

**Vauxhall Nine Elms Battersea  
Opportunity Area Planning Framework**

**Sustainability Appraisal  
DRAFT**

**(Incorporating Strategic Environmental Assessment)**

**December 2009**

Document history			
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# **Vauxhall Nine Elms Battersea Opportunity Area Planning Framework**

## **Sustainability Appraisal DRAFT**

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## NON-TECHNICAL SUMMARY

### Background

The Vauxhall Nine Elms Battersea (VNEB) Opportunity Area Planning Framework (OAPF) is a non-statutory spatial planning document, prepared by the Mayor of London in consultation with a range of statutory and non-statutory organisations. It has been prepared in the context of the London Plan 2004 (consolidated with changes) and the emerging London Plan 2009. It is currently at a consultation draft stage. The objectives of the OAPF include bringing together local and strategic policy across the Opportunity Area (OA), establishing and providing guidance for Borough level plan making, and assisting and implementing cross borough projects.

The purpose of this sustainability appraisal (SA) is to assist formulation of the OAPF by assessing, evaluating and predicting the effects of the OAPF and recommending measures to mitigate identified effects. Ultimately, the objective of the SA is to increase the credibility of the OAPF and its material weight in planning decisions.

### The SA Process

The SA runs alongside the development of the OAPF and the results of the SA are incorporated into the OAPF. The key stages of the SA process for the purposes of this report are summarised in the following table:

<b>A. Setting the context and objectives, establishing the baseline and deciding on the scope</b>
<ul style="list-style-type: none"> <li>Identifying other relevant plans, policies and programmes and sustainable development objectives</li> </ul>
<ul style="list-style-type: none"> <li>Collecting baseline information</li> </ul>
<ul style="list-style-type: none"> <li>Identifying Sustainability issues within the OA</li> </ul>
<ul style="list-style-type: none"> <li>Developing the SA framework</li> </ul>
<b>B. Developing and refining options and assessing effects</b>
<ul style="list-style-type: none"> <li>Testing the OAPF objectives against the SA framework</li> </ul>
<ul style="list-style-type: none"> <li>Developing the OAPF options</li> </ul>
<ul style="list-style-type: none"> <li>Predicting and evaluating the effects of the OAPF</li> </ul>
<ul style="list-style-type: none"> <li>Considering ways of mitigating adverse effects and maximising the effects of implementing the OAPF</li> </ul>

### The SA framework

An analysis of plans, programmes, policies and baseline data has been undertaken and used as a basis for developing sustainability objectives against which the OAPF has been tested. An assessment of social, economic and environmental issues has also been undertaken to assist in developing the sustainability objectives. This framework of objectives is called the sustainability appraisal framework and features 18 separate objectives. The objectives have been tested against each other for compatibility and potential conflicts identified, although many of them overlap and are interdependent. In addition, a set of indicators tracking progress towards each objective have been selected, and are included in the SA framework.

### **Testing the OAPF objectives against the SA framework**

The Consultation Draft OAPF objectives have been tested against the sustainability framework. There are eight OAPF objectives in total, and a matrix has been used to test the sustainability of the OAPF objectives and identify potential conflicts. Overall, the OAPF objectives are broadly compatible with the sustainability framework and there are no objectives that are either mutually incompatible or where mitigation could not resolve conflicts. The most likely conflicts arise through the need to secure growth for housing, including affordable housing, employment, and related infrastructure and the need to preserve and improve the natural environment and the character of the built environment.

### **Developing the OAPF options**

The OAPF incorporates a Development Capacity Study that considers five separate density options. A 3D block model was developed to test spatial capacity for new jobs and housing in the OA, and density options were used to test public highway, highways, open space and social infrastructure requirements.

### **Predicting and evaluating the effects of the OAPF**

The effects of the five OAPF development capacity scenarios have been predicted and evaluated with respect to the sustainability objectives. For further robustness, a negative or positive symbol has been used to show progress or otherwise towards each indicator aligned with an individual objective. A more detailed impact assessment is provided for the Option 5 revised scenario (the preferred OAPF option), assessing the likelihood, magnitude, permanence and timescale of effects.

### **Mitigation measures**

Based on the prediction and evaluation of effects, there are several areas where the Option 5 revised scenario may result in negative effects and/or where further mitigation may enhance positive effects. Further mitigation measures are therefore recommended with respect to the following sustainability objectives:

- Equality and diversity;
- Transport and travel;
- Heritage and the built environment;
- Bio-diversity;
- Water resources;
- Waste; and
- Air quality and climate change.

# 1. Introduction

## 1.1 Opportunity Area Planning Frameworks

Opportunity Area Planning Frameworks are non-statutory spatial planning documents issued by the Mayor of London. They are prepared in the context of the London Plan 2008 (consolidated with changes) and the emerging London Plan 2009.

2008 London Plan Policy 2A.2 *“Opportunity Areas and Intensification Areas”* states that:

*“Strategic partners should work with the Mayor to prepare, then implement spatial planning frameworks for Opportunity Area as shown on map 2A.1, or to build on frameworks already developed. These frameworks will set out a sustainable development programme for each Opportunity Area to be reflected in DPD’s, so as to contribute to the overall strategy of the London Plan.”*

The objectives of Opportunity Area Planning Frameworks are as follows:

- Bridging local and strategic policies. The process of producing the Framework provides a platform for communicating between the strategic and local level, reinforcing common ground and resolving differences.
- Establish and provide guidance for the plan making in the Local Development Framework.
- Assist and implement cross borough projects.

## 1.2 Introduction to the Vauxhall Nine Elms Battersea OAPF

### Overview

The Opportunity Area Planning Framework (OAPF) for Vauxhall Nine Elms Battersea (VNEB) has been produced in partnership by the Greater London Authority (GLA) with the London Development Agency (LDA), Transport for London (TfL), London Boroughs (LBs) of Lambeth and Wandsworth and English Heritage, the partner organisations form the steering group for the project. The GLA has led the production of the OAPF, working closely with the strategic transport and regeneration agencies, local planning authorities and specialist heritage and urban design bodies.

The production of the OAPF has also been influenced by comprehensive pre-application meetings and discussions with key landowners and developers in the Opportunity Area (OA) who form the stakeholder group for the project.

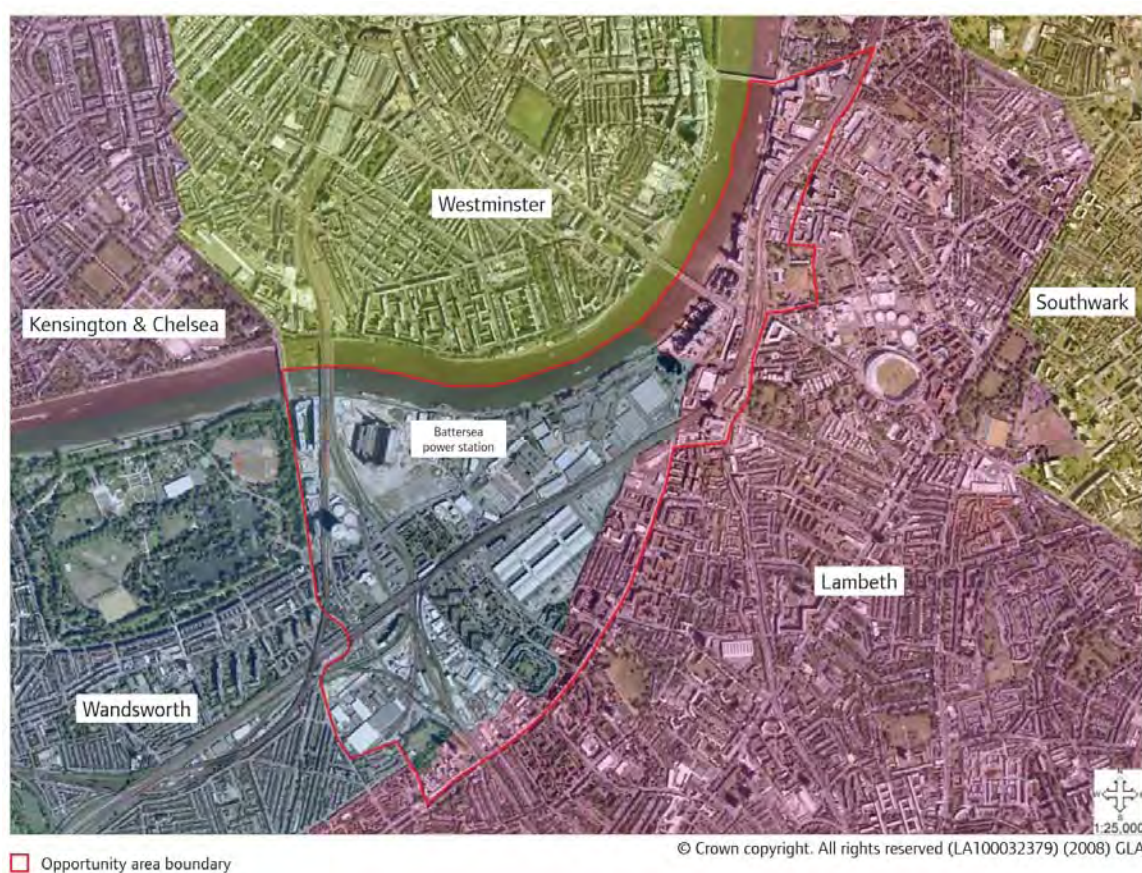
A Consultation Draft VNEB OAPF was published for public consultation in November 2009. For the purpose of this report the document will be referred to as the Consultation Draft OAPF.

## Spatial Context

The VNEB OA is a large site of 195 hectares located on the south bank of the River Thames between Waterloo to the north and Battersea Park to the southwest.

The extent of the OA runs from Lambeth Bridge in the north to Chelsea Bridge in the southwest including Vauxhall Cross and Albert Embankment. The northern part of the OA is located in the LB of Lambeth, with the southern part located in the LB of Wandsworth. The borough boundary bisects the OA to the south of Vauxhall Cross. In a broader context the OA forms the western end of the south bank, central area Opportunity Areas (OAs) and its northern boundary is contiguous with the Waterloo OAPF, which was published by the GLA in October 2007.

**Figure 1 – Opportunity Area boundary and spatial context**



## Key principles

The VNEB OAPF is underpinned by four key principles:

- To establish a policy framework which brings together London Plan and Borough development plan documents (DPDs);
- To set out the policy framework in a series of maps and diagrams to define a geographically accurate spatial context to enable major developments to come forward in a co-ordinated manner;

- To bring forward partnership working in strategically significant development areas in London – maximising public and private resources in regeneration
- To bring consultation forward in the planning process by engaging planning authorities and developers as early as possible and throughout the development process

## 1.3 Sustainability Appraisal process

### Summary of the Strategic Environmental Directive and government guidance

In accordance with the European Directive 2001/42/EC, a Strategic Environmental Assessment (SEA) is required to be undertaken on certain plans and programmes. It came into force in the United Kingdom on 20 July 2004 and is required to be undertaken during the preparation and modification of the Regional Spatial Strategy (RSS), the London Plan, Development Plan Documents (DPD) and Supplementary Planning Documents (SPD).

The purpose of Strategic Environmental Assessment is summarised in Article 1 of the SEA Directive:

*“To provide a high level of protection of the environment and to contribute to the integration of environmental considerations into the preparation and adoption of plans and programmes with a view of promoting sustainable development”.*

The Department for Communities and Local Government has provided guidance for merging Sustainability Appraisal (SA) and SEA as a single joint appraisal, and this approach has been followed in this document. This also fulfils the requirements for Health Impact Assessment, Equalities Impact Assessment and Community Safety Impact Assessment and as such avoids the need to undertake and report on separate assessments.

Government guidance on Sustainability Appraisals (ODPM, 2005) indicates that the process should also cover social and economic issues such as economy, society, education, skills, transport, equality and diversity. This also reflects the requirement of the Government Office for London Circular (1/2000 Strategic Planning in London) and has been taken into account.

The below table outlines the key stages of the SA process (which are based on Government guidance on Sustainability Appraisal (ODPM, 2005)). Stages A, B and C of the process are combined within the SA, which represents a departure from the established methodology of a separate scoping report and full report. This approach is in keeping with Government guidance, which notes the importance of treating the SEA as a flexible process, tailored to the needs of different plans and programmes to which the directive applies whilst at the same time ensuring that the requirements of the directive are met.

**Table 1 – The SEA directive**

<b>Stage A</b>	<b>Setting the context and objectives, establishing the baseline and deciding on the scope</b>
A1	Identifying other relevant plans, policies and programmes and sustainable development objectives
A2	Collecting baseline information
A3	Identifying Sustainability issues and problems
A4	Developing the Sustainability Appraisal framework
A5	Consulting on the scope of the Sustainability Appraisal
<b>Stage B</b>	<b>Developing and refining options and assessing effects</b>
B1	Testing the OAPF objectives against the SA framework
B2	Developing the OAPF options
B3	Predicting the effects of the OAPF
B4	Evaluating the effects of the OAPF
B5	Considering ways of mitigating adverse effects and maximising the effects of implementing the OAPF
B6	Proposing measures to monitor the significant effects of implementing the OAPF.
<b>Stage C</b>	<b>Preparing the Sustainability Appraisal report</b>
C1	Prepare the SA
<b>Stage D</b>	<b>Consulting on the draft OAPF and SA report</b>
D1	Public participation on the SA report and the draft OAPF
D2	Assessing against significant changes
D2	Making decisions and providing information
<b>Stage E</b>	<b>Monitoring implementation of the draft OAPF</b>

Stage A involves establishing the framework for undertaking the SA – essentially a set of sustainable development objectives against which the OAPF can be assessed, together with the evidence base that will help to inform the appraisal. The evidence base determines the environmental, social and economic characteristics of the area in question, which can be used in evaluating the impacts of the OAPF on the sustainable development objectives. The framework and evidence base is documented in Stage A of the SA.

Stage B involves assessing the five density options in the OAPF against the sustainable development objectives with reference to the evidence base. Measures for mitigating and monitoring the effects of options / preferred options can also be put forward at this stage. Stage C involves documenting the appraisal process and findings in a Sustainability Appraisal Report and Stage D involves consultation on this report and the preferred options themselves. Stage E involves monitoring the implementation of the LDD including its significant effects.

The purpose of preparing an SA to accompany and inform the Consultation draft VNEB OAPF is to identify any shortcoming in the preparation of this framework and ultimately increase the document's credibility, material weight and subsequent material consideration in planning decisions.

#### **Limitations of the SA approach followed**

A Scoping Report (Stage A of the process) has not accompanied the production of the Consultation Draft OAPF, and although desirable, there is no legal requirement to



produce one. The SA was subsequently agreed when the Consultation Draft OAPF reached the public consultation stage and the steering group felt that an appraisal would add value and increase the material weight of the OAPF. Consequently, the methodology for preparing this report has not thoroughly followed the SEA Directive or guidelines issued by the DCLG in terms of a separate scoping report to inform the production of the consultation draft OAPF. The recommendations of the SA will be included within the final version of the OAPF however, particularly in terms of mitigation, and will thus influence the eventual outcome.

Other limitations may arise from the availability and inconsistency of baseline data. Appraisal of policies is not a straightforward process and the outcomes may include considerable levels of uncertainty due to the following factors:

- Lack of suitable and appropriate data to base indicators on;
- Natural variation. Personal perception and interpretation might interfere policies implementation;
- Late initiation of the SA; and
- Data could not be compared on a like for like basis. Some categorises of census data were restricted to borough level.

## **2. Sustainability objectives, baseline and context**

### **2.1 Links to policies, plans, programmes, and sustainability objectives**

The OAPF needs to be framed in the context of international, national, regional and local objectives and policy. A comprehensive review of all relevant policies, plans and programmes has recently been carried out as part of the SA scoping process by the London Boroughs of Lambeth and Wandsworth to aid formulation of their Local Development Framework (LDF) Core Strategies. The Government has introduced comprehensive changes to the development planning system via the Planning and Compulsory Purchase Act 2004, requiring Local Planning Authorities (LPAs) to replace adopted plans with Local Development Frameworks (LDFs). SA is integral to the formulation of LDF Core Strategy as per the SEA Directive and government guidance. In addition, the London Borough of Lambeth has recently prepared an SA to assist formulation of Vauxhall Supplementary Planning Guidance 2009 (currently in draft form).

The review of policy, plans and programmes carried out in association with the above SA's has been reviewed and used as a basis for this report and updated where necessary.

Relevant documents at international, national, regional and local level have been reviewed. For each document the following information has been collated;

- Key objectives relevant to the OAPF;
- Key targets and indicators relevant to the OAPF;
- Implications for the OAPF;

This information has been used to inform the subsequent stages of the process, which are covered in later sections of this document.

- Identification of sustainability issues (Stage A3);
- Development of SA framework (Stage A4); and
- Baseline review (Stage A2).

The full policy review is included as Appendix 1 to this report. The below table references relevant policy at the regional and local level, from which OAPF specific sustainability objectives have been derived.

**Table 2 – policies, plans and programmes**

Regional / London
EER – South East of England Regional Assembly – South East Plan – A clear vision for the South East – March 2006
Sustainable Development Framework for London
The London Plan (Consolidated with alterations since 2004, published February 2008)
The London Plan (Consultation draft replacement plan, October 2009)
Sustainable Design and Construction SPG (May 2006)
Industrial Capacity SPG (March 2008)
Revised London View Management Framework SPG (draft June 2009)
Industrial Capacity SPG (March 2008)
Sustainable Communities in London, ODPM 2003
Intermodal Transport Interchange for London. BPG 2004 Regional Policy
London Climate Change Adaptation Strategy (draft August 2008)
London Water Strategy (Draft March 2007)
Health Inequalities Strategy (draft 30 <sup>th</sup> Jan 2008)
Mayor’s Transport Strategy (2001), revised 2004 (CCZ) and 2006 (LEZ). Transport Strategy Implementation Targets (July 2004)
EA Thames Catchment Flood management Plans; and EA Thames Estuary 2100 Project
Health Care for London. A Framework for action. Second Edition.
Improving Londoners Access to Nature – London Plan Implementation Report (February 2008)
London Energy Strategy 2009
London Economic Development Strategy 2009
Local
The London Plan – Sub-Regional Development Framework for Central London May 2006
Adopted UDP 2007 Sustainable Design and Construction SPD July 2008
Guidance and Standards for Housing Development and House Conversions SPD (2008)
Safer Built Environments SPD (march 2008)
S106 Planning Obligations SPD (July 2008)
London Borough of Lambeth Sustainable Community Strategy our 2020 vision(2008-2020)
London Borough of Lambeth Housing Strategy Statement 2004 – 2007
London Borough of Lambeth Local Implementation Plan (Transport, 2006)
CRP – Light at the End of the Tunnel Regional Policy
Lambeth Open Space Strategy, 2004 (Updated 2007)
Lambeth Biodiversity Action Plan 2005
Lambeth PCT Strategies:

<ul style="list-style-type: none"> <li>- 5 year commissioning Strategy Plan (2008/09)</li> <li>- Operations Plan (2008/09)</li> <li>- Promoting Mental Health and Wellbeing in Lambeth (2005)</li> <li>- Lambeth Healthy Weight - Healthy Lives Strategy (2008-11)</li> <li>- Updated Estates Strategy (March 2008)</li> </ul>
London Borough of Wandsworth UDP (2003)
London Borough of Wandsworth Sustainable Community Strategy (2008) – Our Wandsworth 2018
London Borough of Wandsworth Environmental Policy 2004-2007 (2007 – 2009/10)
London Borough of Wandsworth Environmental Action Plan (2007 – 2008)
London Borough of Wandsworth Renewal Strategy (2002)
London Borough of Wandsworth Air Quality Action Plan (2004)
London Borough of Wandsworth Housing Strategy (2003)
London Borough of Wandsworth Joint Strategic Needs Assessment (2008)
London Borough of Wandsworth Teaching Primary Care Trust (WPCT) Commissioning Strategy Plan 2008 -2013
London Borough of Wandsworth Children & Young People’s Plan (2008 – 2011)
London Borough of Wandsworth Strategy for Older People (2008 – 2013)
London Borough of Wandsworth Crime, Disorder and Drugs Strategy (2005 – 2008)
Draft Cultural Strategy for Wandsworth (2008)
Wandsworth Sports Strategy (2005 – 1010)
A management Strategy for parks, Commons and Open Spaces (2005) (and ongoing)
Local Biodiversity Partnership
Borough Tree Strategy (2001)
London Borough of Wandsworth Local Implementation Plan 2006 – 2011 (Adopted January 2007)

## 2.2 Baseline considerations

The SEA Directive says that the SA should provide information on:

*“Relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan” and the “environmental characteristics of the areas likely to be significantly affected.”*

*“Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC (Bird Directive) and 92/94/EEC (Habitats Directive)”*

The baseline summary below describes the underlying social and economic considerations in addition to environmental conditions, and provides a basis for predicting and monitoring effects. The baseline conditions have been largely derived from the information and data contained within the OAPF technical appendices, namely:

- TA1 – Socio-economic context
- TA2 – Built and heritage context
- TA3 – Views assessment
- TA4 – Transport and movement context
- TA5 – LDA energy master plan
- TA6 – Waste & wharves strategy
- TA7 – Water strategy
- TA8 – Section 106 infrastructure study

### **Spatial context**

The OA is dominated by heavy infrastructure including roads and rail viaducts, with Battersea Park Road, Nine Elms Lane, Vauxhall Cross and Albert Embankment running south west to north east, the mainline railway line to Waterloo including Vauxhall rail station also running south west to north east and the mainline railway line into Victoria running north to south at the western end of the OA. The interwoven and multitudinous railway lines at the western end of the OA combined with the changes in levels supported by the railway arches causes a strong segregation effect between Battersea Park to the west and Nine Elms to the east.

The built form of the OA, whilst mixed in terms of age and type, is characteristically different to the surrounding areas with the individual building footprints much larger and in distinct contrast to the finer grain of Pimlico, Lambeth, Kennington, South Lambeth and Battersea. The larger building typologies are also surrounded by a significant scale and quantum of transport infrastructure, which gives the area its loose fitting urban grain and contributes to an overall lack of legibility in terms of built form.

There are a few medium rise buildings i.e. below 50m or 10 – 15 storeys in height depending on building typology. These are located along the riverside, Queenstown Road opposite Battersea Park, within Nine Elms and along Albert Embankment.

The most dominant land use in the OA is employment, including industry, office and retail uses. Albert Embankment to the north is home to a range of office and warehouse uses, many coming to the end of their operationally useful life. Vauxhall has a number of institutional office occupiers and smaller retail uses, although the area is largely dominated by transport

infrastructure including major roads, bus, rail and tube stations. A number of logistical and distribution uses are located in central Nine Elms with the New Covent Garden Market situated on two key sites; the Main Market site and the Flower Market site.

To the north of Nine Elms lane there are two operational and protected wharves and a fully occupied industrial estate located at Tideway. Stewarts Road is characterised by an extensive and well-established industrial area located to the east and west of the railway lines, with the Battersea train depot located on Dickens Street. The gasholder site to the west of Battersea Power Station is operational, whilst the Power Station itself, although an important part of the area's industrial heritage is in an advanced state of dereliction.

The housing within the OA is characterised by a group of housing estates between Nine Elms Lane and Wandsworth Road to the western end of the OA.

### **Heritage and the built environment**

There are numerous historic assets within and immediately outside the OA including conservation areas, listed and historic buildings including Battersea Power Station, listed and historic buildings, Lambeth Palace, Palace of Westminster World Heritage Site, and sites of archaeological value.

### **Open space**

The OA is bounded to the west by Battersea Park, an 83 hectare Victorian park of metropolitan significance. Archbishop's Park is located at the northern tip of the OA at Lambeth Palace.

With the exception of Spring Gardens, Pedlars Park and Whitgift Park at the northern end of the OA, the area is largely devoid of open green space, although there are a number of parks within the vicinity such as Vauxhall Park, Larkhall Park and Heathbrook Park.

### **Housing**

The OA is largely surrounded by residential uses to the north east, east, south east and south west, and as noted above the housing within the OA is characterised by a group of housing estates between Nine Elms Lane and Wandsworth Road to the western end of the OA.

2008 housing data from the Queenstown ward in Wandsworth and Oval ward in Lambeth show these wards already have significant residential communities, with population density dropping northward through the Prince's and Bishop's wards in the Lambeth part of the OA. Projected population growth for 2018 indicates that the population in the Lambeth part of the OA is set to substantially increase. On the basis that a number of significant development sites are coming forward in the Nine Elms area, it is likely that the residential population of the Queenstown ward in Wandsworth is also set to increase significantly in the next 10 years.

### **Equality and diversity**

Lambeth: Lambeth has a very high population density of 99 people per hectare which is the fifth highest in the country. The Index of Multiple Deprivation (IMD) shows that 17 of Lambeth's 21 wards are in the 20% most deprived wards in England. Lambeth scores poorly on housing and employment. In 2000, all the wards except Thurlow Park were in the lowest 10% for housing conditions, and the borough was ranked 17th lowest in England and Wales on employment rates. Lambeth's unemployment rate is high at 4.6%, compared to 3.2% in London and 2.5% in the UK.

The borough is more ethnically diverse than the rest of London and has a growing African and Portuguese speaking population, with 38% of residents coming from black and minority ethnic (BME) communities. It has a young population with nearly half of its residents aged between 20 and 39. There are a very high proportion of single parents with dependent children.

**Wandsworth:** The Tooting, Battersea and Roehampton areas of Wandsworth currently show some level of deprivation on some, if not all of the key indicators. Common characteristics in these areas include a much higher percentage of older people; a larger percentage of younger families; proportionately more young people (0 – 24 years) and people aged 45+ years than the rest of the borough; over twice the percentage of people with a long term illness (not employed and with dependent children); concentrated pockets of particular ethnic groups with particular needs; higher unemployment rates; lower academic attainment; and, higher crime rates for certain offences.

The population includes a diverse range of ethnic minority communities and faith groups. 22% of residents come from non-white groups, whilst 65% are White British, 10% are Black or Black British, and 7% are Asian or Asian British with relatively small Indian, Bangladeshi and Chinese people living within the borough.

### **Employment**

**Lambeth:** Lambeth has experienced strong economic growth in recent years, with the larger employers concentrated in the north of the borough. The majority of small and medium enterprises (SMEs) are concentrated in the centre and north of the borough including Vauxhall.

The economy is dominated by three broad growth sectors, including Public sector (36% of total employment compared to 20% across inner London). Banking, finance and insurance make up 26% of total employment whilst distribution, hotels, restaurants and retail make up 17% of total employment. Creative and cultural industries are another significant sector in Lambeth and are one of London's key growth sectors and targeted for support by the LDA.

**Wandsworth:** Wandsworth's town centres provide a focus for employment, shopping and leisure activities, although a substantial proportion of the population travels to jobs elsewhere, particularly in central London. Small firms (employing less than 11 employees) make up 90% of the businesses in the borough, with steady growth in this area.

A high proportion of the OA population are within the top two skills tiers and are economically active. However, almost 20% are within the bottom three standardise tiers, including those on state benefits, demonstrating social disparities within the OA

### **Soil conditions, groundwater and contamination**

Information on soil and groundwater conditions across the OA is patchy, although a ground condition survey has been undertaken for the Battersea Power Station site on behalf of Treasury Holdings to accompany the current outline planning application. The survey results have been compared to UK Soil Guideline Values (SGV's), which are available for a limited number of contaminants and land uses. Several soil samples recorded concentrations of various metals (arsenic, cadmium, lead and nickel) exceeding the SGV's for residential land use. Several of these samples recorded concentrations of lead exceeding the SGV's for commercial/industrial use. Several samples from locations around BSP detected Polycyclic Aromatic Hydrocarbons (PAH's) and Extractable Petroleum Hydrocarbons (EPH) concentrations exceeding guidelines for commercial/industrial land use. Hydrocarbon odours have also been detected in previous soil surveys undertaken around the site.

### **Water resources**

The OA is a site of residual flood risk, and is defined as 'flood zone 3a' by the Strategic Flood Risk Assessment (SFRA) studies carried out jointly by Lambeth and Wandsworth that determine that flooding is a high probability. The Lambeth part of the OA is protected by the Lambeth Thames Flood Defences, although the OA in its entirety is designated as an area that benefits from flood defences.

Breach modelling has been carried out at Nelson's Wharf, just north of Vauxhall Bridge and at Nine Elms Jetty to the south of Vauxhall Bridge. Flood depths that may be experienced across the OA should a breach occur in the Thames Tidal Flood Defences during 1:1000 flood year event have been modelled and flooding can be expected at depths up to 0.5m. The most acceptable method of mitigating flood risk is to ensure habitable floors are raised above the maximum flood water level.

Sewer flooding (principally from the culverted Effra River) and surface water flooding are issues also identified within the OA.

### **Biodiversity**

The physical environment of the OA is severely degraded with very little in the way of open space, mature trees, or green spaces supporting biodiversity. The public realm is dominated by road traffic with key routes such as Nine Elms Lane, Wandsworth Road and Vauxhall gyratory contributing to a very poor natural environment that contributes little in the way of amenity

There are small pockets where recent environmental improvements combined with small scale commercial activity have improved the physical environment, such as Albert Embankment, but these locations are isolated and there is very little in the way of natural biodiversity or habitat areas. The banks of the Thames bordering the OA are totally transformed from their natural state and support little in the way of bio-diversity or bird habitat.

The derelict Battersea Power Station supports a range of biota, namely grassland and shrub assemblages and brownfield habitat. Bird species known to inhabit or visit the site include *Peregrine Falcons* and *Black Redstarts*.

### **Air quality**

The OA is within an Air Quality management Area and currently features degraded air quality. There are areas of high nitrogen dioxide (NO<sub>2</sub>) concentrations in the OA particularly along the strategic highway network around Vauxhall gyratory, Nine Elms Lane and Albert Embankment.

### **Health and wellbeing**

Both Lambeth and Wandsworth areas within the OA suffer from social deprivation and as a result health outcomes are relatively poor. Life expectancy, infant mortality, and premature deaths from cardiovascular diseases and cancer are all worse than both National and London averages. Major health challenges relating to unhealthy lifestyles such as high smoking prevalence, childhood obesity, improper alcohol intake and substance misuse are also overly represented in both Lambeth and Wandsworth. Lambeth has a higher prevalence of mental illness than other London Boroughs and significant health inequalities exist in areas such as infant mortality, teenage pregnancy and childhood obesity. Life expectancy for both males and females in Wandsworth and Lambeth is below the national average.

In relative terms the Lambeth wards of Oval, Prince's and Bishop's have severe levels of income, employment and health deprivation in comparison to the Queenstown ward, although there are some issues in relation to deprivation indicators in north Wandsworth also.

Air pollution, noise and lack of open space also affect public health and well being and contribute to the poor overall standard of health amongst residents in the OA.

The OA is located near St Thomas' Hospital in Lambeth, which forms part of the Guys and St Thomas' NHS Foundation Trust. The Trust provides a wide range of clinical services at both



hospitals, which are in close proximity to the OA. There are two GP surgeries within the OA with a number located around the edge of the OA in the existing residential districts.

Whilst there may be capacity at GP surgeries that fall within the 800m walk net of the OA which could accommodate some population growth from the OA they suffer from poor accessibility.

### **Safety and security**

Crime and disorder is a key concern of both Lambeth and Wandsworth residents, with 59% of Lambeth residents naming crime as the issue of greatest concern to them in a recent Council survey. Crime rates for both violent and other levels of crime in Wandsworth and Lambeth are both still well above the national rate although have dropped significantly in recent years, with violent crime dropping 67% from 2001 to 2007 in Lambeth. Lambeth still has a higher rate of domestic violence than any other London Borough however, and parts of the Borough suffer from a chronic drug crime issue. Fear of crime is also a major issue, with a significant number of people feeling unsafe in the place they live, particularly at night.

### **Education**

Both Lambeth and Wandsworth fall in the lower ranks of educational skills and training deprivation. Lambeth has low overall rates of literacy and a high number of residents with no formal qualifications compared to the National average. High rates of social deprivation in parts of Wandsworth and Lambeth are reflected in lower than average levels of educational attainment at GCSE level and higher.

There is relatively dense coverage of primary schools and nurseries to the south and east of the OA in the existing residential hinterland although there are only three within the OA boundary. Whilst there is capacity at primary schools and nurseries that fall within the 800m walk net of the OA, which could accommodate some population growth, the quality of northwest to southeast pedestrian, cycle and public transport links are very poor.

There are no secondary schools within the OA although there are a number within close proximity in Lambeth, Wandsworth and Westminster that could potentially accommodate population growth. Again, pedestrian, cycle and public transport links are currently very poor however.

### **Waste**

Cringle Dock waste transfer station is located on the riverside to the east of Battersea Power Station within the OA and is also a protected wharf. The transfer station handles the majority of Lambeth's domestic waste and some commercial waste. Its current throughput is 165kt tonnes per annum. The process comprises the emptying of bin lorries and the compacting of waste into containers for transfer by river to Mucking Landfill, Essex.

The building in which the process is located is an ageing utilitarian structure and whilst most of the compacting and transferring of waste is enclosed there are some issues with odours. At present this is not a major issue as the site is surrounded by industrial uses with residential located uses some way to the east. Waste minimisation and recycling initiatives are currently limited throughout the OA.

### **Transport and travel**

The OA has a substantial mix of transport infrastructure, including parts of the Transport for London Road Network (TLRN), local borough roads, commuter rail lines and stations leading to two central London termini, London Underground, Victoria Line services at Vauxhall and bus routes throughout the OA with services focused at Vauxhall bus station. Designated walking and cycling routes also exist, although they vary in terms of quality and coverage. The public

transport accessibility level (PTAL) ranges from excellent (PTAL 6) in and around Vauxhall to poor (PTAL 0-2) in the south and west end of the OA.

All transport modes in the OA, including highways, are subject to varying levels of crowding and congestion. It is forecast that travel conditions will continue to deteriorate, particularly in the peak periods as population and employment continue to grow. If no transport improvements or interventions are made, then the lack of key transport links and capacity constraints become a key barrier to the future growth of the area.

The pedestrian and cycle network within the OA is generally of low quality, is dominated by traffic and does not promote walking or cycling. The condition of footways and street clutter is also a problem particularly along Nine Elms Lane, Wandsworth Road and Battersea Park Road. Pedestrian way finding and signage throughout the OA is poor in quality and uncoordinated. Existing land use patterns and the fragmented land ownership also serve to reduce connectivity and legibility throughout the OA. The Thames Path, which runs through the OA from Battersea Park to Vauxhall and along Albert Embankment, is part of the strategic Thames Path National Trail. At points within the OA the river path is disconnected from the river and varies in quality along the route.

## 2.3 Identifying sustainability issues and problems

Task A3 of the SEA Directive that requires the identification of sustainability issues is integral to the Sustainability Appraisal process, and informs Stage B of the process where the options and policies within the OAPF are tested against the appraisal objectives.

The identification of sustainability issues meets the requirements of the SEA Directive to identify *“any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of particular environmental performance.”*

The following list of issues was developed from the review of plans, programmes and policies and the baseline data summarised in 2.2 above. Relatively low incomes, poor housing, health, and community facilities and social exclusion through poor accessibility and a lack of physical and social cohesion are all key issues arising from the baseline data. However, this SA also considers environmental issues that in many cases are inter-related with social and economic issues.

The various issues are summarised in a London context as determined from the assessment of policies, plans and programmes. They are then reflected in the context of the Opportunity Area whilst taking into account specific localities within the OA where relevant.

**Table 3 - Opportunity Area issues**

<b>Opportunity Area issue</b>
<b>A. Housing:</b> Insufficient mix and quantity of housing within the OA and a limited range of dwelling sizes. The amount of affordable housing is below London Plan Standards.
<b>B. Equality and diversity:</b> Worsening trends of social inequality are prevalent in the OA along with comparatively high levels of social deprivation and child poverty. There is also a lack of community facilities and organisations.
<b>C. Education:</b> There is a shortage in the number of schools and nurseries within the OA, and poor overall standards of educational attainment. Links to existing educational facilities are poor.

Opportunity Area issue
<p><b>D. Safety and security:</b> There are high levels of crime within the OA and a strong perceived fear of crime. The poor quality of the public realm and streetscape contributes to the perceived fear of crime.</p>
<p><b>E. Transport and travel:</b> Battersea and Nine Elms currently suffer from poor public transport links and low levels of accessibility, whilst Vauxhall suffers from chronic public transport capacity constraints. Worsening congestion, especially at Vauxhall gyratory is a major issue, and pedestrian and cycling facilities throughout the OA are poor.</p>
<p><b>F. Health and wellbeing:</b> The OA population suffers from poor overall health outcomes as a result of social deprivation and poor access to primary health care facilities. Key health indicators in the OA are all worse than both London and National averages.</p>
<p><b>G. Stable economy:</b> Certain sectors are under represented in the OA economy and there is a lack of diversity in job opportunities. There is a disproportionate amount of semi-skilled and un-skilled workers within the OA.</p>
<p><b>H. Employment:</b> There is a high rate of worklessness and benefit dependence in parts of the OA particularly amongst black, Asian, ethnic and minority groups. A disproportionate amount of the population are on state benefits.</p>
<p><b>I. Regeneration and land use:</b> Much of the OA is either brownfield or currently underutilised in terms of development potential in accordance with its CAZ classification. There is potential for conflict between competing land uses.</p>
<p><b>J. Heritage and the built environment:</b> Protection and enhancement of the existing built environment (including architectural distinctiveness, townscape, landscape and archaeological heritage) poses a challenge to the location and scale of future development. Listed and historic buildings within the OA or nearby include the Battersea Power Station, Lambeth Palace, and Westminster World Heritage Site.</p>
<p><b>K. Open space:</b> The quality and quantity of open space and the public realm in the OA is poor. Linkages between areas are unclear and the OA is generally difficult to navigate.</p>
<p><b>L. Climate change:</b> Current patterns of land use and related energy consumption within the OA are unsustainable and result in high overall CO2 emissions. Vehicle trip generation within the OA is also very high.</p>
<p><b>M. Biodiversity:</b> The physical environment of the OA is severely degraded with very little in the way of open space, mature trees or green spaces supporting biodiversity. The Thames embankment provides little in the way of habitat or biodiversity.</p>
<p><b>N. Natural resources:</b> increasing demand for water, use of energy, pressure on biodiversity and open space arising from population growth and increased economic activity.</p>
<p><b>O. Water quality and resources:</b> Most of the OA is within a level 3 flood zone, and parts are within a level 2 flood zone. Significant new development will increase surface water run off and increase the potential for flooding and pollutant run off.</p>

<b>Opportunity Area issue</b>
<b>P. Waste:</b> Waste minimisation and recycling initiatives are limited within the OA. A potential conflict exists between the Cringle Dock Transfer Station and future surrounding land uses.
<b>Q. Air quality:</b> The OA is within an Air Quality management Area and currently features degraded air quality.

## 2.4 The SA framework

Task A4 of the SEA Directive requires the establishment of sustainability objectives, along with identifying relevant indicators that track progress towards achieving objectives. The objectives relate directly to the sustainability issues identified in section 2.3 above. The SA framework provides a way in which sustainability effects can be described, assessed and compared. The sustainability objectives below are distinct from those of the OAPF but in some cases will overlap.

**Table 4 – Sustainability objectives and indicators**

Sustainability objectives	Indicator and source
<b>1. Housing:</b> Increase the amount and mix of housing within the OA and meet revised London Plan affordable housing targets.	<ul style="list-style-type: none"> <li>• Number of new homes completed per annum (LB Lambeth &amp; Wandsworth, annual monitoring report; GLA, total number of housing completions in London)</li> <li>• Number of dwellings owner occupied (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> <li>• Mix of dwelling size; increase in family units (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> <li>• Increase in affordable housing to meet revised London Plan Standards (LB Lambeth &amp; Wandsworth Annual monitoring report; London Plan annual monitoring report)</li> </ul>
<b>2. Equality and diversity:</b> Create a more cohesive community eliminating social deprivation and child poverty. Promote social inclusion, interaction, and skills development and increase the number and accessibility of community facilities.	<ul style="list-style-type: none"> <li>• Number of community groups/organisations (LB Lambeth &amp; Wandsworth Annual monitoring report)</li> <li>• Number of community facilities (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> <li>• Rate of social deprivation (Department of Communities and Local Government (DCLG), index of multiple deprivation)</li> </ul>
<b>3. Education:</b> Ensure new schools are appropriately sited and cater for the predicted child yield. Ensure all children have access to a quality education and ensure opportunities exist for on-going training. Improve accessibility to existing educational facilities.	<ul style="list-style-type: none"> <li>• Number of pupils attaining five or more A – C grade GCSE's (Department for Education and Skills, annual performance tables)</li> <li>• Percentage of population in tertiary education (Higher Education Statistics Agency, annual report)</li> <li>• Access to educational facilities (LB Lambeth &amp; Wandsworth, annual highways report on capital works)</li> <li>• New schools and training institutions established (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> </ul>
<b>4. Safety and security:</b> Reduce the amount of crime and reduce the fear of crime through building and public realm design principles.	<ul style="list-style-type: none"> <li>• Total number of crimes (Total number of crimes reported to the police, British crime survey)</li> <li>• Burglary rate per 1,000 households (London Health Strategy High Level Health Indicator)</li> <li>• Percentage of buildings that achieve secure by design classification (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> <li>• Establishment of a new neighbourhood police force (LB Lambeth &amp; Wandsworth, annual monitoring</li> </ul>

Sustainability objectives	Indicator and source
	report)
<p><b>5. Health and wellbeing:</b> Improve overall levels of health across the OA, reduce disparities between different groups and improve access to primary health care.</p>	<ul style="list-style-type: none"> <li>• Life expectancy at birth (Office of National Statistics (ONS), London Health Strategy high level indicator)</li> <li>• Infant mortality rate (ONS, London Health Strategy high level indicator)</li> <li>• Number of primary health care facilities (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> </ul>
<p><b>6. Transport and travel:</b> Increase capacity and reduce congestion at the Vauxhall interchange, substantially increase public transport capacity and accessibility in the Nine Elms and Battersea Areas, and achieve modal shift from private vehicle trips to sustainable forms of transport. Establish new pedestrian and cycle facilities.</p>	<ul style="list-style-type: none"> <li>• Public Transport Accessibility Score (PTAL) (Transport for London, PTAL maps)</li> <li>• Number of Personal Injury Accidents (PIA's) (LB Lambeth and Wandsworth, annual highway safety report)</li> <li>• Vehicle movements (LB Lambeth and Wandsworth and TfL vehicle counts)</li> <li>• New public transport station capacity and stops (London Plan annual monitoring report)</li> <li>• New pedestrian and cycle facilities (LB Lambeth and Wandsworth, annual highway safety report)</li> </ul>
<p><b>7. Stable economy:</b> To encourage a strong, diverse and stable economy in the OA, to establish new businesses, and improve the resilience of existing businesses.</p>	<ul style="list-style-type: none"> <li>• GFA per use class (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> <li>• Number of new business start-ups per annum by industry sector (IBDR indicator identified by the London Development Agency London economic snapshot)</li> <li>• Business survival rates (Small Business Service, LSDC quality of life indicator)</li> </ul>
<p><b>8. Employment:</b> To offer everyone the opportunity for rewarding, well-located and satisfying employment and creating jobs for people living within the OA</p>	<ul style="list-style-type: none"> <li>• Unemployment rate (ONS, ward and super output area)</li> <li>• Total employment in the OA (ONS, ward and super output area)</li> </ul>
<p><b>9. Regeneration and land use:</b> Use land efficiently, maximising development on appropriate sites and optimising housing densities whilst creating quality public spaces and appropriate community facilities.</p>	<ul style="list-style-type: none"> <li>• New residential units (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> <li>• GFA per use class (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> <li>• Number of planning applications per annum (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> </ul>
<p><b>10. Heritage and the built environment:</b> Enhance the quality and character of the townscape across the OA, including the quality of the built and historic environment and listed buildings, whilst protecting and where possible enhancing local and</p>	<ul style="list-style-type: none"> <li>• Relationship of tall buildings to strategic and local views (LB Lambeth &amp; Wandsworth, annual monitoring report &amp; views assessments submitted with planning applications)</li> <li>• Relationship of tall buildings to the streetscape (LB Lambeth &amp; Wandsworth, annual monitoring report &amp; design statements submitted with planning applications)</li> <li>• Number of grade I and grade II listed buildings</li> </ul>

Sustainability objectives	Indicator and source
strategic views including the relationship with the north bank of the Thames.	(English Heritage, English heritage register of buildings at risk – London Plan annual monitoring report) <ul style="list-style-type: none"> <li>Recording of archaeological information and sites of significance (English Heritage, register of archeological sites)</li> </ul>
<b>11. Open space:</b> Improve the quality of the public realm and increase the number of public open spaces.	<ul style="list-style-type: none"> <li>Total area of open space (LB Lambeth &amp; Wandsworth, annual monitoring report; London Plan annual monitoring report)</li> </ul>
<b>12. Climate change:</b> Encourage energy generation from renewable and low carbon sources, and promote energy efficiency. Establish a CHP network.	<ul style="list-style-type: none"> <li>Number of dwellings built to Code for Sustainable Homes Level 3 (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> <li>Number of mixed-use schemes built to BREEAM standards (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> <li>Number of dwellings linked to CHP (LB Lambeth &amp; Wandsworth, annual monitoring report)</li> </ul>
<b>13. Biodiversity:</b> Restore and enhance bio-diversity across the OA including the riparian area of the Thames.	<ul style="list-style-type: none"> <li>Planting schedule for new open space</li> <li>Area of green roofs and living walls in new buildings (LB Lambeth &amp; Wandsworth, annual monitoring report &amp; planning permissions)</li> <li>Total area of open space (LB Lambeth &amp; Wandsworth, annual monitoring report &amp; planning permissions)</li> <li>Area of managed retreat/planted riparian areas on the Thames Embankment (LB Lambeth &amp; Wandsworth, annual monitoring report &amp; planning permissions)</li> </ul>
<b>14. Natural resources:</b> recycle demolition materials in construction and minimise the consumption of water and energy in developments.	<ul style="list-style-type: none"> <li>Number of dwellings built to Code for Sustainable Homes Level 3 (LB Lambeth &amp; Wandsworth, annual monitoring report &amp; planning permissions)</li> <li>Number of mixed-use schemes built to BREEAM standards (LB Lambeth &amp; Wandsworth, annual monitoring report &amp; planning permissions)</li> <li>Estimated water consumption (OFWAT – this is also a UK Government sustainability indicator)</li> </ul>
<b>15. Water resources:</b> Improve access to the Banks of the Thames and maintain and improve the quality of ground and river water during and post-construction, and minimise the risk of flooding.	<ul style="list-style-type: none"> <li>Number of schemes incorporating SUDS principles and natural filtration (LB Lambeth &amp; Wandsworth, annual monitoring report &amp; planning permissions)</li> <li>Flood plain storage capacity (DCLG, area of functional floodplain)</li> <li>Thames Water Quality sampling (DEFRA, rivers of good biological quality)</li> </ul>
<b>16. Soil conditions and contamination:</b> Ensure all contaminated sites are re-mediated prior to development	<ul style="list-style-type: none"> <li>Soil samples and ground water monitoring before and following site remediation (LB Lambeth &amp; Wandsworth conditions of planning permissions, sampling results from individual sites)</li> </ul>
<b>17. Waste:</b> To minimise production	<ul style="list-style-type: none"> <li>Volume of waste recycled or composted</li> </ul>

Sustainability objectives	Indicator and source
of waste across all sectors in the OA and increasing rates of re-use, recycling and recovery rates. Composting of all green waste.	<p>(DEFRA, municipal waste recycled or composted – London Plan annual monitoring report)</p> <ul style="list-style-type: none"> <li>• Cubic metres of waste arising by sector GFA (DEFRA, EA, ODPM, GLA, Waste arising by sector)</li> </ul>
<b>18. Air quality:</b> Reduce all forms of air pollution and improve the atmosphere in the Air Quality Management Area.	<ul style="list-style-type: none"> <li>• Air Pollution Index (DEFRA, estimated emissions of NO<sub>2</sub>, PM<sub>10</sub> and SO<sub>2</sub> – this is also a UK sustainable development indicator)</li> <li>• Meeting the objectives of the AQMA (DEFRA, estimated emissions of NO<sub>2</sub>, PM<sub>10</sub> and SO<sub>2</sub> – this is also a UK sustainable development indicator)</li> </ul>



## Compatibility of sustainability objectives

The above sustainability objectives promote an integrated approach to economic, environment and social factors. Many of them overlap and cannot be categorised as a stand-alone topic. The table below illustrates how the sustainability objectives cover the requirements of the SEA Directive.

**Table 5 – relationship of sustainability objectives to SEA directive issues**

<b>SEA directive Issue</b>	<b>SA Objectives</b>
Biodiversity	6, 9,11,12,13,14,15,18
Population	1,2,3,4,5,6,7,8
Human health	1,2,3,4,5,9
Fauna	11,12,13,18
Flora	11,12,13 15,16,18
Soil	15,16
Water	13,14,15,16
Air	6,12,14,18,
Climate factors	6,12,13,14,18
Material assets	1,2,5,7,8,9
Cultural heritage	9,10
Landscape	9,10,11

The Sustainability Objectives were then tested for compatibility as a requirement of the SEA directive, which aims to highlight potential conflicts between the objectives. The majority of the sustainability objectives are compatible however the following table highlights potentially conflicting objectives:

**Table 6 – compatibility of sustainability objectives**

Sustainability Objective	1. Housing																				
	2. Equality & Diversity	+																			
	3. Education	+	+																		
	4. Safety & Security	-	+	+																	
	5. Health & Wellbeing	+	+	+	+																
	6. Transport & Travel	+	+	+	+	+															
	7. Stable Economy	+	+	+	+	+	+														
	8. Employment	+	+	+	+	+	+	+													
	9. Regeneration & land use	+	+	+	+	+	+	+	+												
	10. Heritage & Built Environ.	+	+	+	+	+	+	-	+	-											
	11. Open Space	+	+	+	+	+	+	+	+	+	+										
	12. Climate Change	+	+	+	+	+	-	-	+	-	+	+									
	13. Bio-Diversity	+	+	+	+	+	+	-	+	-	+	+	+								
	14. Natural Resources	+	+	+	+	+	-	-	-	-	+	+	+	+							
	15. Water Resources	+	+	+	+	+	+	+	+	-	+	+	+	+	+						
	16. Soil Conditions & contam.	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+					
	17. Waste	+	+	+	+	+	+	-	-	-	+	+	+	+	+	+	+				
	18. Air Quality	+	+	+	+	+	-	-	+	-	+	+	+	+	+	+	+	+	+	+	+
		1. Housing	2. Equality and Diversity	3. Education	4. Safety and Education	5. Health and Wellbeing	6. Transport and Travel	7. Stable Economy	8. Employment	9. Regeneration and Land use	10. Heritage & Built Environ.	11. Open Space	12. Climate Change	13. Bio-Diversity	14. Natural resources	15. Water Resources	16. Soil Conditions & contam	17. Waste	18. Air Quality		
Sustainability Objectives																					

**+ compatibility**  
**- potential incompatibility**

The outcome of this exercise highlights that there are areas of potential incompatibility and conflict between the promotion of a stable economy, regeneration, housing, transport interventions, employment and objectives relating to environmental sustainability.

Identifying these potential incompatibilities is useful in that it highlights the need to mitigate and minimise the impact of more jobs, housing and regeneration and the associated consumption of resources and emissions. The most important action is to resolve these conflicts through mitigation of environmental impacts to ensure sustainable outcomes can be delivered by the framework.

## 2.5 Consulting on the scope of the SA

Task A5 of the SEA requires the regional planning body to consult the environmental consultation bodies on the scope and level of details of the SA. Four statutory environmental consultation bodies are designated in the SEA regulations:

**Table 7 – statutory consultees**

<b>Statutory bodies</b>	<b>Responses</b>
The Countryside Agency	Consultation responses will be collated here once the formal consultation on the Consultation Draft OAPF end in January 2010.
English Heritage	
English Nature	
The Environment Agency	

These statutory bodies are being consulted as part of the statutory public consultation process on the Consultation Draft OAPF, November 2009.

The outcome of consultation with these bodies will need to be collated and changes made to the SA framework and relevant objectives where necessary.

## **3. Developing options and assessing effects**

### **3.1 Testing the OAPF objectives against the SA framework**

#### **The OAPF Objectives**

Task B1 of the SEA directive requires the testing of OAPF objectives against the sustainability framework. Eight separate objectives have been developed as set out below. The over-arching objectives for the consultation draft OAPF are derived from the following key policy sources:

- London Plan Consolidated with Alterations since 2004, February 2008 (referred to in this document as the London Plan)
- A new plan for London, Proposals for the Mayor's London Plan, April 2009
- Planning for a better London, July 2008
- London Borough of Lambeth Unitary Development Plan (UDP), adopted in August 2007
- London Borough of Wandsworth Core Strategy: Submission Version, March 2009

#### **OBJECTIVE 1**

To achieve London's growth within its boundaries, protecting and enhancing open spaces and the natural environment. Deliver housing including affordable housing to meet the highest access, design and environmental standards. Secure social infrastructure to support new and existing residents.

#### **OBJECTIVE 2**

To ensure London's continued economic success with strong and diverse long term economic growth, to promote its world city role and continue to strengthen its Central Activities Zone (CAZ).

#### **OBJECTIVE 3**

To promote social inclusion and tackle deprivation and discrimination.

#### **OBJECTIVE 4**

To ensure a joined up approach to planning diverse places and for delivery of transport and other infrastructure needed to support growth.

#### **OBJECTIVE 5**

To meet the environmental challenge, making London an exemplary world city in mitigating and adapting to climate change and a more attractive, well-designed and green city.

#### **OBJECTIVE 6**

To protect and enhance London's historic assets and their settings, based on an understanding of their special character as part of the wider urban improvement agenda.

**OBJECTIVE 7**

Improve the public realm and connect green spaces and other areas, providing a clean, safe and well-managed environment with high quality buildings and design.

**OBJECTIVE 8**

To set out a strategic and co-ordinated tall buildings strategy which considers both local and strategic impacts within the broader regeneration context.

**OBJECTIVE 9**

Encourage the Boroughs to pool Section 106 contributions to fund major transport and public realm improvements. Promote a standard charge approach in partnership with the Boroughs.

**Testing the objectives**

The following matrix appraises the Consultation Draft OAPF objectives against the sustainability framework developed in Section 2.4. The matrix provides a rigorous framework in which to test the sustainability of the OAPF objectives and identify potential conflicts, and in doing so highlighting objectives that may need to be altered.

**Table 8 – compatibility of the OAPF objectives and sustainability appraisal objectives**

Sustainability appraisal objectives	VOAPF objectives							
	<b>OBJECTIVE 1</b> To achieve London’s growth within its boundaries, protecting and enhancing open spaces and the natural environment. Deliver housing including affordable housing. Secure social infrastructure to support new and existing residents.	<b>OBJECTIVE 2</b> To ensure London’s continued economic success with strong and diverse long term economic growth, to promote its world city role and continue to strengthen its Central Activities Zone (CAZ).	<b>OBJECTIVE 3</b> To promote social inclusion and tackle deprivation and discrimination.	<b>OBJECTIVE 4</b> To ensure a joined up approach to planning diverse places and for delivery of transport and other infrastructure needed to support growth.	<b>OBJECTIVE 5</b> To meet the environmental challenge, making London an exemplary world city in mitigating and adapting to climate change and a more attractive, well-designed and green city.	<b>OBJECTIVE 6</b> To protect and enhance London’s historic assets and their settings, based on an understanding of their special character as part of the wider urban improvement agenda.	<b>OBJECTIVE 7</b> Improve the public realm and connect green spaces and other areas, providing a clean, safe and well-managed environment with high quality buildings and design.	<b>OBJECTIVE 8</b> To set out a strategic and co-ordinated tall buildings strategy which considers both local and strategic impacts within the broader regeneration context.
1. Housing	√	√	√	√	√	?	√	√
2. Equality and Diversity	√	√	√	√	√	√	√	√
3. Education	√	√	√	√	√	√	√	√
4. Safety & Security	√	√	√	√	√	√	√	√
5. Transport & Travel	?	√	√	√	√	√	√	√
6. Health & Wellbeing	?	√	√	√	√	√	√	√
7. Stable Economy	√	√	√	√	√	√	√	√
8. Employment	√	√	√	√	√	?	?	√
9. Regeneration & Land Use	√	√	√	√	√	?	√	?
10. Heritage & built environment	√	?	√	√	√	√	√	?
11. Open Space	√	?	√	√	√	√	√	√
12. Climate Change	√	?	√	√	√	√	√	√
13. Biodiversity	?	?	√	√	√	√	√	√
14. Natural Resources	?	?	√	√	√	√	√	√
15. Water Resources	?	?	√	√	√	√	√	√
16. Soil Conditions and Contam.	?	√	√	√	√	√	√	√
17. Waste	?	?	√	√	√	√	√	√
18. Air Quality	?	?	√	√	√	√	√	√

The matrix demonstrates that the Consultation Draft OAPF objectives are broadly compatible with the objectives established in the sustainability framework and there are no objectives that are either mutually incompatible or where mitigation could not resolve conflicts.

**NOTE:** Government SA guidance acknowledges some conflict will be inevitable and this is an accepted outcome of the SA process.

The most likely conflicts arise through the need to secure growth for housing, including affordable housing, employment, and related infrastructure and the need to preserve the natural environment and the character of the built environment. Whilst mitigation through planning conditions and section 106 agreements as well as sustainable building design will lessen most impacts, it is accepted that population growth will lead to an overall increase in the total amount of waste produced, energy consumed and emissions. Mitigation will however lessen per capita amounts.

### **Summary**

The appraisal of the Consultation Draft OAPF objectives and sustainability objectives has highlighted the potential for conflict, especially between those objectives protecting and enhancing the built and natural environment and those promoting growth. Similarly the process has highlighted issues concerning the amount and scale of development and the impact on the built environment, although it is noted that mitigation measures will lessen impacts.

## 3.2 Developing the OAPF capacity options

Task B2 of the SEA directive requires the development of options, and the capacity study undertaken as part of the OAPF uses the London Plan as a baseline for testing density options. A 3D block model was developed to test special capacity for new jobs and housing in the OA, and density options were used to test public highway, highways, open space and social infrastructure requirements. Five density options were developed and tested covering a range of minimum and maximum thresholds for new jobs and housing along with open space, commercial space and retail space. The preferred option is known as Revised Scenario 5, amended on the basis of consultation with key stakeholders including the London Boroughs of Lambeth and Wandsworth.

### 3.2.1 London Plan policies

Further to the baseline considerations summarised in Section 3.2, there are a number of policies from the London Plan that apply to the development options and these are summarised below.

#### Parking

The following parking standards were assumed as a baseline for testing development and transport capacity in the OA, in accordance with London Plan Annex 4:

- The maximum number of residential parking spaces in CAZ is 0.5 spaces per unit (regardless of PTAL score) for options 1-3, and 0.25 for Options 4 and 5
- The maximum number of commercial and business parking spaces in areas with variable PTAL Employment is 1 space per 1000m<sup>2</sup> – 1500m<sup>2</sup> GFA
- There is no parking provision for retail in CAZ
- The development capacity model also includes the extant permission for Battersea Power Station which comprises 3500 parking spaces (existing consent). The current Draft OAPF does not support this level of car parking but has tested it as a maximum threshold for the purpose of the transport Study. This inclusion does not fetter the mayor's decision-making powers with regard to any forthcoming planning application.

#### Jobs and housing

The London Plan indicative thresholds for jobs and housing in the OA have been applied to form the baseline for all development scenarios/options:

- 8,000 jobs and a minimum of 3,500 homes
- 8,000 jobs converted to employment floorspace
- 60/40 housing/ jobs ratio = 4,200 homes



### 3.2.2 Development capacity options

**Table 9 – summary of the development capacity options**

Option	No. of homes	No. of Jobs/GFA	Population	Parking spaces	Strategic Industrial Land	Play Space	Open Space	Explanation	Summary
<b>Option 1 – Low density residential</b>	<b>4200 homes</b> (300,000m <sup>2</sup> residential floorspace)	<b>8000 jobs</b> (200,000m <sup>2</sup> commercial floorspace)	Estimated resident population of <b>9,830</b> , and a child yield of <b>2,530</b> .	2100 residential parking spaces  135 – 200 employment parking spaces	Maintain Stewarts Road industrial area	Meets London Plan children’s play space requirements	<b>25,000sqm</b>	Option 1 assumes an average building height of 2-4 storeys. The proposed land use is predominantly employment uses at ground floor with residential above and relatively low-density development overall. Open space is calculated on the basis of the London Plan policy for site provision but does not include contributions to strategic open space.	<b>achievable</b>
<b>Option 2 – Medium density residential</b>	<b>8,500 homes</b> (560,000m <sup>2</sup> residential floorspace)	<b>8,000 jobs</b> (200,000m <sup>2</sup> commercial floorspace)	Estimated resident population of <b>19,809</b> and a child yield of <b>5,120</b>	4250 residential parking spaces  135 – 200 employment parking spaces	Maintain Stewarts Road industrial area	Meets London Plan children’s play space requirements	<b>51,000sqm</b>	Option 2 assumes an average building height of 4-7 storeys. The proposed land use is predominantly employment uses at ground floor with residential above, and medium density development with a greater requirement of open space at grade. Open space is calculated on the basis of the London Plan Policy for site provision but does not include contributions to a strategic open space.	<b>Development is achievable</b>

Option	No. of homes	No. of Jobs/GFA	Population	Parking spaces	Strategic Industrial Land	Play Space	Open Space	Explanation	Summary
<b>Option 3 – High density residential</b>	<b>16,000 homes</b> (1,120,000 m <sup>2</sup> residential floorspace)	<b>8,000 jobs</b> (200,000m <sup>2</sup> commercial floorspace)	Estimated resident population of <b>37,440</b> and child yield of <b>9,640</b>	8000 residential parking spaces  135 – 200 employment parking spaces	Maintain Stewarts Road industrial area	Meets London Plan children’s play space requirements	<b>96,000sqm</b>	Option 3 assumes an average building height of 8-10 storeys. The proposed land use is predominantly employment uses at ground floor with residential above, with a high development density overall with a significant requirement for open space at grade. Open space would be calculated on the basis of London Plan policy for site provision but does not include contributions to strategic open space.	<b>Redevelopment at this density is achievable and allows for job creation alongside open space provision being secured.</b>
<b>Option 4 – High density residential plus retail destination</b>	<b>16,750 homes</b> (1,1172,500m <sup>2</sup> residential floorspace)	<b>12,000 jobs</b> (200,000m <sup>2</sup> employment + 100,000m <sup>2</sup> retail = commercial floorspace)	Estimated resident population of <b>39,200</b> and child yield of <b>10,100</b>	4200 residential parking spaces  135 - 200 employment parking spaces 3500 consented retail parking spaces	Maintain Stewarts Road industrial area	Meets London Plan children’s play space requirements	<b>101,000sqm</b>	Option 4 assumes an average building height of 8-10 storeys. The proposed land use is predominantly employment uses at ground floor with residential above, and high density residential and retail office development with significant requirement of open space at grade.	<b>Redevelopment at this density is achievable but dependent on simultaneous major transport interventions, open space and infrastructure provision to ensure sustainable outcomes, secured through substantial s106 contributions from developers. Even with major transport interventions, there is concern regarding the potential for unsustainable growth in traffic generation and the resultant increases in congestion and emissions without further mitigation.</b>

Option	No. of homes	No. of Jobs/GFA	Population	Parking spaces	Strategic Industrial Land	Play Space	Open Space	Explanation	Summary
<b>Option 5 - High density residential plus retail and office</b>	<b>16,750 homes</b> (1,120,000 m2 residential floorspace)	<b>27,000 jobs</b> (450,000m2 employment + 100,000m2 retail = commercial floorspace)	Estimated population of <b>39,200</b> and child yield of <b>10,100</b>	8000 residential parking spaces  300 – 450 employment parking spaces  3500 consented retail parking spaces	Maintain Stewarts Road industrial area	Meets London Plan children's play space requirements	<b>101,000sqm</b>	Option 5 assumes an average building height of 8-10 storeys. The proposed landuse is predominantly employment uses at ground floor with residential above, and high density residential and retail/office development with significant requirement of open space at grade. Open space is calculated on the basis of the London Plan policy for site provision but does not include contributions to strategic open space, which is essential for development of this density.	<b>Redevelopment at this density is achievable but dependent on simultaneous major transport interventions, open space and infrastructure provision to ensure sustainable outcomes, secured through substantial s106 contributions from developers. Even with major transport interventions, there is concern regarding the potential for unsustainable growth in traffic generation and the resultant increases in congestion and emissions without further mitigation.</b>
<b>Revised Scenario 5 – High density residential plus retail and office</b>	<b>16,000 homes</b> (1,120,000 m2 residential floorspace)	<b>20,000-25,000 jobs</b> (200,000m2 mixed use OA + 60,000m2 retail + 160,000m2 office + 80,000m2 other employment uses at BPS.	Estimated resident population of <b>37,440</b> and child yield of <b>9,640</b>	4000 residential parking spaces  135-200 employment parking spaces  3500 consented retail parking spaces	Maintain Stewarts Road industrial area	Meets London Plan children's play space requirements	<b>96,000sqm</b>	Revised Scenario 5 assumes an average building height of 8-10 storeys. The proposed landuse is predominantly employment uses at ground floor with residential above, and high density residential and retail/office development with significant requirement of open space at grade. Open space is calculated on the basis of the London Plan policy for site provision but does not include contributions to strategic open space, which is essential for development of this density.	<b>Redevelopment at this density is achievable but dependent on simultaneous major transport interventions, open space and infrastructure provision to ensure sustainable outcomes, secured through substantial s106 contributions from developers. Even with major transport interventions, there is concern regarding the potential for unsustainable growth in traffic generation and the resultant increases in congestion and emissions without further mitigation.</b>

### **3.2.3 Case study comparisons**

In order to understand the SA appraisal of these options it is important to note that each option or development scenario was tested against a real-life development case study to see whether the residential unit numbers and employment floorspace figures were realistic and deliverable. The case studies used were recently completed London schemes:

- Iroko, Waterloo SE1;
- Lillington Gardens, Vauxhall Bridge Road SW1; and
- Tabard Square, London Bridge SE1.

In addition, the various development options were defined by broad development areas and were not site specific. Certain areas were excluded however where redevelopment is not envisaged, namely the Stewarts Road industrial area, existing housing, NCGM main market site and the protected wharves. The OAPF therefore attempts to identify real and/or potential development opportunities to make the assessment as realistic as possible in so far as density/scale is concerned, and this was the basis for the 3D block model.

#### **Strategic Public Open Space**

To explore opportunities for maximising opportunities in respect of open space/amenity provision the development capacity study also overlaid a strategic public open space map to the OAPF area boundary map, in addition to the communal open space that will be provided within each scheme for each option. As a guide, the St Georges's Square in Pimlico was used as a case study for the strategic public open space.

#### **Public Realm**

These options were also tested with a map overlay of a series of public realm links between existing open spaces in the surrounding area to the River Thames and a connected Thames Path, along with the potential to include a bridge link across the River Thames.

### 3.3 Predicting and evaluating the effects

Tasks B3 and B4 of the SEA directive requires the prediction and evaluation of effects of the capacity options, and this is set out in Table 10 below with reference to the sustainability objectives and related indicators.

**Table 10 – predicting and evaluating the effects of the capacity options**

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
<b>1. Housing</b>	Number of new homes completed per annum	Yes	+	+	++	++	++	++	<i>The phasing of housing under all options will be dependant on planning applications coming forward and approvals, although the OAPF is based on the London Plan period to 2026.</i>  <b>Option 5 revised scenario</b> <i>Likelihood: medium/high Magnitude: major Temporary or permanent: permanent Timescale: long term</i>
	Number of dwellings owner/occupied	Yes	- 2,730	+ 5,525	++ 10,400	++ 10,887	++ 10,887	++ 10,400	<i>The London Plan density target for the OAPF area sets an indicative threshold of 3500 new homes although Options 3 – 5 propose many more in the form of high density mixed use schemes. The tenure mix for each of the 5 options is 35% affordable: 65% private.</i>  <b>Option 5 revised scenario</b> <i>Likelihood: medium/high Magnitude: major Temporary or permanent: permanent Timescale: long term</i>
	Increase in affordable housing to meet London Plan revised standards	Yes	- 1,470	- 2,975	++ 5,600	++ 5,863	++ 5,863	++ 5,600	<i>The London Plan density target for the OAPF area sets an indicative threshold of 3500 new homes although Options 3 – 5 propose many more in the form of high density mixed use development. The tenure mix for each of the 5 options is 35% affordable: 65% private.</i>

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
									<b>Option 5 revised scenario</b> Likelihood: medium/high Magnitude: major Temporary or permanent: permanent Timescale: medium to long term
	Mix of Dwelling size	Yes	+	+	++	++	++	++	All capacity options propose a mix of unit sizes with a high proportion of family units. The average number of persons per unit is 2.34 for all options.  <b>Option 5 revised scenario</b> Likelihood: medium/high Magnitude: Magnitude: entire OA aside from residual industrial areas and existing residential Temporary or permanent: permanent Timescale: medium to long term
<b>2. Equality and Diversity</b>	Number of community organisations	Yes	-	-	?	?	?	?	The establishment of community organisations and groups will be dependant on the creation of a balanced, mixed and sustainable community, and the provision of suitable facilities and infrastructure to enable community groups to establish and thrive. Aside from identifying the need for essential social infrastructure (eg schools, primary care facilities and open space), It is unclear what measures the OAPF proposes to encourage the establishment of community organisations.  <b>Option 5 revised scenario</b> Likelihood: low/ medium Magnitude: major Temporary or permanent: permanent Timescale: medium to long term
	Number of Community Facilities	Yes	-	-	+	++	++	++	The OAPF identifies the need for essential social infrastructure including schools, primary care facilities, open space, play space etc, with the number, size and quality of facilities dependant on the Magnitude of development. Option 5 delivers the greatest number of community facilities in line with higher demand and increased s106 funding.  <b>Option 5 revised scenario</b> Likelihood: medium Magnitude: major

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
									Temporary or permanent: permanent Timescale: medium to long term
	Rate of social deprivation	Yes	-	-	+	+	++	++	Social deprivation is an overall measure of a range of social and economic indicators including health, education and income. Option 5 provides the best outcome in terms of social infrastructure and economic benefits, and will result in a subsequent reduction in social deprivation across the OA.  <b>Option 5 revised scenario</b> Likelihood: medium Magnitude: major Temporary or permanent: permanent Timescale: medium to long term
<b>3. Education</b>	Number of pupils attaining five or more A-C grade GCSE's	Yes	-	-	+	+	++	++	Although the number of schools is based on the expected child yield for each option, option 5 will deliver the best educational results given the measures proposed to reduce social deprivation which has a direct correlation to educational attainment.  <b>Option 5 revised scenario</b> Likelihood: medium Magnitude: major Temporary or permanent: permanent Timescale: medium to long term
	Percentage of population with tertiary or vocational qualifications	Yes, picked up through census ward data	-	-	-	+	++	++	Option 5 will deliver the best educational results, including participation in tertiary education, given the level of social infrastructure and economic measures to reduce social deprivation.  <b>Option 5 revised scenario</b> Likelihood: medium Magnitude: medium Temporary or permanent: permanent Timescale: medium to long term
	Accessibility to educational facilities	Yes, through improved public transport,	-	-	-	+	++	++	Existing links to educational facilities outside the OA are poor. Option 5 delivers the greatest number of accessibility improvements and will dramatically improve access to educational facilities outside the OA.

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
		pedestrian and cycle links.							<b>Option 5 revised scenario</b> Likelihood: medium/high Magnitude: Major Temporary or permanent: permanent Timescale: medium to long term
	New schools and training institutions established	Yes	-	-	-	+	++	++	The number of schools, nurseries and training facilities is based on the projected child yield for each capacity option. Option 5 has a projected child yield of 10,100 children.  <b>Option 5 revised scenario</b> Likelihood: medium/high Magnitude: major Temporary or permanent: permanent Timescale: medium to long term
<b>4. Safety and security</b>	Number of crimes	Yes	+	+	+	+	++	++	All five options would incorporate secure by design building principles and natural surveillance of public spaces. It is difficult to predict whether the <u>total</u> amount of crime will differ between options given the range in projected population between the options. The decrease in social deprivation associated with Option 5 is expected to lead to a decrease in overall crime throughout the OA.  <b>Option 5 revised scenario</b> Likelihood: high Magnitude: medium Temporary or permanent: permanent Timescale: medium to long term
	Burglary rate per 1000 households	Yes	-	-	+	++	++	++	All five options would incorporate secure by design building principles and natural surveillance of public spaces. It is difficult to predict whether the <u>total</u> amount of crime will differ between options given the range in projected population between the options. The decrease in social deprivation associated with Option 5 is expected to lead to a decrease in overall crime including burglaries throughout the OA.  <b>Option 5 revised scenario</b> Likelihood: high



EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
									Magnitude: medium Temporary or permanent: permanent Timescale: medium to long term
	Percentage of buildings that achieve secure by design classification	Yes	++	++	++	++	++	++	All five options would incorporate secure by design building principles and natural surveillance of public spaces  <b>Option 5 revised scenario</b> Likelihood: high Magnitude: medium to major Temporary or permanent: permanent Timescale: medium to long term
	Establishment of a new neighbourhood police force	Yes	-	-	+	++	++	++	As part of the social infrastructure required to service and protect the projected population of 39,200 under both Options 4 and 5, a local police station and police force will be required. This will also provide further disincentive to crime and drive down the crime rate associated with option 4 and 5.  <b>Option 5 revised scenario</b> Likelihood: high Magnitude: medium to major Temporary or permanent: permanent Timescale: medium to long term
<b>5. Health and Wellbeing</b>	Life expectancy at birth	Yes, Borough health information and census data.	-	-	+	++	++	++	All five options will improve health outcomes through a range of social and physical measures, although the decrease in social deprivation associated with Option 5 is expected to maximise health benefits, including life expectancy.  <b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: medium to long term
	Infant mortality rate	Yes	+	+	+	++	++	++	All five options will improve health outcomes through a range of social and physical measures, although the decrease in social deprivation associated with Option 5 is expected to maximise health benefits, including decreasing infant mortality.

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
									<b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: medium to long term
	Number of primary care facilities	Yes	-	-	-	+	++	++	All five options will improve health outcomes through a range of social and physical measures, although the decrease in social deprivation associated with Option 5 is expected to maximise health benefits, including provision of primary care facilities.  <b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: medium to long term
<b>6. Transport and Travel</b>	Public transport Accessibility Score (PTAL)	Yes, TfL PTAL maps	-	-	+	+++	+++	+++	Options 1, 2 and 3 would be adequately serviced by enhancements to bus services and bus routes, although PTAL would not be significantly improved. Option 3 also includes significant improvements to facilities at Vauxhall interchange. Options 4 and 5 require the same level of service enhancements as Option 3 along with the Northern Line Extension from Kennington to Battersea, drastically improving the PTAL score in Nine Elms/Battersea.  <b>Option 5 revised scenario</b> Likelihood: medium/high Magnitude: major Temporary or permanent: permanent Timescale: medium to long term
	Number of personal injury accidents (PIA's)	Yes	?	?	?	-	-	?	All options will result in an increase in vehicle trip generation, particularly options 4 and 5, and a subsequent increase in personal injury accidents can be expected. However, measures to improve public transport and road safety and reduce traffic speeds will be implemented resulting in lower per capita PIA's.  <b>Option 5 revised scenario</b> Likelihood: medium Magnitude: major

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
									Temporary or permanent: permanent Timescale: medium to long term
	Vehicle movements	Yes, Borough highways and TLRN vehicle counts.	-	--	--	--	--	--	All options will result in an increase in vehicle trip generation, particularly options 3, 4 and 5. Overall parking provision (including previously consented parking for Battersea Power Station) is a major determinant of vehicle trip generation along with land use (the retail component associated with Option 4 will be a major vehicle trip generator in this respect). NLE has the potential to significantly reduce vehicle trip generation however.  <b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: medium to long term
	New public transport station capacity and stops	Yes	+	+	+	++	++	++	Options 1, 2 and 3 will result in new bus stops and bus routes, whilst Option 3 includes significant improvements to facilities at Vauxhall interchange. Options 4 and 5 require the same level of service enhancements as Option 3 along with two new stations servicing the NLE at Nine Elms and Battersea.  <b>Option 5 revised scenario</b> Likelihood: medium/high Magnitude: major Temporary or permanent: permanent Timescale: long term
	New pedestrian and cycle facilities	Yes	++	++	++	++	++	++	All options will include improvements to pedestrian and cycle infrastructure throughout the OA, with new footways, footpaths, cycle routes and cycle storage facilities.  <b>Option 5 revised scenario</b> Likelihood: medium/high Magnitude: entire OA and surrounding area Temporary or permanent: permanent Timescale: long term
<b>7. Stable</b>	GFA per use	Yes	+	+	+	++	+++	+++	The OAPF supports residential mixed-use intensification, delivering a substantial

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
<b>Economy</b>	class								<p>increase in jobs in conjunction with housing. All 5 options will result in substantial economic benefits although Option 5 provides the greatest number of jobs and most diverse range of industry sectors. There will be an overall reduction in strategic industrial land (SIL) to allow for mixed-use development, although the Stewart's Road Industrial Area and New Covent Garden Market will remain.</p> <p><b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: long term</p>
	Number of new business start-ups per annum by industry sector	Yes	+	+	+	++	+++	+++	<p>All five options encourage new business growth although Option 5 delivers the greatest number of jobs and facilitates the most diverse range of industry sectors.</p> <p><b>Option 5 revised scenario</b> Likelihood: medium/high Magnitude: medium Temporary or permanent: permanent Timescale: medium - long term</p>
	Business survival rates	Yes	+	+	+	+	+	+	<p>All five options will encourage business growth and increase the rate of business survival</p> <p><b>Option 5 revised scenario</b> Likelihood: medium/high Magnitude: medium Temporary or permanent: permanent Timescale: medium - long term</p>
<b>8. Employment</b>	Unemployment rate	Yes, official unemployment rate by area	+	+	+	++	+++	+++	<p>All five options will encourage new business growth although Option 5 provides the greatest number of jobs and will facilitate most diverse range of industry sectors.</p> <p><b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent</p>

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
									<i>Timescale: long term</i>
	Total employment in the OA	Yes, work place surveys.	+ 8,000 jobs	+ 8,000 jobs	+ 8,000 jobs	++ 12,000 jobs	+++ 27,000 jobs	+++ 20,000 – 25,000 jobs	<p>All 5 options will result in substantial new employment opportunities although Option 5 provides the greatest number of jobs and most diverse range of industry sectors. There will be an overall reduction in strategic industrial land (SIL) to allow for mixed-use development, although the Stewart’s Road Industrial Area and New Covent Garden Market will remain.</p> <p><b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: long term</p>
<b>9. Regeneration and Land Use</b>	New residential units	Yes	+ 4,200 residential units	+ 8,500 residential units	++ 16,000 residential units	+++ 16,750 residential units	+++ 16,750 units	++ 16,000 residential units	<p>The London Plan density target for the OAPF area sets an indicative threshold of 3500 new homes although Options 3 – 5 propose substantially more housing in the form of high density mixed use development.</p> <p><b>Option 5 revised scenario</b> Likelihood: medium/high Magnitude: major Temporary or permanent: permanent Timescale: long term</p>
	GFA per use class	Yes	+ 200,000 sqm mixed use	+ 200,000 sqm mixed use	+ 200,000 sqm mixed use	++ 200,000 sqm mixed use + 100000sqm retail.	+++ 200,000 sqm mixed use + 250,000 sqm office + 200,000 sqm retail	+++ 200,000 sqm mixed use + 60,000 m2 retail + 160,000 m2 office + 80,000 m2 other employ	<p>The OAPF supports residential mixed-use intensification, delivering a substantial increase in jobs in conjunction with housing. All 5 options will result in economic benefits although Option 5 provides the greatest number of jobs and most diverse range of industry sectors. There will be an overall reduction in strategic industrial land (SIL) to allow for mixed-use development, although the Stewart’s Road Industrial Area and New Covent Garden Market will remain.</p> <p><b>Option 5 revised scenario</b> Likelihood: medium/high Magnitude: major Temporary or permanent: permanent Timescale: long term</p>

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
								ment uses	
	Number of planning applications per annum	Yes	+	+	++	+++	+++	+++	<p>Planning applications will increase with the higher density mixed use schemes associated with Options 4 and 5.</p> <p><b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: long term</p>
<b>10. Heritage and the built environment</b>	Relationship of tall buildings to strategic and local views	No	+	+	-	-	-	-	<p>The high density mixed use schemes proposed in association with Options 3 – 5 are based around buildings of 8-10 storeys in height with a cluster of taller buildings up to 150m in height at Vauxhall, potentially impacting on strategic and local views.</p> <p><b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: long term</p>
	Relationship of tall buildings to the streetscape	No	+	+	-	-	-	-	<p>Taller buildings have the potential to be imposing at street level and the articulation of built form at street level is considered by the OAPF, although can only be fully resolved through the design and planning process.</p> <p><b>Option 5 revised scenario</b> Likelihood: low-medium Magnitude: medium Temporary or permanent: permanent Timescale: long term</p>
	Number of Grade I and Grade II buildings	Yes	+	+	+	+	+	+	<p>No Grade I or Grade II listed buildings will be negatively impacted by the proposed options, however the affect on the setting of listed buildings will need to be taken into consideration.</p> <p><b>Option 5 revised scenario</b> Likelihood: low-medium</p>

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
									Magnitude: medium Temporary or permanent: permanent Timescale: long term
	Recording of archaeological information and sites of significance	Yes	+	+	+	+	+	+	If/when archaeological sites are discovered during excavation for building sites, they will need to be recorded and assessed in keeping with established protocol.  <b>Option 5 revised scenario</b> Likelihood: low Magnitude: minor Temporary or permanent: temporary Timescale: short term
<b>11. Open Space</b>	Total area of open space	Yes	+ 25,000 sqm	+ 51,000 sqm	++ 96,000 sqm	++ 101,000 sqm	++ 101,000 sqm	++ 96,000 sqm	The OAPF public realm strategy proposes an improved river walk, road environment improvements, a new linear park and strategic river links. Options 4 and 5 deliver the maximum amount of open space.  <b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: long term
<b>12. Climate Change</b>	Dwellings built to code for sustainable homes level 4	Yes	+	+	+	++	++	++	All major GLA referable applications should include on site energy efficiency measures reducing Co2 emissions. Higher density developments in options 3-5 will allow for energy efficiency to be maximised.  <b>Option 5 revised scenario</b> Likelihood: medium Magnitude: medium-major Temporary or permanent: permanent Timescale: medium to long term
	Number of dwellings linked to CHP	Yes	+	+	++	++	++	++	The London Development Authority (LDA) has undertaken an energy strategy for the OA and prepared an energy masterplan which connects the key sites within the OA to a VNEB District Heat Network (DHN) The OAPF also investigates the potential to link to other energy networks including Pimlico, Whitehall and Southbank energy schemes.

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
									<b>Option 5 revised scenario</b> Likelihood: medium Magnitude: medium-major Temporary or permanent: permanent Timescale: long term
	Number of mixed-use schemes built to BREEAM standards	Yes	+	+	+	++	++	++	All major GLA referable applications should include on site energy efficiency measures reducing Co2 emissions. Higher density developments in options 3-5 will allow for energy efficiency to be maximised.  <b>Option 5 revised scenario</b> Likelihood: medium Magnitude: major Temporary or permanent: permanent Timescale: medium to long term
<b>13. Biodiversity</b>	Planting schedule for new open space	Yes	+	+	+	+	+	+	Options 4 and 5 provide the greatest amount of green space and the greatest potential for a range of species and habitat areas to be established, however a biodiversity strategy has not been prepared in association with the OAPF.  <b>Option 5 revised scenario</b> Likelihood: high Magnitude: medium Temporary or permanent: permanent Timescale: long term
	Area of green roofs and living walls	Yes	?	?	?	?	?	?	None of the options considers the possibility of green roofs or living walls as a requirement of building design.  <b>Option 5 revised scenario</b> Likelihood: high Magnitude: minor-medium Temporary or permanent: permanent Timescale: medium/long term
	Total area of open space	Yes	+ 25,000 sqm	+ 51,000 sqm	++ 96,000 sqm	++ 101,000 sqm	++ 101,000 sqm	++ 96,000 sqm	The OAPF public realm strategy proposes an improved river walk, road environment improvements, a new linear park and strategic river links. Options 4 and 5 deliver the maximum amount of open space.



EFFECT PREDICTION TABLE									
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SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
									<b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: long term
	Area of managed retreat/planted riparian area on the Thames Embankment	Yes	-	-	-	-	-	-	Although all options include provision for open space adjacent to the Thames and a contiguous Thames Pathway, the managed retreat and/or planting of the Thames Embankment is not considered in association with any of the options.  <b>Option 5 revised scenario</b> Likelihood: high Magnitude: minor Temporary or permanent: permanent Timescale: long term
<b>14. Natural resources</b>	Number of dwellings built to Sustainability Code Level 3 standard	Yes	+	+	++	++	++	++	The London Development Authority (LDA) has undertaken an energy strategy for the OA and prepared an energy masterplan which connects the key sites within the OA to a VNEB District Heat Network (DHN), The OAPF also investigates the potential to link to other energy networks including Pimlico, Whitehall and Southbank energy schemes along with general design principles to ensure BREEAM requirements are met.  <b>Option 5 revised scenario</b> Likelihood: medium Magnitude: major Temporary or permanent: permanent Timescale: long term
	Estimated water consumption	Yes	+	+	+	+	+	+	It is envisaged that all new dwellings will be required to meet Sustainable Homes Level 3 standards with respect to water conservation.  <b>Option 5 revised scenario</b> Likelihood: high Magnitude: medium Temporary or permanent: permanent Timescale: long term

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
	Number of mixed-use schemes built to BREEAM standards	Yes	+	+	+	++	++	++	<p>All major GLA referable applications should include on site energy efficiency measures reducing Co2 emissions. Higher density developments in options 3-5 will allow for energy efficiency to be maximised.</p> <p><b>Option 5 revised scenario</b> Likelihood: medium Magnitude: major Temporary or permanent: permanent Timescale: medium to long term</p>
<b>15. Water resources</b>	Number of schemes incorporating SUDS principles and natural filtration	Yes	+	+	+	++	++	++	<p>The OAPF anticipates the integration of SUDS into the physical design of schemes, particularly options 4 and 5 where more open space can be dedicated to SUDS. Measures may include pervious surfaces and pavements, swales, basins, drainage channels, ponds, wetlands, rain gardens and green roofs.</p> <p><b>Option 5 revised scenario</b> Likelihood: high Magnitude: surrounding mixed use areas in the OA Temporary or permanent: permanent Timescale: long term</p>
	Flood plain storage capacity	Yes	+	+	+	++	++	++	<p>The OA has been identified as an area at risk of surface water flooding, sewer flooding and flooding from the Thames. Mitigation measures are proposed in the OAPF and site specific flood risk assessment for individual schemes is required. Responses will include SUDS and open space providing floodwater storage, land raising and re-shaping and other flood resistance options.</p> <p><b>Option 5 revised scenario</b> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: long term</p>
	Thames Water Quality sampling	Yes	-	-	-	-	-		<p>Thames river water quality is not considered as part of the OAPF despite the potential for release of contaminants and sediment, particularly during extended construction process.</p>

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
									<i>Option 5 revised scenario</i> Likelihood: medium Magnitude: medium Temporary or permanent: temporary Timescale: short-medium term
<b>16. Soil conditions and contamination</b>	Soil samples and ground water monitoring before and following site remediation	Yes	-	-	-	-	-	-	The OAPF does not consider the potential for soil and ground water contamination from former and current industrial uses and the subsequent need for remediation.  <i>Option 5 revised scenario</i> Likelihood: medium Magnitude: medium Temporary or permanent: temporary Timescale: short-medium term
<b>17. Waste</b>	Volume of waste recycled or composted	Yes	?	?	?	?	?	?	The OAPF includes a strategy for converting organic waste into fuel via anaerobic digestion (AD), principally using waste from NCGM. There is no overall waste management or recycling strategy for the OA however.  <i>Option 5 revised scenario</i> Likelihood: high Magnitude: major Temporary or permanent: permanent Timescale: long term
	Cubic metres of waste arising by sector	Yes	-	-	-	-	-	-	Aside from anaerobic digestion of organic waste there is no overall waste management or recycling strategy proposed in the OAPF covering the mix of land uses.  <i>Option 5 revised scenario</i> Likelihood: high Magnitude: medium-major Temporary or permanent: permanent Timescale: long term
<b>18. Air quality</b>	Air Pollution Index	Yes	-	-	--	--	--	--	The anticipated increase in vehicle movements and related emissions will negatively impact on air quality within the OA.

EFFECT PREDICTION TABLE									
Key: + positive impact, ++ major positive impact, - negative impact, -- major negative impact, ? uncertain									
SA Objectives	Target/ Indicator	Can the effects be quantified	Option 1	Option 2	Option 3	Option 4	Option 5	Option 5 (Revised Scenario)	Comments  Likelihood, magnitude, temporary or permanent, time scale
									<p><b>Option 5 revised scenario</b> Likelihood: high, although with potential to be greatly reduced Magnitude: major Temporary or permanent: temporary Timescale: long term</p>
	Meeting the objectives of the AQMA	Yes	-	-	--	--	--	--	<p>The anticipated increase in vehicle movements and related emissions will negatively impact on air quality within the OA.</p> <p><b>Option 5 revised scenario</b> Likelihood: high, although with potential to be greatly reduced Magnitude: major, particularly sites located close to highways and Vauxhall gyratory Temporary or permanent: temporary Timescale: long term</p>

### 3.4 Mitigation measures

Task B5 of the SEA directive requires the consideration of mitigation measures where negative effects have been identified, along with maximising the positive effects of the OAPF where possible. The overall impact of implementing the preferred option – Revised Scenario 5 revised scenario is predicted to be positive in terms of sustainability, however further mitigation of negative impacts is required in order to meet specific sustainability objectives. Table 11 below outlines mitigation measures in relation to sustainability objectives and identified negative impacts:

**Table 11 – proposed mitigation measures**

<b>Sustainability Objective</b>	<b>Impact and proposed mitigation</b>
<b>Equality and diversity</b>	<p><b>Establishment of community organisations</b></p> <p>Aside from identifying the need for essential social infrastructure (eg schools, primary care facilities and open space), it is unclear what measures are proposed to encourage the establishment of community organisations.</p> <ul style="list-style-type: none"> <li>• A needs assessment of community groups within the OA and surrounding areas is recommended. This should identify requirements in terms of necessary support structures and facilities to enable them to establish and flourish within the OA.</li> </ul>
<b>Transport and travel</b>	<p><b>Personal injury accidents (PIA's)</b></p> <p>Measures to improve road safety for all users and reduce traffic speeds will need to be implemented in order to avoid an increase in personal injury accidents. Specific measures to avoid an increase in PIA's could include:</p> <ul style="list-style-type: none"> <li>• Preparation of a road safety strategy that takes a holistic approach towards movement within the OA;</li> <li>• segregated pedestrian and cycle routes;</li> <li>• signalised pedestrian and cycle crossings on busy routes;</li> <li>• traffic calming measures;</li> <li>• diversion of arterial traffic away from residential areas;</li> <li>• comprehensive public transport accessibility and capacity improvements; and</li> <li>• green travel plans for both residential schemes and sites of employment.</li> </ul> <p><b>Vehicle trip generation</b></p> <p>Option 5 revised scenario will result in a marked increase in vehicle trip generation, potentially impacting on residential amenity, road safety and air quality. Overall parking provision (including previously consented parking for Battersea Power</p>

<b>Sustainability Objective</b>	<b>Impact and proposed mitigation</b>
	<p>Station) is a major determinant of vehicle trip generation along with land use. Although public transport interventions including NLE have the potential to significantly reduce vehicle trip generation, further mitigation measures need to be implemented to ensure vehicle generation is minimised including:</p> <ul style="list-style-type: none"> <li>• reduction in parking ratios for residential schemes;</li> <li>• car-free and permit free residential schemes in conjunction with improvements to public transport accessibility and capacity;</li> <li>• bus priority measures;</li> <li>• pedestrian and cycle priority measures, including segregated routes and signalised crossing facilities;</li> <li>• green travel plans for both residential schemes and sites of employment.</li> </ul>
<b>Heritage and the built environment</b>	<p><b>Relationship of tall buildings to strategic and local views</b>            High density mixed use schemes are proposed based around buildings of 8-10 storeys in height with a cluster of taller buildings up to 150m in height at Vauxhall, potentially impacting on strategic and local views. Suggested mitigation includes:</p> <ul style="list-style-type: none"> <li>• Detailed views assessment accompanying planning applications for all tall buildings.</li> </ul> <p><b>Relationship of tall buildings to the streetscape</b>            Taller buildings have the potential to be imposing at ground level. The articulation of built form is considered by the OAPF in the public realm strategy, although work on more detailed mitigation measures is likely to be required in the design and planning process. Suggested mitigation could includes:</p> <ul style="list-style-type: none"> <li>• An OA building and streetscape design guide; and</li> <li>• detailed articulation of the built form and streetscape to accompany planning applications.</li> </ul>
<b>Biodiversity</b>	<p><b>Planting schedule for open space</b>            A large area of open space is proposed to be established in association with option 5 revised scenario although it is unclear the extent to which biodiversity will be enhanced. Further measures may encompass:</p> <ul style="list-style-type: none"> <li>• A planting programme as part of a broader biodiversity strategy for the OA, to include plant species that provide habitat for birdlife and other forms of wild life, and that are native/endemic to the Lower Thames Valley Catchment.</li> </ul> <p><b>Green roofs and living walls</b>            The potential for buildings to incorporate green roofs and living walls is not considered in the OAPF, despite being recognised in London and Local policy as an important tool for introducing and enhancing bio-diversity in urban environments:</p> <ul style="list-style-type: none"> <li>• Green roofs and living walls should be incorporated into the design of buildings and promoted through a biodiversity</li> </ul>

<b>Sustainability Objective</b>	<b>Impact and proposed mitigation</b>
	<p>strategy for the OA.</p> <p><b>Managed retreat/riparian area on the Thames</b>            Although a contiguous Thames pathway is proposed, the managed retreat and/or planting of the Thames Embankment to encourage biodiversity is not considered by the OAPF. Measures may include:</p> <ul style="list-style-type: none"> <li>• Geo-technical and engineering investigations to determine the feasibility of the managed retreat of the Thames embankment; and</li> <li>• Investigating areas where the embankment could be planted and or re-instated in a semi natural state to allow colonisation of plant species.</li> </ul>
<b>Water Resources</b>	<p><b>Thames Water Quality</b>            Thames river water quality is not considered despite potential for the release of contaminants during construction entering surface water, given the close proximity of sites to the Thames and the extended construction timeframe. Proposed mitigation may include:</p> <ul style="list-style-type: none"> <li>• Site specific physical measures to contain/filter/treat contaminants during the construction phase.</li> </ul> <p><b>Soil sampling, groundwater monitoring and site remediation</b>            The potential for soil and ground water contamination from former and current industrial land uses and the subsequent need for site remediation prior to development. Possible mitigation may include:</p> <ul style="list-style-type: none"> <li>• Soil and groundwater monitoring to be undertaken prior to construction taking place;</li> <li>• Soil remediation and treatment measures to be implemented if the presence of contaminants on former industrial sites is confirmed;</li> <li>• Potential for on-site treatment of contaminated soil to be investigated rather than removal to a treatment facility.</li> </ul>
<b>Waste</b>	<p><b>Waste generation, and volume of waste recycled or composted</b>            The OAPF includes a strategy for converting organic waste into fuel via anaerobic digestion principally using waste from CGNM. There is no overall waste management or recycling strategy for the OA however:</p> <ul style="list-style-type: none"> <li>• A waste management and recycling strategy is recommended to identify ways in which the total volume of household and commercial waste can be reduced along with maximising recycling of materials;</li> <li>• Waste management methods should also be investigated including underground storage of waste to further enhance residential amenity.</li> </ul>

<b>Sustainability Objective</b>	<b>Impact and proposed mitigation</b>
<b>Air quality and climate change</b>	<p><b>Air pollution index and air quality management</b></p> <p>The anticipated increase in vehicle movements and related emissions will negatively impact on air quality within the OA, particularly adjacent to arterial routes and Vauxhall gyratory, unless a range of mitigation measures are implemented. Measures may include:</p> <ul style="list-style-type: none"> <li>• A reduction in parking ratios for residential schemes;</li> <li>• car-free and permit free residential and mixed-use schemes in conjunction with improvements to public transport accessibility and capacity;</li> <li>• bus priority measures;</li> <li>• pedestrian and cycle priority measures, including segregated routes and signalised crossing facilities;</li> <li>• comprehensive public transport accessibility and capacity improvements; and</li> <li>• green travel plans for both residential schemes and sites of employment.</li> </ul>