in Spring 2013.

[88] GLA Economics, Public Spending Priorities in London, 2010

CHAPTER 5

CONCLUSIONS AND LOOKING AHEAD

CHAPTER FIVE CONCLUSIONS AND LOOKING AHEAD

Conclusions

5.1 Overall this Implementation Plan provides a clear overview of implementation mechanisms across all the policies of the Plan. It highlights the need for cooperation with a wide range of partners, and already during the preparation of this draft, it has served as a platform for discussions between stakeholders. In the light of the potential changes in public funding an even greater focus on the effective management of existing assets and saving of natural resources is required. Timescales and ways of implementation may also have to be reconsidered.

5.2 In terms of strategic infrastructure this Implementation Plan also provides a robust baseline. However, a lot of further work is required to establish potential deficits in provision over the long-term and how they could be addressed. Available information varies significantly between different types of strategic infrastructure. On this basis the following initial conclusions can be drawn for the different types of strategic infrastructure:

Transport

5.3 Amongst other schemes, Crossrail, the Northern and Sub-Surface lines upgrades and the Thameslink upgrade will be delivered in the short to medium term, providing a substantial increase in rail capacity and reliability. TfL is also beginning a major upgrade of London’s roads which will start by targeting congestion black-spots and improving safety for all road users. TfL’s latest draft Business Plan for the period until 2020 continues to address the key challenges facing London’s transport. TfL will continue to work with the Department for Transport and HM Treasury to ensure the funding is available to support the growth of London’s economy.

Water

5.4 Significant investment is underway/planned to improve London's water quality - wastewater treatment works upgrades, the Thames and the Lee Tunnel. Further investment will be required to accommodate growth until 2031. The water companies WRMPs provide an overview of required water supply infrastructure for the medium term. In terms of flood risk, the Environment Agency's Thames Estuary 2100 project sets out the long-term strategy for flood risk management on the tidal Thames and was published in November 2012 following Government sign-off. Investigations into particularly high surface water flood risk areas across London are also underway and supported by the Drain London project.

Energy

5.5 Spare electricity capacity in London is significantly diminishing and there are constraints to longer-term investment. The establishment of a High-level Working Group - as part of the Mayoral initiative on electricity - seeks to facilitate closer cooperation between key stakeholders to promote sustainable levels of investment in the delivery of London’s electricity infrastructure when and where required. In terms of London's gas infrastructure significant investment is taking place to replace aging pipes. Scottish & Southern Energy Power Distribution and Southern Gas Distribution still have to be approached to get a more comprehensive overview of electricity and gas provision. Decentralised energy opportunities should be realised in the light of the Mayor’s carbon reduction targets.

Telecommunications

5.6 London's global competitiveness depends on fast-growing telecommunications infrastructure. Super-fast broadband is being rolled out across London in the short term and this is supported by Government funding. It will have to be ensured that required investment is also taking place in areas with comparatively few residential customers. BT's key competitors in London still have to be approached to get a more comprehensive overview of broadband provision.

Waste

5.7 The London Plan's aspiration to minimise the export of waste by managing the equivalent of 100% of the capital's waste within its boundaries as is practicable by 2031 is challenging but achievable. The GLA and the London Waste and Recycling Board (LWARB) have made a good start in estimating the required capacity and cost of dealing with municipal waste management, and channelling financial support to key infrastructure. More work needs to be done to fully capture and address the infrastructure requirements of commercial/industrial and construction, demolition and excavation waste.

Social Infrastructure

5.8 Planning of new social infrastructure facilities in London is complex with a service delivery landscape constantly changing and different types of social infrastructure facing different challenges: London is facing a severe shortage of school places and Free Schools can play an important role in addressing this shortage. Demand for places at higher education institutions in London are projected to increase; however change to tuition fees for domestic students and more specifically London and immigration policy to address non-economic routes of migration into the UK are not factored in those projections. Increasing demand for healthcare services, coupled with shifting care closer to home and out of hospitals, will place greater pressure on primary and community care. Local assessments of needs and Joint Health and Wellbeing Strategies will inform GP commissioning plans and support the integration of delivery. Demand and supply for sports facilities are broadly in balance at the Londonwide level. However, there are some variations or 'hot spots' within each sub region. Coordination and prioritisation of investments will be essential. The modernisation of the police estate including 'strategic' policing facilities will help respond to the challenges of the dynamic nature of the sector. As regards to fire stations, it is expected that London will continue to see an overall reduction in the number of incidents up to 2030.

Green Infrastructure

5.9 The All London Green Grid SPG provides an overview of strategic green infrastructure need and provision in London. For green infrastructure it is particularly important that synergies with the provision of other infrastructure and services are sought.

5.10 **Underground infrastructure** raises specific cross-cutting issues: This includes surface road transport disruption caused by underground works for water, energy, telecommunications infrastructure and the complexities but also potential synergies between underground infrastructure for transport, water, energy, telecommunications infrastructure.

Looking ahead

5.11 Beyond its function as an overview and baseline of implementation actions and strategic infrastructure over time the Implementation Plan should become a tool to help coordinate and promote the delivery of these implementation actions and strategic infrastructure requirements across London.

5.12 The strategic infrastructure part could for example inform the Mayor's response to related borough planning documents including Core Strategies, Infrastructure Delivery Plans (IDPs) and CIL Charging Schedules. It could also help ensuring that land for strategic infrastructure at is allocated at the local level.

5.13 The **Implementation Group** will over time establish its role in supporting the revisions of the Implementation Plan. It will also be a useful forum to share expertise and enable cooperation between its members and beyond. This could be important in the light of the demonstrated complexity of implementation planning and the lack of capacity of public sector planning staff in this area. The group may also help to identify aspects that are of importance in policy terms and should be considered for the next London Plan review. Work on a comprehensive Further Alterations document is expected to start during 2013.

5.14 There is a clear link between the Implementation Plan and the **Annual Monitoring Report** (AMR). Whilst the latter looks at past performances to identify trends, the Implementation Plan is focusing on current and future actions to facilitate policy implementation and improvements. However, the regular updating of the Implementation Plan provides a monitoring mechanism in itself indicating if the identified actions are carried out and adding further action to support policies and strategic infrastructure required. A lack of implementation mechanisms for certain policies or infrastructure requirements could also be identified linking this Implementation Plan similarly to the AMR back to the review of policy. The AMR will continue to be published annually at the end of February whilst the Implementation Plan will be updated every summer. This will allow them to inform each other where appropriate.

5.15 The following **specific issues** lie ahead for the further development and next iteration of the Implementation Plan:

- There is the opportunity to discuss updates and additions with stakeholder groups.
- The Implementation Group will meet once or twice per year, as the differences between the various types of infrastructure would not warrant more frequent meetings, whilst the sub-groups will continue to communicate virtually as and when new data/information for a specific type of infrastructure are emerging.
- The Mayor is planning to undertake further work and mapping the strategic infrastructure required to deliver the optimum level of Opportunity Areas and Areas of Intensification. Only for a few Opportunity Areas (draft) Planning Frameworks have been produced that address strategic infrastructure requirements in detail. The work on the VNEB OAPF is exemplary in this respect and similar studies have been prepared for the Olympic Legacy SPG and White City. This and the infrastructure need and provision for other emerging OAPFs should be informed by the VNEB example and this Implementation Plan and vice versa to ensure some degree of consistency and over time to build up an overview of the cumulative infrastructure requirements of these growth areas.
- The Mayor is considering to promote a common London approach to the production of IDPs and CIL Charging Schedules in close cooperation with the London boroughs. This would also facilitate their application of the Duty to Cooperate. In terms of CIL further guidance could include the infrastructure to be covered, common timescales (short, medium and long-terms), a common approach to cost estimates and information about funding sources.

5.16 The Mayor is also keen to facilitate the co-ordination of underground infrastructure works to minimise disruption on residents and road users. In September 2011, he introduced his 'Roadworks Pledge', which set out the standards Londoners should expect to see adhered to at all works sites in the capital. He recently agreed a strengthened Roadworks Code of Conduct, setting out joint targets for improving the management of roadworks and reducing traffic disruption. The London Permit Scheme for Roadworks is also being introduced across London by April 2013.

5.17 In addition, in June 2012, the Mayor introduced the country's first Lane Rental Scheme, whereby utilities and TfL are charged for undertaking works on the busiest parts of the road network at the busiest times. The Lane Rental Scheme is expected to drive a real change in the way works are planned and undertaken, encouraging the use of innovative working techniques and materials that will enable works promoters to work outside of peak times, or more quickly, to reduce their exposure to lane rental charges, and, therefore, the disruption their works cause road users. A TfL/DfT jointly-funded research project, looking at innovative roadworks techniques and materials, has already identified a number of measures that could be employed across London to significantly reduce the scale and length of works taking place, including the use of quick drying concrete and road plates to allow roads to be re-opened to traffic far sooner or at peak times.

5.18 Any suggestions or questions about the Implementation Plan should be sent to

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ANNEX 1

SUMMARY OF KEY IMPLMENTATION ACTIONS

ANNEX 1
SUMMARY OF KEY IMPLEMENTATION ACTIONS

A1.1 Annex 1 provides an overview of strategic and tangible implementation actions per policy area (sub-divided policy chapters) for the GLA group and key stakeholders. These actions support and facilitate the implementation of the Plan's policies. They are based on a comprehensive overview of the implementation dimension of all policies of the London Plan. For each implementation action, information about responsible delivery bodies, a timescale for delivery and a degree of certainty are provided. It has to be highlighted that the certainty specified for an individual action does not represent a prioritisation. Instead it indicates if there is a strong commitment by the key deliverers or if the action depends on specified circumstances. Each action only appears once - within the most relevant policy area - to avoid duplication. However, every policy an action supports is mentioned.

A1.2 Similar to the main document Annex 1 is work in progress. The actions listed for the different policy areas are not comprehensive and not for all policies implementation actions have been identified yet. In some cases broader overarching policies (such as 1.1, 3.1, 4.1, 6.1 and 7.24) are delivered through other, more specific, policies.

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
LONDON'S PLACES										
The London Context										
PL.1	**Eurocities** - cooperation with other major cities in Europe to promote urban policies	Partnership	2.1	London Europe Office, other Eurocities						Strong commitment
PL.2	**C40 Leadership Group** - sharing good practice on addressing climate change with other world cities	Partnership	2.1	GLA, leaders of participating world cities						Strong commitment
PL.3	**European Funding Programmes** - promoting and assessing London's involvement; possible role for London as a Managing Authority during next programming period	Investment	2.1	GLA, London Councils					Current ERDF funding period until 2013; London's share for next programming period 2014-20 to be allocated in 2013, alongside with the funding priorities	Dependent on Government decision / guidance
PL.4	**Review future of Interregional Form (IRF) -** align approaches within wider South East and lobby for strategic investment	Partnership	2.2	GLA and local authorities in East and South East of England					The Mayor has consulted (Autumn 2012) on options for constructive cross-boundary working in the light of the duty to co-operate	Dependent on discussions with partners in the East/South East
PL.5	**Strategic partnerships -** support development of Growth Areas and Corridors and cross-boundary working on specific issues (e.g. on delivery mechanisms)	Partnership	2.3, 2.5	Sub-regional partnerships including Thames Gateway London Partnership, North London Strategic Alliance, South London Partnership, West London Partnership and bordering counties					The Mayor has consulted (Autumn 2012) on options for constructive cross-boundary working in the light of the duty to co-operate	Dependent on local commitment
Places in London										

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PL.6	**Olympics Legacy SPG** – provide a framework for the development of the legacy area, includes specific chapter on implementation	Strategy / guidance	2.4	GLA					Published July 2012	Strong commitment
PL.7	**Olympics Legacy Communities Scheme -** to inform submission of individual planning applications	Action plan / designations	2.4	Olympic Park Legacy Company working with GLA, boroughs, developers					Leading to individual applications from late 2012 onwards	Strong commitment
PL.8	**Cooperation within/beyond Outer London -** to promote distinct opportunities and transport requirements	Partnership	2.6, 2.7, 2.8	Outer London Commission, boroughs, GLA, developers					2nd Report – published Autumn 2012	Strong commitment but dependent on local commitment
PL.9	**Cooperation within Inner London -** to address deprivation and improve distinct environments	Partnership	2.9	Boroughs, GLA, developers						Dependent on local commitment
PL.10	**Central Activities Zone (CAZ) SPG -** coordinate strategic policies across borough boundaries	Strategy / guidance	2.10, 2.11, 2.12, 4.3	GLA, developers					2013/14	Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale 2010 to 2012	timescale 2013 to 2018	timescale post 2018	timescale on-going	timescale notes	certainty for key deliverers
PL.11	**Opportunity Area Planning Frameworks (OAPF) and Intensification Area Planning Frameworks (IAPF)** provide strategic framework for development, co-ordinate investment decisions of key partners, using amongst other things heritage assets and funds in place shaping. *Further detail on their specific implementation requirements to be explored further*	Action plan / designations	2.13, 7.9	GLA, boroughs, TfL, local communities, developers					2 OAPFs are complete (Olympic Legacy and Vauxhall Nine Elms Battersea) and 7 are underway	Dependent on local commitment
PL.12	**Regeneration Schemes -** include integrated spatial policies and initiatives that bring together regeneration, development and transport proposals with improvements in learning and skills, health, safety, employment, environment and housing implemented through locally-based plans and strategies, particularly in inner London	Investment	2.14, 2.9	Boroughs, GLA Group, Strategic Partnerships, HCA, developers						Dependent on individual circumstances
PL.13	**Compulsory Purchase Orders -** in particular to enable for example regeneration, town centre renewal, wharf re-activation	Action plan / designations	2.14, 2.15, 7.26	GLA Group, boroughs						Dependent on individual circumstances

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
Functional Areas within London										
PL.14	**Town Centre SPG** – give detailed guidance for policies in relation to town centre land uses (retail, leisure, culture, tourism, offices, housing, social infrastructure and mixed use development) *Further detail on their specific implementation requirements to be explored further*	Strategy / guidance	2.15, 2.16, 4.2, 4.5-4.9	GLA, developers					2013	Strong commitment
PL.15	**London wide town centre health check -** provide a 'snapshot' of the health of over 200 of London's town centres using a selection of strategic health check indicators and illustrate how these have changed over time	Research / assessment	2.15, 4.6, 4.7, 4.9	GLA group, boroughs					2013, update every 4 years	Strong commitment
PL.16	**Borough town centre health checks -** aims to monitor the vitality and viability of town centres and provides detailed analysis of the town centres within individual borough**s**	Research / assessment	2.15, 4.7, 4.9	Boroughs						Strong commitment
PL.17	**Provision of Shopmobility schemes -** improve access to goods and services for older and disabled Londoners	Investment	2.15	Boroughs (and in cooperation with charities, BIDS and Town Centre Managers), local shopping centres and retailers, the National Federation of Shopmobility UK						Dependent on individual circumstances

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PL.18	**Business Improvement Districts (BIDs)** - levy payment and other voluntary contributions to support and encourage town centre management and regeneration	Action plan / designations	2.14, 2.15	Boroughs, Design for London, London and national BIDs Advisory services,						Dependent on local commitment
PL.19	**Identification of Strategic Outer London Development Centres (SOLDCs) and guidance** - for areas with one or more strategic economic functions of greater than sub-regional importance, also informing Town Centres SPG	Action plan / designations	2.6, 2.7, 2.8, 2.16	Outer London Commission, GLA, boroughs, sub-regional partnerships						Strong commitment
PL.20	**The Big Green Fund –** supporting strategic greenspace projects nominated by All London Green Grid Partnerships	Investment	2.18, 5.10	GLA, All London Green Grid Partnerships					Launched Dec 2012, ongoing to March 2015	Strong commitment
PL.21	**All London Green Grid SPG** - to offer London-wide guidance on Area Frameworks to develop local priority projects	Strategy / guidance	2.18	GLA, boroughs					Published March 2012	Strong commitment
PL.22	**Area Frameworks -** overview of projects in the area such as Wandle Valley Regional Park, being developed as part of All London Green Grid	Action plan / designations	2.18	Boroughs, GLA, Design for London - working with Environment Agency, TfL, Groundwork London, All London Green Grid Partnerships					Published Dec 2012	Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PL.23	**Regional Parks -** addressing deficiencies**,** especially the Wandle Valley Regional Park	Investment	2.18	LB Wandsworth, Croydon, Sutton, Merton, Environment Agency, Groundwork London, LPGSF, TfL, National Trust, Wandle Forum, South London Partnership					Ongoing – interim CEO appointed in Nov 2011	Dependent on resources
PL.24	**Green Arc -** to create and protect recreational landscape of well protected and accessible countryside in the urban fringe around London. Links with All London Green Grid project	Action plan / designations	2.18	GLA, boroughs, Natural England, surrounding county councils, Lee Valley Regional Park Authority						Dependent on resources
LONDON'S PEOPLE										
Equalities										
PE.1	**Implement Economic Development Strategy** - support Londoners to enter and sustain employment	Strategy / guidance	4.12	GLA Group and other London stakeholders						Dependent on resources
PE.2	**Improve cooperation between GLA and NHS London** - to reduce health inequalities and improve the health of all Londoners.	Partnership	3.2	GLA, NHS London						Dependent on better partnership working
PE.3	**Health Impact Assessment (HIA)** - for major applications and OAPFs and review progress	Research / assessment	3.2	GLA, boroughs, developers						Dependent on resources and on local commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PE.4	**Implement Health Inequalities Strategy and its action plan -** by setting up plans and actions that contribute to Objective Five: Healthy Places	Strategy / guidance	3.2	GLA						Strong commitment
PE.5	**Update Best Practice Guide on Planning for Health in London -** to give greater emphasis to health inequalities and to better support and improve planning decisions	Strategy / guidance	3.2	London Councils, GLA, Hudu					2012	Dependent on resources
Housing										
PE.6	**Strategic Housing Land Availability Assessment**	Research / assessment	3.3	Boroughs, developers and landowners					2013/14	Strong commitment
PE.7	**Local Annual Monitoring Reports -** updating local housing trajectories	Research / assessment	3.3	Boroughs					Annually	Statutory requirement
PE.8	**Housing SPG -** guidance on delivering increased housing output including guidance on housing design, affordability and social infrastructure requirements	Strategy / guidance	3.3, 3.4. 3.5, 3.7, 3.8. 3.10, 3.12, 3.13, 3.16 -3.19, 7.4	GLA					Published Nov 2012	Strong commitment
PE.9	**Density Matrix -** guidance for boroughs - can be refined in light of local circumstances regarding transport capacities, local character, infrastructure needs and provision for play and open space	Strategy / guidance	3.4	Boroughs					2014	Dependent on local commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PE.10	**London Housing Design Guide -** at the core of the guide are new minimum space standards, also advocates improvements in the development and procurement process so that design remains valued from vision to delivery	Strategy / guidance	3.5	GLA, HCA					2010	Strong commitment
PE.11	**Shaping Neighbourhoods - Children and young people's play and recreation SPG -** guidance to boroughs on providing for the play and recreation needs of children and young people and the use of benchmark standards in the preparation of Play Strategies	Strategy / guidance	3.6	GLA					Published Sept 2012	Strong commitment
PE.12	**Play Strategies -** strategies to identify play space requirements and mechanisms for ensuring access to high quality play spaces and facilities	Strategy / guidance	3.6	Boroughs					Ongoing as part of Local Plans	Dependent on resources
PE.13	**Planning Framework -** for sites over 5 hectares or capable of accommodating 500 dwellings	Strategy / guidance	3.7	Developers						Strong commitment
PE.14	**Update London wide Strategic Housing Market Assessment**	Research / assessment	3.8, 3.12	GLA					2014	Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PE.15	**Sub regional Strategic Housing Market Assessments -** to identify housing requirements	Research / assessment	3.8, 3.12	Boroughs, sub regional partners, GLA					Completed 2011/12	Strong commitment
PE.16	**Update Best Practice Guide on Wheelchair Accessible Housing -** for boroughs and developers. Advice to be incorporated into Annex 2.2 of Housing SPG	Strategy / guidance	3.8	GLA					2010/11	Dependent on resources
PE.17	**Programming of bringing vacant properties back into use -** part of Mayor's Housing Strategy - investment through the Targeted Funding Stream from HCA London to boroughs	Investment	3.15	Boroughs, GLA, RSLs, HCA London, CLG, developers					Spring 2011	Strong commitment
PE.18	**Local Annual Housing Improvement Programme (HIP) -** improvement programme for all local authority homes to the Decent Homes Standard, purpose to inform local housing strategies, allows comparisons across the region and monitor central government developments	Strategy / guidance	3.15	CLG, boroughs, GLA					Annually	Dependent on local commitment
Affordable housing										
PE.19	**Economic viability assessment of affordable housing** - to inform local targets	Research / assessment	3.12	Boroughs, GLA					During local plan preparation	Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PE.20	**Update to affordable housing toolkit** - to assist in appraising the viability of schemes	Strategy / guidance	3.13	GLA, HCA					2013	Strong commitment
PE.21	**Affordable housing toolkit assessments -** toolkit is designed to indicate the financial viability of developments in order to act as a starting point to negotiating Section 106 agreements	Research / assessment	3.13	Developers					On submission of applications	Strong commitment
PE.22	**HCA London Investment Programme -** for affordable housing	Investment	3.13	HCA London, developers, boroughs					2015/16	Dependent on resources
PE.23	**Mayor's Housing Strategy -** includes commitment to delivery affordable homes	Strategy / guidance	3.13	GLA					2013	Strong commitment
PE.24	**Thresholds in Local Development Frameworks -** for affordable housing	Strategy / guidance	3.14	Boroughs, GLA						Strong commitment
Social infrastructure										
PE.25	**Extend proposed guidance Shaping Neighbourhoods - Lifetime Neighbourhoods and Neighbourhood Planning SPGs** - social infrastructure requirements **-** especially at the sub-regional and Londonwide level	Strategy / guidance	3.16, 3.17	GLA, Hudu, boroughs, NLSA					2013	Dependent on resources

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PE.26	**MPA/MPS Estate Strategy -** provide the strategic framework for the management of their estates	Strategy / guidance	3.16	MPA/MPS					2013	Strong commitment
PE.27	**Partnership working for new health facilities -** coordination of planning and needs	Partnership	3.17	GLA, NHS London, boroughs, PCTs, Hudu						Dependent on Government decision / guidance
PE.28	**London Academic Forum -** address a wide range of issues which bear on London's economic sector and its relationship with the capital	Partnership	3.8, 3.18	GLA, boroughs, London HEIs, developers, entrepreneurs					2013	Strong commitment
PE.29	**Londonwide Sports Facilities Strategy -** building on completed analysis	Strategy / guidance	3.2, 3.19	GLA, boroughs, Sport England						Dependent on resources
LONDON'S ECONOMY										
Employment land										
EC.1	**London Office Policy Review -** regular monitoring of the London Office Market	Research / assessment	4.2	GLA					Regularly – latest update published Sept 2012	Strong commitment
EC.2	**London Office Review Panel (LORP)** - review of office market, trends and prospects with expert panel	Research / assessment	4.2	GLA					Regularly	Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
EC.3	**Industrial demand study - ** to complement supply side study and provide update of industrial land release benchmarks and borough categorisations	Research / assessment	2.17, 4.4	GLA, TfL, boroughs, property agents					2011	Strong commitment
EC.4	**Land for Industry, Employment and Transport SPG -** guidance on investment and land management for industrial land as well as land for transport and utilities, and revised benchmarks for release to other uses	Strategy / guidance	2.17, 4.4, 6.2, 7.26, 5.17, 5.14	GLA					Published Sept 2012	Strong commitment
Tourism and culture										
EC.5	**Tourism marketing and promotion –** London & Partners to work with local networks to develop and promote outer London tourism products	Partnership	4.5	London & Partners, tourism and regeneration partnerships, Tourism for All						Dependent on resources
EC.6	**Green Tourism Scheme - ** certification scheme to improve tourism businesses' environmental performance and local supplier networks	Strategy / guidance	4.5	Green Business UK, business operators, Visit London,						Dependent on individual circumstances
EC.7	**Hotel Demand Study** – inform policy and guidance on visitor accommodation related issues	Research / assessment	4.5	GLA					2013	Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
EC.8	**Accessible Hotels in London Study -** advice to boroughs and developers on the provision of wheelchair accessible hotel bedrooms. Advice to be incorporated into Town Centres SPG as appendix C.	Research / assessment	4.5	GLA, boroughs, hotel operators and developers					2011/12	Strong commitment
EC.9	**Local evidence base for night-time economy -** understand nature and scale of local night-time activities to improve planning and management	Research / assessment	4.6	Boroughs, developers						Dependent on resources
EC.10	**Identify sites for Cultural Quarters -** designate places to accommodate new arts, cultural and leisure activities as the basis for exploring the potential for leisure offers of wider importance	Action plan / designations	4.6	Boroughs, GLA, London & Partners, cultural agencies, tourism and regeneration partnerships, Sport England					Ongoing through local plans	Dependent on local commitment
Retail and emerging economic sectors										
EC.11	**Strategic retail needs assessment -** London wide retail needs study to inform strategic retail planning	Research / assessment	4.7	GLA					Every 4-5 years	Strong commitment
EC.12	**Local retail needs assessment -** detailed retail needs study to inform retail planning policies in LDFs and Town Centre Strategies	Research / assessment	4.7	Boroughs					Ongoing through local plans	Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
EC.13	**London's retail street market study -** provides a spatial and economic analysis of London's retail street markets and presents key trends affecting sector	Research / assessment	4.8	GLA					2010	Strong commitment
EC.14	**Explore Green Enterprise Districts -** (London Riverside/Upper Lea) - through Opportunity Area Planning Frameworks	Action plan / designations	4.10	GLA, boroughs, developers					OAPFs are underway	Strong commitment
LONDON'S RESPONSE TO CLIMATE CHANGE										
Climate change mitigation										
CC.1	**Delivering London's Energy Future: the Mayor's climate change mitigation and energy strategy -** programmes to achieve the Mayor's 60% CO_2 reduction target by 2025	Strategy / guidance	5.1, 5.4, 5.5, 5.7, 5.8, 5.9, 5.10, 5.11	GLA, TfL, boroughs, business sector					Published October 2011	Strong commitment
CC.2	**C-Change project -** Interreg-funded cooperation with cities in North West Europe to address climate change issues	Partnership	2.1, 5.1	GLA, Groundwork London, international project partners						Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
CC.3	**Negotiation with developers to achieve zero-carbon developments –** with interim targets to achieve a 25% improvement on the Building Regulations for 2010-2013 and 40% for 2013-2016 in both new build residential and non-domestic buildings	Partnership	5.2 to 5.7	Developers, GLA, boroughs, DCLG, DECC					All housing zero carbon by 2016 and non-domestic development by 2019	Strong commitment
CC.4	**Sustainable Design and Construction SPG –** guidance setting out improved environmental performance of new buildings	Strategy / guidance	5.1 to 5.15, 5.17, 7.14, 7.15	GLA, boroughs					2013	Strong commitment
CC.5	**Mayor's retrofit programmes – RE:CONNECT, RE:FIT and RE:NEW** - improve environmental performance of identified areas, existing public sector buildings, existing homes: RE:CONNECT: 10 low carbon zones, each of which has signed-up to deliver a 20.12% reduction in CO2 emissions by 2012, RE:NEW: 1.2 million homes by 2015, RE:FIT: 40 % of public sector floor space retrofitted by 2025	Action plan / designations	3.15, 5.1, 5.4, 5.7	GLA						Dependent on resources

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
CC.6	**Decentralised Energy Programme Delivery Unit -** supporting the commercialisation of large-scale decentralised energy projects by offering commercial and legal advice and helping to secure the investment needed to deliver large scale projects	Strategy / guidance / partnership	5.5, 5.6	GLA, boroughs, developers, energy providers						Dependent on individual projects
CC.7	**London Hydrogen Partnerships Action Plan -** to facilitate the development of the hydrogen market through support for transport and stationary fuel cell applications	Action plan / designations	5.8	GLA						Dependent on resources
Climate change adaptation										
CC.8	**Managing risks and increasing resilience: the Mayor's climate change adaptation strategy** – address flooding, drought and overheating	Strategy / guidance	5.9 to 5.15	GLA					Published October 2011	Strong commitment
CC.9	**LUCID project -** modelling interaction between London's land cover and urban heat island	Research / assessment	5.9	Wide partnership, led by University College London					2011	Strong commitment
CC.10	**Urban Greening Initiative -** includes Mayor's initiatives on 10,000 street trees and green roofs	Research / assessment	2.18, 5.10, 5.11, 5.13	GLA, Greenspace Information for Greater London (GIGL), Forestry Commission, DEFRA						Dependent on resources

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
CC.11	**Regional Flood Risk Appraisal -** maintain up-to-date with key flood risk issues/areas	Strategy / guidance	5.12	GLA, Environment Agency, boroughs					Next update 2013	Strong commitment
CC.12	**Thames Estuary 2100 and Catchment Flood Management Plans Implementation -** implement long-term flood risk management policies	Strategy / guidance	5.12	Environment Agency, boroughs, landowners					2010 (Thames CFMP), 2012 (TE2100) - reviews as necessary	Strong commitment
CC.13	**Cooperation with Emergency Planning -** improve understanding of safety of developments	Partnership	5.12	GLA, LFEPA, boroughs						Dependent on better partnership working
CC.14	**Surface Water Management Plan -** address flooding from surface water and borough requirement to produce Preliminary Flood Risk Assessments, Maps of Flood Risk Areas and Flood Hazard Maps.	Research / assessment	5.10, 5.11, 5.12, 5.13	Drain London Partners, boroughs, GLA, Environment Agency, Thames Water, TfL, London Councils					Completion 2012	Strong commitment
CC.15	**Thames Tideway Sewer Tunnels -** prevent sewer overflow	Investment	5.14	Thames Water					By 2015 (Lee Tunnel) and 2023 (Thames Tunnel)	Strong commitment
CC.16	**Wastewater Treatments Works Upgrades -** improve capacity and performance	Investment	5.14	Thames Water					5 completed by 2014, Deephams by 2020	Strong commitment
CC.17	**River Basin Management Plan -** improve water environment	Strategy / guidance	5.14, 7.28	Environment Agency working with key sectors on action plan					2013/14 (covering 2015-2022)	Dependent on resources

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
CC.18	**Water Resource Management Plans -** address how to meet future potable water demand	Investment	5.15, 5.3	Water Companies					2013/14 (covering 2015-2040) - review every 5 years	Strong commitment
CC.19	**Measures to achieve and maintain Water Neutrality -** reduce water demand	Research / assessment	5.15, 5.3	London Water Group, GLA, Environment Agency						Dependent on resources
CC.20	**Securing London's Water Future: the Mayor's Water Strategy** - improve water demand supply planning process; reduce water demand/use; tackle water poverty; surface water flooding; drainage; and energy from waste water	Strategy / guidance	5.12, 5.13, 5.14, 5.15	GLA in partnership with key stakeholders					Published October 2011	Dependent on resources
CC.21	**Victorian Mains Replacement Programme -** leakage reduction	Investment	5.15	Thames Water						Dependent on resources
Waste and minerals										
CC.22	**The London Waste Map -** GIS mapping of London's existing licensed waste management sites	Research / assessment	5.16, 5.17, 5.18, 5.19	London Waste and Recycling Board (LWARB)					Published Autumn 2010	Strong commitment
CC.23	**Funding London's waste management infrastructure -** funding for large scale projects to address shortfall in waste treatment capacity	Investment	5.8, 5.16, 5.17	London Waste and Recycling Board (LWARB)					Funding until 2015	Dependent on resources

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale 2010 to 2012	2013 to 2018	post 2018	on-going	notes	certainty for key deliverers
CC.24	**The Mayor's Municipal Waste Management Strategy** - the Mayor's polices and proposals for the management of London's municipal waste (household and business waste collected by local authorities)	Strategy / guidance	5.16, 5.17	GLA, boroughs					Published November 2011	Statutory requirement
CC.25	**The Mayor's Business Waste Strategy** - for commercial & industrial and construction, demolition & excavation waste collected by waste operators under private contracts with businesses	Strategy / guidance	5.16, 5.17, 5.18, 5.19	GLA, businesses					Published November 2011	Strong commitment
CC.26	**Waste Development Plan Documents -** policies and sites for waste management at borough level	Strategy / guidance	5.16, 5.17	Boroughs, some jointly via area waste authorities						Statutory requirement
CC.27	**Site Waste Management Plans -** sustainable waste management and disposal at site level	Strategy / guidance	5.18	Developers						Statutory requirement
CC.28	**Licensing of commercial/ industrial, municipal, construction, demolition and excavation waste sites**	Strategy / guidance	5.16, 5.19	Environment Agency through regulation						Statutory requirement
CC.29	**Hazardous Waste Strategy** – to identify the need for and gaps in hazardous waste management capacity	Strategy / guidance	5.19	GLA, Environment Agency						Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
CC.30	**London Aggregates Working Party (LAWP) -** advice to Mayor, boroughs and government on minerals planning in London	Partnership	5.20	Mayor/GLA, boroughs, aggregates industry, developers					Government funding ceased in April 2011	Dependent on Government decision / guidance / resources
CC.31	**London Brownfield Land Forum** – to help guide London boroughs and industry to strategically assess and deliver brownfield land clean up (remediation)	Strategy / guidance	5.21	Environment Agency, GLA, boroughs, industry						Strong commitment depending on resources
CC.32	**Hazardous Installations SPG –** guidance on the process to follow to determine development proposals potentially affected by hazardous installations	Strategy / guidance	5.22	GLA					2013	Dependent on resources
LONDON'S TRANSPORT										
Transport capacity and connectivity										
TR.1	**The Mayor's Transport Strategy -** the transport component of the Mayor's strategic policy framework	Strategy / guidance	5.8, 6.1, 6.11	TfL, GLA					Summer 2010 - regular review	Statutory requirement
TR.2	**Sub-regional Transport Plans -** five year plans, translate MTS into sub-regional priorities	Strategy / guidance	6.1, 2.5, 6.4	TfL, sub-regional partnerships, boroughs					Regular updates	Strong commitment
TR.2A	**Local Implementation Plans -** delivering the MTS through borough initiatives	Strategy / guidance	6.2, 6.9, 6.10, 6.11, 6.12, 7.14	Boroughs						Statutory requirement

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
TR.3	**Negotiation with developers -** to safeguard land for transport schemes	Partnership	6.2	Boroughs, developers, TfL						Dependent on resources
TR.4	**Transport Assessments -** in line with Best Practice Guidance	Research / assessment	6.3	Developers, boroughs, TfL						Statutory requirement
TR.5	**Travel Plans** - in line with Guidance for Workplace and Residential Travel Planning	Action plan / designations	6.3	Developers, boroughs, TfL						Statutory requirement
TR.6	**Olympic Legacy Transport Action Plan** – to maximise the effectiveness of Olympics transport investments, includes behavioural change, effective operational planning as well as provision of new infrastructure	Action plan / designations	6.3, 2.4	TfL, GLA, boroughs, Olympic Park Legacy Company, developers					Published March 2012	Strong commitment
Public transport										
TR.7	**Major public transport schemes -** listed in Table 6.3 of London Plan, including connectivity of outer London	Investment	6.4, 2.8	TfL, Government, train operating companies (TOCs), funding through DfT, Network Rail and TfL					See Table 6.1	Dependent on resources
TR.8	**Crossrail s106/CIL SPG -** provides guidance on funding and replaces SPG from 2010	Strategy / guidance	6.5, 8.2, 8.3	Mayor/TfL in consultation with boroughs and developers					2013	Strong commitment
TR.9	**Bus/tram schemes -** listed in Table 6.3 London Plan - including bus network development	Investment	6.7	TfL, boroughs, funding through TfL					Varies - see Table 6.1 - buses ongoing, trams post 2020	Dependent on resources

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale 2010 to 2012	timescale 2013 to 2018	timescale post 2018	timescale on-going	notes	certainty for key deliverers
TR.10	**Feasibility study on coach hubs -** to reduce travel from/to Victoria Coach Station	Research / assessment	6.8	TfL, boroughs, developers					Completed in 2012	Strong commitment
Cycling and walking										
TR.11	**Cycling Schemes -** listed in Table 6.1 of London Plan - including expansion of Cycle Hire scheme and Cycle Superhighways trials	Investment	6.9, 4.5	TfL, boroughs, funding through TfL					Varies - see Table 6.1 – Superhighways until at least 2015	Dependent on resources
TR.12	**Walking schemes** - listed in Table 6.3 of London Plan - including initiatives such as 'Better Street', '10,000 Street Trees' and 'Legible London'	Investment	6.10, 4.5	TfL, boroughs, funding through TfL					Varies - see Table 6.1	Dependent on resources
Road traffic and parking										
TR.14	**Road schemes -** listed in Table 6.3 of London Plan.	Investment	6.12	TfL					Varies - see Table 6.1	Dependent on resources
TR.15	**Parking standards -** defined number of spaces for land uses	Strategy / guidance	6.13	Boroughs, developers						Strong commitment
TR.16	**Public Transport Accessibility Levels -** public transport access mapping facility	Strategy / guidance	6.13	TfL						Strong commitment
Freight										
TR.17	**Best Practice Freight Planning Guidance -** includes Construction Logistics Plans and Delivery & Servicing Plans – in line with MTS and London Freight Plan	Strategy / guidance	6.14, 6.3, 7.26	TfL, boroughs					Published August 2007	Dependent on resources

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
LONDON'S LIVING PLACES AND SPACES										
High-quality built environment										
PS.1	**Shaping Neighbourhoods – Understanding Place SPG -** provides guidance to boroughs, developers and communities on understanding the character of their areas and how it can inform a strategy for the future	Strategy / guidance	7.1, 7.3, 7.4, 7.5, 7.7	GLA					2013	Dependent on resources
PS.2	**Shaping Neighbourhoods – Lifetime Neighbourhoods and Neighbourhood Planning SPG** - to provide guidance on the implementation of the LTN principles	Strategy / guidance	7.1, 3.1, 3.2, 3.16-3.19	GLA					2013	Dependent on resources
PS.2	**Characterisation Studies** - evidence to underpin amongst others local neighbourhood strategies and decisions on appropriate balance between security and permeability in different areas	Research / assessment	7.1, 7.3, 7.4, 7.5, 7.7	Boroughs, developers					2015	Dependent on technical expertise / data
PS.3	**Local Infrastructure Plans -** setting out new infrastructure priorities to meet needs of existing and new communities	Strategy / guidance	3.1, 7.1	Boroughs, social and physical infrastructure providers						Dependent on technical expertise / data

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PS.4	**Accessible London SPG** - update - provides guidance to boroughs on implementing the principles of inclusive design and achieving an inclusive environment. Advice to form part of the Shaping Neighbourhoods SPG	Strategy / guidance	7.2	GLA, boroughs, developers, Access Forums, deaf and disabled people's organisations (DDPOs)					2013	Strong commitment
Heritage										
PS.5	**World Heritage Site Management Plans** - provides guidance to manage development to ensure the protection of its Outstanding Universal Value	Action plan / designations	7.8, 7.10	WHS Steering Groups, GLA, relevant boroughs, Historic Royal Palaces, English Heritage					2013	Dependent on individual circumstances
PS.6	**World Heritage Sites - Defining Settings SPG** - Guidance for boroughs and others to help define the settings of WHS to comply with government guidance	Action plan / designations	7.8, 7.10	GLA, English Heritage					Published March 2012	Strong Commitment
PS.7	**London View Management Framework SPG** - provide guidance for the protection and enhancement of strategic views across London	Strategy / guidance	7.8, 7.11	GLA, English Heritage					Published March 2012	Strong Commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PS.8	**Conservation Area Management Plans -** provides guidance for the protections and management of areas of special architectural or historic interest	Action plan / designations	7.8	Boroughs, English Heritage					Ongoing	Dependent on resources
PS.9	**Heritage Designations -** listed buildings, historic parks and gardens, TPOs, memorials, schedule ancient monuments	Strategy / guidance	7.8	Boroughs, English Heritage					Ongoing	Strong commitment
Safety, air and noise pollution										
PS.10	**London Strategic Emergency Plan -** Sets out the strategic regional response of the agencies that make up the London Resilience Partnership to incidents requiring multi-agency co-ordination on a pan-London basis	Strategy / guidance	7.13	London Resilience Partnership						Strong commitment
PS.11	**Control of dust and emissions during construction SPG -** provide guidance on implementation re dust and emissions	Strategy / guidance	7.14	GLA, London Councils					2013	Strong commitment
PS.12	**Mayor's Air Quality Strategy -** provides guidance on air quality neutral development and offsetting mechanism	Strategy / guidance	7.14	GLA					2010	Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PS.13	**Borough Supplementary Planning Documents (SPDs) -** to embed air quality issues in planning processes and transport schemes	Strategy / guidance	7.14	Boroughs						Dependent on local commitment
PS.14	**Quiet areas and areas of relative tranquillity -** identification and incorporation in local open space strategies and informing local transport programmes	Action plan / designations	7.15	Boroughs, Government					By 2015	Dependent on local commitment
Open and natural environment										
PS.15	**Policy Designations for Green Belt and Metropolitan Open Land (MOL) -** implementation through borough local plans	Designations	7.16, 7.17	Boroughs						Strong commitment
PS.16	**Mayor's Manifesto for Public Space 'London's Great Outdoors' -** including practical steps towards the provision of 'Better Streets' and 'Better Green and Water Spaces'	Action plan / designations	2.18, 6.10, 7.5, 7.18, 7.19, 7.21, 7.28	GLA					Projects ongoing to 2015	Strong commitment
PS.17	**Open Space Strategies -** audit and needs assessments to identify open space deficiencies and mechanisms for improving access to high quality open space, including play spaces; links to All London Green Grid area frameworks	Research / assessment	2.18, 3.6, 7.18	Boroughs, GLA, London Parks and Green Space Forum (LPGSF)					2013	Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PS.17	**Pocket Parks Investment Fund** – supporting creation/improvement of 100 pocket parks through competitive process	Investment	2.18, 7.18	Boroughs, GLA, other greenspace managers, community groups					Ongoing to March 2015	
PS.18	**'Sowing the Seeds' report'** - Support the report's planning related recommendations	Strategy / guidance	3.6, 7.18, 7.19	London Sustainable Development Commission, GLA						Strong commitment
PS.19	**Sites of Importance for Nature Conservation -** identify, review and monitor Biodiversity Action Plan targets	Action plan / designations	7.19	London Wildlife Board, GLA, boroughs, Natural England						Strong commitment
PS.20	**Habitat Regulation Assessments -** for appropriate Opportunity Area Planning Frameworks (OAPFs) and Areas of Intensification (AoIs)	Research / assessment	7.19	GLA, boroughs, Natural England, developers						Statutory requirement
PS.21	**Foundation SPG –** site designation and evidence, **Geodiversity Action Plan** to assist in understanding and protection of designated sites	Action plan / designations	7.20	London Geodiversity Partnership - led by Natural England, with GLA, boroughs, British Geology Society					SPG: Published March 2012, GAP: Until 2013	
PS.22	**Mayor's Trees initiative –** increasing street tree cover	Investment	5.9, 7.21	GLA, Forestry Commission					Ongoing to 2015	Strong commitment
PS.23	**Regional Forestry Framework** - revision to reflect recent Mayoral priorities for street trees	Strategy / guidance	7.21	Forestry Commission					By 2015	Dependent on resources

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
PS.24	**Trees and Woodlands SPG** - guidance on preparation of Borough Tree strategies	Strategy / guidance	7.21	GLA, Forestry Commission					Published July 2012	Dependent on resources
PS.25	**Implementation of Food Strategy -** revision of implementation plan	Strategy / guidance	7.22	GLA, London Food Board, boroughs					Ongoing to 2012	Strong commitment
PS.26	**Capital Growth** - financial support and advice towards food growing spaces	Investment	7.22	GLA, boroughs providing sites for voluntary groups					2,012 new growing spaces by 2012	Dependent on individual circumstances
PS.27	**Survey of current burial space provision -** to help protect existing burial spaces and promote new provision	Research / assessment	7.23	GLA					March 2011 - every 5 years	Dependent on resources
Blue Ribbon Network										
PS.28	**Implement River Piers Plan -** provide additional piers where required to support river passenger transport	Strategy / guidance	7.25	TfL, River Service Concordat Group, boroughs, developers, Port of London Authority						Strong commitment
PS.29	**Investment in cruise liner requirements -** to provide improved cruise liner facilities	Investment	7.25	Developers, boroughs, GLA, Port of London Authority					1 planning permission granted in 2011	Strong commitment
PS.30	**Safeguarded Wharves Review** – water freight demand forecast and current capacity estimate, assessment of all safeguarded sites and recommendation of revised set of safeguarded wharves to Government to initiate required changes to Safeguarding Directions	Strategy / guidance	7.26	GLA, TfL, Port of London Authority, Canal and Rivers Trust					Completion of review by early 2013, reviews every 5 years	Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale 2010 to 2012	timescale 2013 to 2018	timescale post 2018	timescale on-going	notes	certainty for key deliverers
PS.31	**Investment in re-activating wharves -** bring currently vacant / unused wharves into operation for river freight	Investment	7.26	GLA, TfL, Port of London Authority, cargo operators, boroughs					3 by 2015	Dependent on resources
PS.32	**Enjoying Water project -** regional study in London and the South East to explore need and opportunities for water related recreation	Research / assessment	7.27	Environment Agency, boroughs					Completion in 2011, annual reviews	Dependent on resources
PS.33	**Investment in boatyard in London -** identify, promote and potentially develop bespoke boatyard facilities in London to address shortfall	Investment	7.27	GLA, Port of London Authority, river transport operators					Need for at least one additional facility	Dependent on resources
PS.34	**Maintain London Rivers Action Plan -** interactive database of opportunities for restoration projects	Action plan / designations	7.28	Environment Agency, boroughs						Dependent on resources
PS.35	**Development/update of Thames Strategies -** tools to ensure coordinated action related to the river and inform local policy	Action plan / designations	7.28, 7.29	Boroughs, existing partnerships (Hampton-Kew, Kew-Chelsea, East)						Dependent on local commitment
IMPLEMENTATION, MONITORING AND REVIEW										
MR.1	**London Plan Implementation Plan**	Strategy / guidance	8.1, 8.4	GLA, Implementation Group					Published Jan 2013, updated annually during summer	Strong commitment

action no	implementation action	action type	London Plan policies supported	key deliverers	timescale					certainty for key deliverers
					2010 to 2012	2013 to 2018	post 2018	on-going	notes	
MR.2	**Annual Monitoring Report (AMR)** - includes monitoring performance against KPIs, housing targets, office market benchmarking and other issues	Research / assessment	3.3, 4.2, 8.1, 8.4	Boroughs, GLA, LDD using borough returns					Annually in early spring	Statutory requirement
MR.3	**Implement Mayoral CIL** in conjunction with London boroughs - publish guidance for boroughs and others on application of the CIL.	Strategy / guidance	8.3, 6.5	Mayor, Transport for London, boroughs and other London stakeholders					Review of the Mayor's CIL in 2014, then every 2 years	Strong commitment
MR.4	**Guidance on the preparation of frameworks for negotiations on planning obligations -** reflecting Mayor's strategic priorities, also intention to develop with the boroughs a voluntary system of pooling contributions	Strategy / guidance	8.2, 8.3	GLA						Dependent on Government decision / guidance

ANNEX 2

ACRONYMS AND ABBREVIATIONS

ANNEX 2: ACRONYMS AND ABBREVIATIONS

AMR	Annual Monitoring Report
ALGG	All London Green Grid
BAP	Biodiversity Action Plan
BID	Business Improvement District
BPG	Best Practice Guidance
CAZ	Central Activities Zone
CBI	Confederation of British Industry
CCMES	Climate Change Mitigation and Energy Strategy (GLA)
CDE	Construction, Demolition and Excavation [waste]
CHP	Combined Heat and Power
C/I	Commercial and Industrial [waste]
CIL	Community Infrastructure Levy
CLG	Communities and Local Government
CSR	Comprehensive Spending Review
DDPO	Deaf and Disabled Peoples' Organisation
DE	Decentralised Energy
DECC	Department for Energy and Climate Change
DEPDU	Decentralised Energy Programme Delivery Unit
DLR	Docklands Light Railway
DNO	Distribution Network Operator
DPD	Development Plan Document
EiP	Examination in Public
ERDF	European Regional Development Fund
ESCO	Energy Service Company
GIGL	Greenspace Information for Greater London
GOL	Government Office for London
HCA	Housing and Communities Agency
HEI	Higher Education Institution
HIA	Health Impact Assessment
HIP	Housing Improvement Programme
HRA	Habitats Regulation Assessment
HSE	Health and Safety Executive
HUDU	Healthy Urban Development Unit (NHS)
IAPF	Intensification Area Planning Framework
IDP	Infrastructure Delivery Plan
IRF	Inter-regional Forum

LAWP	London Aggregates Working Party
LB	London Borough
LEGGI	London Energy and Greenhouse Gas Inventory
LEINS	London’s Environmental Infrastructure Needs Study (Environment Agency)
LEP	Local Enterprise Partnership
LFEPA	London Fire & Emergency Planning Authority
LFB	London Fire Brigade
LIP	Local Implementation Plan
LUCID	Application to the Intelligent Development of Cities
LWARB	London Waste and Recycling Board
MOL	Metropolitan Open Land
MPA	Metropolitan Police Authority
MPS	Metropolitan Police Service
MSW	Municipal Solid Waste
MTS	Mayor's Transport Strategy
NPPF	National Planning Policy Framework
OAPF	Opportunity Area Planning Framework
ODA	Olympic Delivery Authority
OFWAT	Water Services Regulation Authority
OPLC	Olympic Park Legacy Company
PADHI	Planning Advice for Development Near Hazardous Installations
PCT	Primary Care Trust
PLA	Port of London Authority
PPS	Planning Policy Statement
RSL	Registered Social Landlords
SIL	Strategic Industrial Location
SOLDC	Strategic Outer London Development Centre
SPD	Supplementary Planning Document (Boroughs)
SPG	Supplementary Planning Guidance
STW	Sewage Treatment Works
TE2100	Thames Estuary 2100 project
TIF	Tax Increment Finance
TOC	Train Operating Company
VNEB	Vauxhall, Nine Elms, Battersea
WHS	World Heritage Site
WRMP	Water Resource Management Plan
WRZ	Water Resource Zone

Other formats and languages

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Chinese

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Hindi

यदि आप इस दस्तावेज की प्रति अपनी भाषा में चाहते हैं, तो कृपया निम्नलिखित नंबर पर फोन करें अथवा नीचे दिये गये पते पर संपर्क करें

Vietnamese

Nếu bạn muốn có văn bản tài liệu này bằng ngôn ngữ của mình, hãy liên hệ theo số điện thoại hoặc địa chỉ dưới đây.

Bengali

আপনি যদি আপনার ভাষায় এই দলিলের প্রতিলিপি (কপি) চান, তা হলে নীচের ফোন্ নম্বরে বা ঠিকানায় অনুগ্রহ করে যোগাযোগ করুন।

Greek

Αν θέλετε να αποκτήσετε αντίγραφο του παρόντος εγγράφου στη δική σας γλώσσα, παρακαλείστε να επικοινωνήσετε τηλεφωνικά στον αριθμό αυτό ή ταχυδρομικά στην παρακάτω διεύθυνση.

Urdu

اگر آپ اِس دستاویز کی نقل اپنی زبان میں چاهتے هیں، تو براه کرم نیچے دئے گئے نمبر پر فون کریں یا دیئے گئے پتے پر رابطه کریں

Turkish

Bu belgenin kendi dilinizde hazırlanmış bir nüshasını edinmek için, lütfen aşağıdaki telefon numarasını arayınız veya adrese başvurunuz.

Arabic

إذا أردت نسخة من هذه الوثيقة بلغتك، يرجى الاتصال برقم الهاتف أو مراسلة العنوان أدناه

Punjabi

ਜੇ ਤੁਹਾਨੂੰ ਇਸ ਦਸਤਾਵੇਜ਼ ਦੀ ਕਾਪੀ ਤੁਹਾਡੀ ਆਪਣੀ ਭਾਸ਼ਾ ਵਿਚ ਚਾਹੀਦੀ ਹੈ, ਤਾਂ ਹੇਠ ਲਿਖੇ ਨੰਬਰ 'ਤੇ ਫ਼ੋਨ ਕਰੋ ਜਾਂ ਹੇਠ ਲਿਖੇ ਪਤੇ 'ਤੇ ਰਾਬਤਾ ਕਰੋ:

Gujarati

જો તમને આ દસ્તાવેજની નકલ તમારી ભાષામાં જોઈતી હોય તો, કૃપા કરી આપેલ નંબર ઉપર ફોન કરો અથવા નીચેના સરનામે સંપર્ક સાધો.