

Sustainability Appraisal of the Draft Further Alterations to the London Plan (Spatial Development Strategy for Greater London)

September 2006
(Reissued April 2007)

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Forum for the Future



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**Greater London Authority
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The appendices to this document may be downloaded from the website at www.london.gov.uk.

In accordance with the Town and Country Planning (London Spatial Development Strategy) Regulations 2000, a sustainability appraisal must be published with the draft alterations to the Strategy, together with a strategic environment assessment under the Environment Assessment of Plans and Programmes Regulations 2004.

Forum for the Future and Ben Cave Associates were commissioned by the Greater London Authority to undertake an independent sustainability appraisal as an iterative process during the development of the London Plan Further Alterations. This document constitutes the Sustainability Appraisal/Strategic Environment Assessment, and therefore represents the views of Forum for the Future and Ben Cave Associates and not necessarily those of the Greater London Authority or the Mayor of London.

Forum for the Future
9 Imperial Square
Cheltenham
GL50 1QB
Tel: 01242 262400
www.forumforthefuture.org.uk

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Non-technical Summary

Faced with the predicted growth of London over the timeframe of the Plan, the GLA is presented with both a huge challenge and a real opportunity to transform Greater London into *an exemplary, sustainable world city*. History, and contemporary experience, shows us that growth places enormous pressure on the environmental and social fabric of London. The London Plan sets a framework for London to develop in a way that not only maintains, but increases, quality of life for *all* Londoners.

The Sustainability Appraisal concluded that the alterations will help avoid many adverse impacts on biodiversity, health and wellbeing, equality and diversity, and will make an impact on carbon dioxide emissions, waste recycling and disposal.

The draft Further Alterations to the London Plan refines the London Plan. It ensures that the spatial development strategy sets the framework within which London's economic, social and environmental conditions continue to move in the right direction.

The Sustainability Appraisal concludes that the greatest improvements will be felt in transport and accessibility, the legacy of the 2012 Olympic and Paralympic Games, improved safety and security, the built environment, mitigating climate change, and the way in which the Plan is delivered across the sub-regions.

S1. Introduction

The purpose of the Sustainability Appraisal is to assess the potential effects of the further alterations to the Plan, to identify recommendations where mitigation measures are needed to address any potentially adverse effects, and ultimately to ensure the London Plan contributes to the sustainable development of London.

This summary highlights some of the significant sustainability challenges facing London, the issues and recommendations raised during the Sustainability Appraisal, and how these have been addressed by the GLA. It also includes a summary of the likely effects of the Plan and recommended mitigation and monitoring requirements.

The full report on the Sustainability Appraisal includes the appraisal framework, the relationship to relevant plans and policies, the evidence base, appraisal of alternatives and how the Sustainability Appraisal has influenced the Plan to date. The full appraisal findings include the likely impacts along with any necessary recommended mitigation measures, and recommendations for monitoring the effects of the Plan.

S1.1 What is sustainable development?

The UK Sustainable Development Strategy *Securing our Future* sets out the guiding principles of sustainable development as: *“we want to achieve our goals of living within environmental limits and a just society, and we will do it by means of a sustainable economy, good governance, and sound science.”* This places a clear change of emphasis on environmental limits. Put simply, sustainable development is about ensuring a better quality of life for everyone, now and for generations to come.

Good health is a key condition to enable both economic growth and sustainable development.¹ Longer, healthier, more productive human lives deliver concrete economic benefits. Good health in this sense is the very foundation of thriving modern societies and economies, and needs to be defined in much broader terms than simply the prevention of illness. The concept of good health embraces life-long physical and mental wellbeing that is essential for people to lead meaningful, enjoyable and productive lives.

S1.2 Integrated appraisal

The European Directive 2001/42/EC on Strategic Environmental Assessment and guidance from the Department for Local Communities and Government, recommend the integration of the Strategic Environmental Assessment and the Sustainability Appraisal. This approach has been taken for the London Plan.

Human health is an integral part of sustainability and the Sustainability Appraisal provides a comprehensive appraisal of the London Plan including specific recognition of health issues. Forum for the Future has worked with Ben Cave Associates, who have provided health input to the SA. The SA team has not conducted an autonomous Health Impact Assessment (HIA) but has looked at health issues arising from the alterations to the London Plan as part of this wider SA process.

Documents from the health input to the Sustainability Appraisal are available on the London Health Commission's website.²

For the remainder of the report, the term *Sustainability Appraisal* also includes Strategic Environmental Assessment and Health Impact Assessment.

In addition, a screening exercise for an Appropriate Assessment under Article 6(3) and (4) of the Habitats Directive 92/43/EEC was undertaken. This was completed following the first three iterations of the SA and is presented as a separate report in appendix C.

The Sustainability Appraisal itself should provide an analysis of the London Plan along with an opportunity to comment on the process and the results.

S1.3 The role of the London Plan

The London Plan is the development strategy for London, and sets out the strategic spatial framework for the future development of London up to 2025/26. The draft Further Alterations have been prepared in light of the Mayor's Statement of Intent on reviewing the London Plan. The review was tightly focused to address the key emerging issues facing London and other relevant matters, especially the need to adapt to and mitigate the effects of climate change.

The six objectives in the London Plan are to:

- Accommodate London's growth within its boundaries without encroaching on open spaces
- Make London a healthier and better city for people to live in

¹ David Byrne, European Commissioner for Health and Consumer Protection

² See www.londonhealth.gov.uk

- Make London a more prosperous city with strong, and diverse long-term economic growth
- Promote social inclusion and tackle deprivation and discrimination
- Improve London's accessibility
- Make London an exemplary world city in mitigating and adapting to climate change and a more attractive, well-designed and green city.

The Government has recently proposed that the Mayor should be granted a strengthened role over planning, housing, adult skills, waste, culture and sport, health, energy and climate change. This will increase the Mayor's ability to deliver sustainable development, including through the London Plan.

The Greater London Authority (GLA) Act states that the GLA must take account of three cross-cutting themes:

1. The health of Londoners
2. Equality of opportunity
3. Its contribution to sustainable development in the UK.

The Sustainability Appraisal adopted an integrated approach looking at the total effect of policies and how together they drive forward sustainable development. This approach is also reflected in the London Plan itself.

S2. The Sustainability Appraisal process

There are five stages in the Sustainability Appraisal process. The first stage (Stage A), identifying the initial scope of the SA was undertaken by Entec UK. In consultation with stakeholders, Entec defined the objectives, developed a framework, reviewed relevant plans and policies, compiled the evidence base, consulted on the scope and identified key significant issues to inform the full Sustainability Appraisal.

This report addresses Stages B and C of the Sustainability Appraisal – considering alternatives, assessing the effects and preparing the SA report. Stages D and E will be concluded later.

S2.1 Appraisal framework

Twenty objectives were agreed during Stage A to assess the potential effects of the Plan and to identify ways in which it could be improved. The objectives were presented under the London Sustainable Development Commission Framework. Each objective is supported by a set of questions that prompt detailed consideration of the policies within the draft Further Alterations to the London Plan.

SA Objective
Managing Resources
1. Biodiversity. To conserve and enhance natural habitats and wildlife, and to bring nature closer to people.
2. Water Quality and Resources. To improve the quality of surface waters and groundwater, and to achieve the wise management and sustainable use of water resources.
3. Natural Resources. To minimise the global, social and environmental impact of consumption of resources by using sustainably produced, harvested and manufactured local products.
4. Climate Change. To address the causes of climate change through minimising the emissions of greenhouse gases and ensuring that London is prepared for its impacts.
5. Air Quality. To improve air quality.
6. Energy. To achieve greater energy efficiency and to reduce reliance on fossil fuels for transport, heating, energy and electricity.
7. Waste. To minimise the production of waste across all sectors and to increase re-use, recycling, remanufacturing and recovery rates.
Getting Results
8. Built and Historic Environment. To enhance and protect the existing built environment (including architectural distinctiveness, townscape/landscape and archaeological heritage), and to ensure new buildings are appropriately designed and constructed in a sustainable way.
9. Housing. To ensure that all Londoners have access to good quality, well-located, affordable housing that promotes liveability.

SA Objective

10. Accessibility / Availability (Transport). To maximise accessibility to key services and amenities and to increase the proportion of journeys made by public transport, by bicycle and on foot (relative to those taken by car).

11. Regeneration & Land-Use. To stimulate regeneration and urban renaissance that maximises benefits to the most deprived areas and communities, and to improve efficiency in land use through the sustainable re-use of previously developed land and existing buildings.

12. Employment. To offer everyone the opportunity for rewarding, well-located and satisfying employment.

13. Stable Economy. To encourage a strong, diverse and stable economy, and to improve the resilience of businesses and their environmental, social and economic performance.

14. Creativity and Innovation. To promote creativity and innovation in the environmental and social economy (including new clean technologies, renewable energy, pollution control and the skills sector).

Taking Responsibility

15. Liveability and Place. To create and sustain liveable, mixed-use physical and social environments that promote long-term social cohesion, sustainable lifestyles and a sense of place.

16. Education and Skills. To maximise the education and skills levels of the population.

17. Ownership and Participation. To promote civic participation, ownership and responsibility, and to enable individuals, groups and communities to contribute to decision-making at neighbourhood, borough and regional levels in London.

Developing Respect

18. Health and Well-being. To maximise the health and well-being of the population and to reduce inequalities in health.

19. Safety and Security. To enhance community safety by reducing crime, antisocial behaviour and the fear of crime.

SA Objective

20. Equality and Diversity. To ensure equitable outcomes for all communities, particularly those most liable to experience discrimination, poverty and social exclusion.

The London Sustainable Development Commission have developed three *virtuous cycles* as a way of integrating sustainability 'at source'. These *virtuous cycles* have influenced this SA to ensure integration of policy objectives rather than a single-issue approach. The Individual sustainability objectives are complemented by cross-cutting approach taken by these 'virtuous cycles',³. They are as follows:

Land use, energy use, resource flows, access, transport, and climate change policies that will achieve mutual and reinforcing goals of creating sustainable, compact, inclusive, mixed-use development.

Employment, skills, mobility, and inequality policies that lead to creation of a sustainable, skilled and diverse workforce.

Health, wellbeing, safety, environmental quality, participation, and diversity policies that deliver sustainable communities

A steering group was established to oversee the Sustainability Appraisal comprising representatives from the GLA, the secretariat from the London Sustainable Development Commission and representation from the London Health Commission.

S2.2 Consultation

In order to maximise the usefulness and influence of the ongoing Sustainability Appraisal, the SA team undertook four iterations all of which included significant engagement with stakeholders and the policy authors. A series of workshops was held with the SEA statutory consultees, health stakeholders, the LSDC and a number of other organisations.

The Sustainability Appraisal has been carried out parallel in to the preparation of the alterations to the Plan. This twin-track approach is central to SA. It has meant that the results of the Sustainability Appraisal and the consultation exercises have been fed back to the policy authors and considered at each stage.

S2.3 Significant sustainability issues facing London

Many of the significant issues arising from the plan were highlighted in the Mayor's Statement of Intent and acted as a driver for the changes in the first place. The scoping report also identified the significant issues highlighted by stakeholders. The findings of stages B and C of the Sustainability Appraisal echo many of these issues and include:

Natural resources: increasing demand for water, use of energy, pressure on biodiversity and open space arising from population growth and increased economic activity.

³ The Mayor recommends that SA is built around the LSDC Framework and the 4Rs.

Housing: the need for affordable and sustainable housing and different types of dwelling, spiralling housing costs and increased demand.

Climate change: carbon dioxide emissions are on the increase and could be exacerbated by the proposed level of growth if not managed in an appropriate way. Climate change could have severe ramifications for London's population, economy, wildlife, cultural heritage, and material assets.

Equality and diversity: meeting the needs of a growing population with a changing demography, greater diversity and worsening trends of social inequalities.

Regeneration and land use: regeneration in the Thames Gateway and ensuring that the opportunities for generating a lasting and sustainable legacy from the 2012 Olympic and Paralympic Games are maximised, particularly for East London communities.

Accessibility/availability: ongoing pressure to move around London and potential adverse impacts in the form of congestion, increased pressure on public transport systems and so on.

Air quality: London still suffers from some of the worst air quality in the UK and is in breach of two EU targets.

Stable economy: continued high rates of child poverty and the relative impacts on the capacity of Londoners to engage economically and socially.

Waste: significant challenges to raise the level of recycling and self-sufficiency for waste disposal from the very low base in 2000. The challenge of maintaining a vibrant retail sector, whilst ensuring that the ethos of sustainable consumption is adhered to, including providing for new directives on waste disposal.

Safety and security: high levels of crime and perception of crime, the continuing threat of terrorism and the need to make London safe for both visitors and residents.

Employment: high levels of unemployment, particularly among Black, Asian, Ethnic and Minority groups, the removal of barriers to employment, and the key role played by London's economy within the whole UK economy.

Health and well-being: poor health outcomes and a widening disparity of relative wellbeing across London boroughs (across a range of health issues), high rates of child poverty and the relative impacts on the capacity of Londoners to engage economically and socially.

S3. Influence of the SA

From the start of the process, the SA team found that the Plan contained an impressive suite of policies. The recommendations in the Sustainability Appraisal evolved as the alterations were drafted and sought to improve the Plan incrementally.

The aim was to increase consistency of implementation of policies and adequately address a number of key issues, rather than to propose radical revisions.

The early drafting of reports and direct engagement with the policy authors, has enabled many of the recommendations made during the Sustainability Appraisal to be adopted into the Further Alterations to the London Plan. As a result, many changes

have been made both to the policies and supporting text that primarily address any significant impacts.

After consultation with the SA team the policy authors have adapted a number of policies. A few of the significant changes are listed below.

- Strengthening of the sub-regional policies in chapter five which were inconsistent with and inadequately reflected key policies in the rest of the Plan. The subsequent changes cover a range of issues including economic development, safety and security, biodiversity and climate change.
- Supporting the greater integration of climate change policies throughout the Plan and in particular, the chapters on housing and retail to reflect the Mayor's vision.
- Greater attention to the protection and enhancement of biodiversity in all areas of development.
- Acknowledgement of the problem of retrofitting sustainable design into buildings and giving greater emphasis to the potential benefits of retrofitting rather than demolition.
- Strengthening delivery of key targets such as renewable energy, across the boroughs.
- Strengthening the Mayor's commitments to mitigate and monitor the adverse effects of a regional casino.

A full list of all adopted recommendations is available in this report, and a further statement will be published, demonstrating how the Sustainability Appraisal has influenced the Plan once the London Plan has been adopted.

The Sustainability Appraisal also identified additional recommendations that would aid implementation of the Plan through key relevant strategies and supporting documentation, rather than in the Plan itself.

S4. Recommendations for mitigation measures

The policy authors have not accepted all the recommendations from the Sustainability Appraisal but have adopted those that will mitigate significant negative effects. Therefore, additional mitigation measures are proposed to reduce or avoid any potential adverse effects. These additional measures include the following.

- Monitor the effectiveness of the plan in relation to delivering Mayoral objectives in delivering a sustainable London.
- Do more to direct the flow of benefits arising from economic development to disadvantaged communities and monitor the benefits and outcomes
- Ensure that local communities do not suffer a disproportionate impact from the Olympics in the short-term, and benefit from the overall outcome of regeneration in the Lee Valley.
- Involve local communities in transport decisions.
- Minimise production of waste at source and encourage sustainable consumption and production to complement waste disposal policies.
- Avoid and if unavoidable, minimise, flood risk.
- Monitor and reduce adverse impacts from aviation, including noise and air pollution.

Again a full list of recommendations for potential mitigation measures is included in this report.

S5. The alternatives considered

A statutory part of the Sustainability Appraisal is the consideration of alternative ways of achieving a plan or programme. This encourages authorities to consider whether there are ways of achieving similar outcomes with reduced adverse economic, social and environmental effects. As the changes to the Plan are Further Alterations rather than a full replacement, two main options are considered:

- 1) Do nothing and continue applying the London Plan as it stands.
- 2) Make alterations, which strengthen policy in several areas in the pursuit of sustainable development.

The London Plan is not responsible for proactively encouraging growth, rather, its objective is to accommodate growth in London that is anticipated to happen in line with London's role as a world city. Therefore, the options are based on this assumption rather than question the nature of the growth itself.

The Sustainability Appraisal concluded without doubt that - in the face of the anticipated increase in population and subsequent growth - doing nothing would result in adverse impacts on carbon dioxide emissions, biodiversity, health, equality and diversity, and waste recycling and disposal.

S6. Likely sustainability effects of the Plan

Faced with the predicted growth of London over the timeframe of the Plan, the GLA is presented with both a huge challenge and a real opportunity to transform Greater London into *an exemplary, sustainable world city*. History, and contemporary experience, shows us that growth places enormous pressure on the environmental and social fabric of London. The London Plan sets a framework for London to develop in a way that not only maintains, but increases, quality of life for *all* Londoners.

This is exemplified through the aim of the Sustainability Appraisal, which is:

To achieve environmental, social and economic development simultaneously; the improvement of one will not be to the detriment of another. Where trade-offs between competing objectives are unavoidable, these will be transparent and minimised.

The radar diagram below presents the cumulative effect of the Plan against all 20 objectives used throughout the Sustainability Appraisal. This is based on the policies as they now stand, after changes were made following on from the interim set of recommendations.

The overall rating for these objectives is highlighted below, negative ratings appear towards the centre of the diagram and positive ratings towards the perimeter on a scale of 'significant negative, minor negative, mixed impact, minor positive to significant positive'.

The full range runs from minus 18 to 18. Each rating has been derived from assessing the impact (positive, negative or mixed), magnitude (high, medium or low) and probability of occurrence (high, medium or low). These have been arrived at by a combination of looking at the evidence base, reviewing policies and professional judgement. The impact is rated according to the following scale:

- + + Significant positive impact (9 to 18)
- + Minor positive impact (3 to 8)
- ? Mixed impact or neutral (- 2 to 2)
- Minor negative impact or uncertain (- 3 to – 8)
- Significant negative impact (-9 to –18)

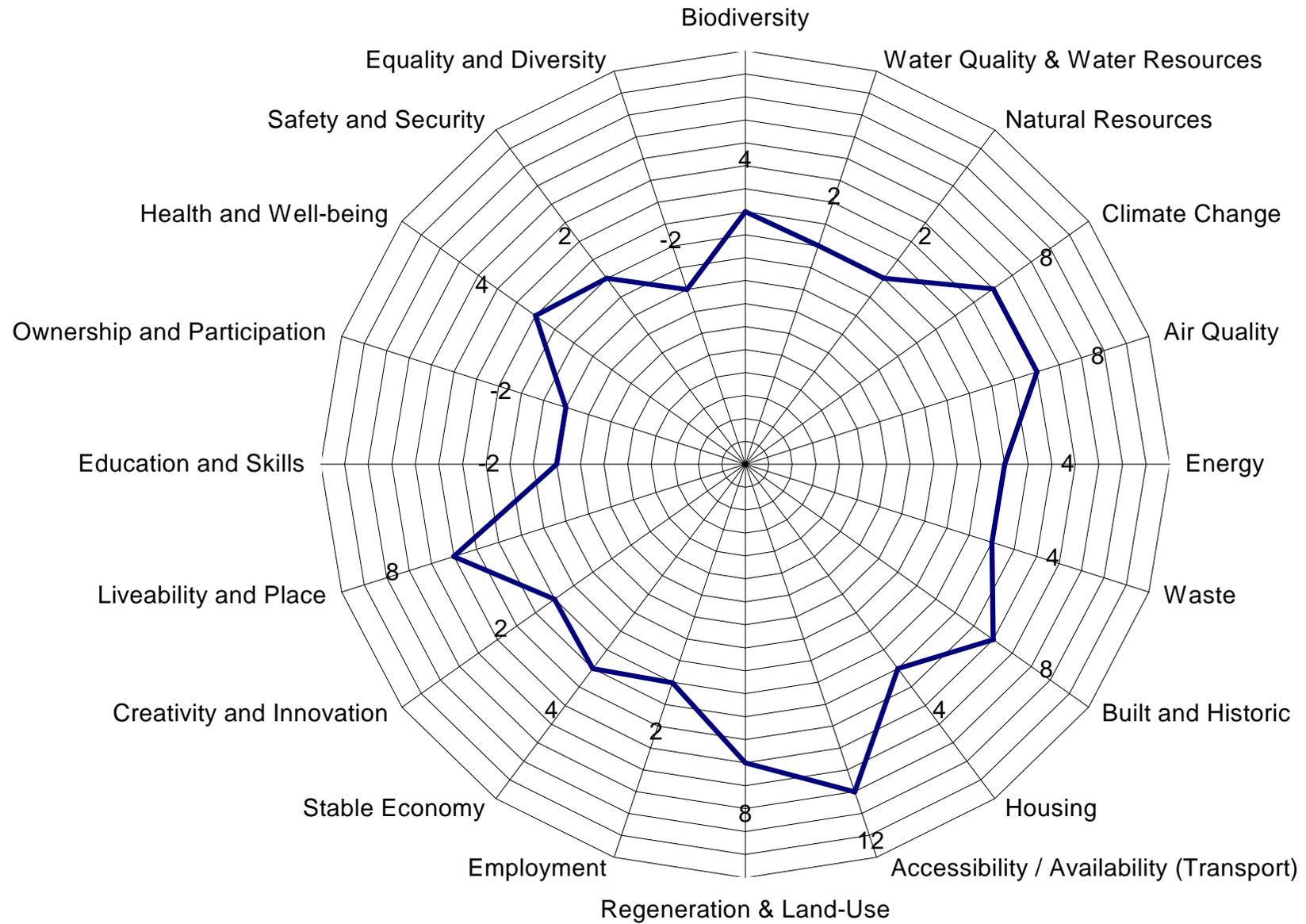
The Sustainability Appraisal shows that the draft further alterations to the London Plan have real potential to contribute **positively** to this objective, and on the whole, the changes made to the Plan should **increase sustainable development** in London. This will be achieved through a series of policies that prioritise climate change, public transport and accessibility, affordable housing, renewable energy, waste facilities and health. These policies are mutually reinforcing. For instance, by reducing congestion, you reduce air pollution, CO₂ emissions, improve health and reduce the burden to the economy.

Bold aspirations are evident in most policy areas, and sufficient clarity and guidance are provided against most areas (both within the Plan and through supporting documentation) to send a clear signal to developers and boroughs on how policies should be implemented.

Clearly accessibility is shown to have the most positive outcome, with ownership and participation and education and skills having a limited impact. All other changes should lead to some improvements against air quality, energy, waste, climate change, transport, built & historic environment, housing and regeneration and land use.

A successful economy is an important pre-requisite for enabling delivery of a range of social and environmental objectives, and it is in the way the economy is managed that will determine the extent of win-win-win outcomes. The Plan lays the foundation for reducing unemployment and stimulating economic activity by making provision for office space, promoting the central activity zone, opportunity areas, regeneration zones and sub-regional implementation. Questions remain over the resulting pressure on natural resources and whether benefit will accrue to those most in need. This will be determined on the ground during the actual implementation and monitoring.

Most of the ratings are relative to the actual scale of impact the Plan can have overall on a particular issue. This varies considerably according to the objective. For example, the Plan can significantly affect accessibility but has limited influence on safety and security. The alterations will help design out crime and the perception of crime, reduce the threat of terrorism in public transport, but significant changes will only result from a concerted effort across London. The policies on protecting open space are already working, but are unlikely to significantly enhance biodiversity and more likely to maintain the status quo in light of increased pressure from development. However, the whole range of policies that cumulatively make up liveability and place should help to make a reasonable improvement as is also the case with health and well-being. The combined effect of the impacts is predicted to be on the whole positive.



S7. Key Issues

The issues, whether they are predominately mixed or positive, generally have a number of different impacts. For the purposes of a summary the positive and mixed headings below denote the overall outcomes for some of the key issues.

Positive

S7.1 Accessibility

The importance of public transport provision is raised repeatedly in the Mayor's Statement of Intent on reviewing the London Plan, and is a core issue to the future development of London. The integration between the spatial and transport plans offers the opportunity to plan effectively for access at the outset, particularly in view of increased housing capacity and expansion of the economy, and is reflected in the alterations. The Plan endeavours to deliver a sustainable transport infrastructure that hits on CO₂ reduction targets, improves air pollution, reduces the need to travel, and increases social inclusion.

S7.2 Climate change

In line with the potential scale of impact, climate change mitigation is prioritised throughout the Statement of Intent and in the Further Alterations. Clear criteria are set across a range of policy areas that will have a cumulative impact on climate change, notably protection of open spaces, transport, construction, waste, renewable energy generation and alternative industries. It is still uncertain how targets will be implemented and monitored, and performance could suffer under pressure from housing development, growth in aviation and commercial development. Targets set for renewable energy - particularly in the sub-regions - should act as a real driver to encourage alternative energy sources to replace fossil fuels. Whilst energy supply is clearly crucial to the delivery of the Mayor's aspirations on climate change, energy saving is at the top of the hierarchy.

The draft Alterations to the Plan have attempted to address the negative impact of aviation, particularly with regard to climate change. However, a fundamental conflict remains. Gains made in reducing emissions through public transport are likely to be matched by increases in emissions associated with aviation.

Recent years have seen the kind of weather patterns we might expect from climate change, and these have had clear impacts on the lives of Londoners. The health issues associated with climate change will become increasingly apparent. We will have to adapt to climate change across many areas of our lives. Some of the most important issues for the London Plan include: infrastructure resilience; the siting and type of future development; water security; flood risk; air pollution; and the potential impacts on biodiversity and wildlife.

S7.3 The 2012 Olympic and Paralympic Games

The draft Further Alterations to the Plan have set the direction for the longer-term social and economic legacy of the Games. It is hoped that the Games will provide a real catalyst to providing incentives for developers to achieve high standards of construction, and through the assurance framework and other activities, to promote sustainable behaviours.

S7.4 Waste

The move to become 85 per cent self-sufficient in waste disposal should be realised through the apportionment targets and ambitious recycling targets. The Plan still lacks sufficient detail on how to minimise waste at source, particularly in view of

increased economic activity. We agree with the conclusions of the consultants who conducted the waste apportionment modelling, and think there is a real need for further iterations of the model using improved land availability data.

One of the most significant impacts on a range of natural resources - water, energy and waste - will arise from the significant increase of new build planned within greater London and this will be highly dependent on the methods and materials used. We have recommended that waste policies are consistently applied through planning including issues such as ensuring developers include infrastructure for waste minimisation in new developments.

S7.5 Housing

The 50 per cent target set for affordable housing has been maintained in the alterations and should help to address affordability issues. Equally, the standards set for new build will raise the environmental performance of buildings. The pressure for development is likely to lead to increased vulnerability from flooding, despite policies to consider risk assessment and include appropriate adaptation measures. The plan has made some attempt to address retrofitting, but given the plan is focused on development, policies are almost exclusively focused on new build.

Mixed

S7.6 Health

Many of the policies will have indirect and direct effects on human health. The population health outcome of the Plan depends upon the way in which the majority of non-health policies are implemented. The new objective on reducing health inequalities is a beneficial and highly positive addition, although questions remain about how this will be prioritised, achieved and measured throughout the Plan. Policies on health impact assessment (3A.20) and on the diverse needs of London's population (Policy 3A.14) are strongly supported.

Economic growth and economic development has beneficial and significant effects on people's health. London will derive the greatest benefits providing that this growth is located firmly in the context of wider community growth and community benefit, and not confined to the higher socio-economic groups. London continues to have pockets of extreme deprivation, to face high levels of child poverty and high unemployment amongst BAME groups so it is vital that the benefits of economic growth are spread.

The policies on accessibility and transport are vitally important for health and wellbeing. The policies on play areas and on childcare are welcomed, as are the policies on trees and woodland. Access to green space is important for levels of physical activity and also for mental health. The SA raises concerns about the social and public health effects of Policy 3D.4i on the development of casinos and this has now been recognised in proposed mitigation measures within the Plan. We recognise that this policy is in line with government policy, and suggest further steps for mitigating potential adverse effects.

S7.7 Biodiversity

The changes should undoubtedly help to enhance biodiversity and protect open space and this will be essential in the face of the development that is expected to occur over the lifetime of the Plan. Initiatives including the green grid and green arc should help to drive improvements. Policies are likely to bring people closer to nature through improved accessibility.

S7.8 Economic development

The nature of economic growth will significantly influence the spread of poverty, mobility requirements, levels of resource efficiency and CO₂ emissions in London. The drive to deliver economic growth is not always compatible with protecting the environment, encouraging prudent use of natural resources, and reducing social exclusion. It is still unclear just how the proposed growth in London will impact on child poverty and high unemployment, particularly in Black Asian, Minority and Ethnic populations.

S7.9 Ownership and participation

Generally, there are mixed references to ownership and participation within the existing Plan. Whilst some chapters have strongly and explicitly addressed involving community groups in decisions others make, there is little mention of community engagement. This may mean certain policies are more readily accepted and applied within communities, whilst others encounter opposition. A more consistent approach to ownership and participation needs to be taken.

S7.10 Water Quality and Water Resources

Chapter 4A on climate change and London's metabolism, is excellent in its coverage of water issues and contains relevant policies on Sustainable Drainage systems (SUDs) and efficient use of water. The value of water as a resource is positively supported in the blue ribbon network, and in its role in supporting biodiversity, recreation and economic opportunities.

Policy 4B.4i London's building retrofitting aims to increase the efficiency of existing buildings and policy 4A.2i on sustainable design and construction also specifies making the most effective and sustainable use of water. This should go some way to addressing the substantial water supply deficit forecast which is likely to be exacerbated by further growth. The demand for water needs to be tackled at every stage of development and prioritised, along with putting water supply and wastewater infrastructure in place ahead of planned growth. The emergent water action framework will support this aim, but a framework integrated into planning and development is urgently required.

S7.11 Education and skills

More could be done to create the right infrastructure and physical environment for improved learning by applying high construction standards and improving accessibility to education facilities. Given the review of the Mayor's powers, more influence can be applied to this sector through his London Skills and Employment Board.

S7.12 Equality and diversity

Considerable challenges remain given the current trends in unemployment, and participation rates amongst disadvantaged and BAME communities. The issues of high child poverty and the widening gap between rich and poor are clearly acknowledged in the Plan, but not always sufficiently reflected in the policies themselves. Overall trends will be affected by a range of other policies on the economy, environment, housing and transport. The use of the indicators as set out by the Child Poverty Commission would support monitoring here and inform future alterations to the Plan.

S8. Monitoring

The *London Plan Annual Monitoring Report* contains a concise list of 25 key performance indicators (KPIs) that monitor the effects of the Plan. This is supported

by monitoring which occurs in a range of other sources and individual strategies complement this with further sets of indicators at the next tier down. There is no central framework that assesses all of these indicators and provides a picture of the wider impacts of the London Plan. This could pick up on some of the more sensitive issues for example, employment rates in London's most disadvantaged areas.

Many of the indicators are monitored and presented in other documents, but could be brought together under the London Sustainable Development Framework for London. Some of the indicators will be the outcome of many factors and information may only be available London wide, but as long as they are sensitive enough to reflect changes in London policy they will serve as a useful reflection on the impact of the policies within the LP.

Relevant indicators are highlighted within this report. These could be integrated into the monitoring of the annual report, where relevant, along with other key relevant strategies. Some additional topics for monitoring include:

- The effectiveness of transport policies in improving accessibility and sustainable transport modes and where improvements have been directed (e.g. by air pollution levels and traffic volumes mapped by locality).
- The contribution of alternatives to aviation (e.g. high-speed rail links).
- The different attainment levels and employment participation of the different Black, Asian and Minority Ethnic (BAME) groups.
- Much stronger monitoring of greenhouse gas emissions to uncover whether that the intention to integrate measures to address climate change and other environmental impacts is followed through.
- Measuring income inequality between and within different groups in the sub-regions.
- Developing an overall measurement of the footprint of London. *The GLA is currently undertaking work looking for an appropriate way of measuring this footprint.*

Following the Examination into the Further Alterations, and prior to adoption of the alterations, the GLA will prepare a statement that will outline the final proposals for monitoring the alterations. This is in accordance with the requirements of Article 9(1) of the European Directive 2001/42/EC and Task D3 of the government guidance on Sustainability Appraisal, to outline the sustainability considerations that have been integrated into the alterations, the reasons for choosing the preferred policies, and measures for monitoring them.

1. Introduction

This report presents the findings from the Sustainability Appraisal (SA) of the draft Further Alterations to the London Plan. This report also incorporates the requirement for the London Plan to undertake a Strategic Environmental Assessment (SEA) and an Appropriate Assessment. The purpose of the SA is to promote sustainable development through the integration of social, environmental and economic considerations into the preparation of further alterations to the London Plan. The aim of the SA is to strengthen the contribution of the London Plan to the sustainable development of London.

This report is the product of four iterations of the SA and was published to support the draft further alterations to the London Plan during full public consultation. The report provides an analysis of the London Plan and gives stakeholders the opportunity to comment on the SA. In addition, a screening exercise for an Appropriate Assessment of the Habitats Directive was undertaken. This was completed following the first three iterations of the SA and is presented as a separate report. Further refinements have been made to this report in light of the public consultation that closed on 22 December 2006.

Forum for the Future has worked with Ben Cave Associates to produce a fully integrated appraisal including a health impact assessment. Forum for the Future led the work on the wider SA while Ben Cave Associates provided health input to the process. Health issues are explicitly considered within this SA. Human health is an integral part of sustainability and this SA provides a single appraisal of the London Plan which includes specific recognition of health issues. This approach has been chosen rather than conducting a separate health impact assessment. Health issues are explicitly considered within the SA. Human health is an integral part of sustainability and the SA provides a single appraisal of the London Plan which includes specific recognition of health issues. This approach has been chosen rather than conducting a separate health impact assessment.

1.1 Role of the London Plan and the GLA Act

The full role of the London Plan is clearly set out in the introduction to the Plan.

The London Plan is the development strategy for London and, in accordance with the GLA Act 1999 deals only with matters that are of strategic importance to Greater London. As a statutory requirement it sets out the spatial framework for the future development of London with a horizon up until 2016 (which is set to change to 2025/26 as part of the alterations). Planning applications are considered in relation to the London Plan, and alongside the relevant Local Development Documents, now forms part of the development plan for London. The original London Plan was finalised in February 2004 and the Mayor has decided to make alterations to the existing Plan in line with emerging priorities and impacts at this early stage.

Early alterations were proposed for the Plan in October 2005 regarding housing provision targets and waste and minerals. These have been subject to full public consultation and an Examination in Public that was undertaken in June 2006. A full SA was also completed on these early alterations.

The draft Further Alterations have been prepared in light of the Mayor's Statement of Intent on reviewing the London Plan. The review was focused to address the key emerging issues facing London and other relevant matters, especially the need to

adapt to and mitigate the effects of climate change. All the alterations made to the Plan are listed in appendix A.

The draft Further Alterations to the London Plan provide the opportunity to refine the vision and framework for improving economic, social and environmental conditions across London.

1.2 Additional powers

The Government has proposed that the Mayor should be granted a strengthened role over planning. Specifically, he will be able to direct changes to boroughs' programmes for the local development plans they produce and will have a stronger say on whether draft development plan documents are in general conformity with the London Plan, as well as exercising discretion to determine planning applications of strategic importance.

The Mayor has new duties to promote a reduction in health inequalities and prepare a statutory health inequalities strategy, and the role of the Regional Director of Public Health for London has been formalised as a Health Adviser to the Mayor. This will be taken forward in a GLA Bill.⁴

In addition, the Government proposes additional powers for the Mayor in housing and adult skills, a stronger strategic role on waste and additional strategic powers in a wide range of policy areas including culture and sport, health, energy and climate change and appointments to the boards of the GLA functional bodies. The Mayor will also be subject to a new duty to take action to mitigate and adapt to climate change.

This will increase the Mayor's ability to implement and extend sustainable development through the London Plan. Issues that have been raised during the course of the SA that lie outside the direct scope of the Plan are more likely to be addressed through the extension of powers.

1.3 Health and well-being and sustainable development

Health and wellbeing

Good health is a key condition to enable both economic growth and sustainable development.⁵ Longer, healthier, more productive human lives deliver tangible economic benefits. Similarly, economic growth and sustainable development have a crucial role in alleviating poverty and deprivation which are important influences on health and well-being. Good health in this sense is the very foundation of thriving modern societies and economies and needs to be defined in much broader terms than simply the prevention of illness.

There is increasing political commitment, internationally and domestically, to tackling inequalities in health.⁶ Many of the determinants of these inequalities are entrenched within the wider social structures such as the economy and labour market. GOL Circular 1/2000 states that in preparing or revising any of his strategies the Mayor must have regard to the effect on the health of persons in Greater London.

⁴ The Greater London Authority: The Government's Final Proposals for Additional Powers and Responsibilities for the Mayor and Assembly DCLG 2006

⁵ David Byrne, European Commissioner for Health and Consumer Protection

⁶ Department of Health 1999; World Health Organization 2005

Improving human health is not solely about the provision and delivery of health services, but also about reducing social exclusion and enhancing access to good quality jobs and housing. The London Plan's policies are implemented by a range of partners each of whom needs to address health from the regional level to the household and from the community to the individual.

Individuals must also assume responsibility for their health but it is the role of the London Plan to create a framework within which individuals are able to make healthy choices. This suggests that all policies could be considered in terms of their likely effects on human health.

Sustainable Development

The new UK Sustainable Development Strategy *Securing our Future* sets out the guiding principles of sustainable development as: “we want to achieve our goals of living within environmental limits and a just society, and we will do it by means of a sustainable economy, good governance, and sound science.” This places a clear change of emphasis on environmental limits. Put simply, sustainable development is about ensuring a better quality of life for everyone, now and for generations to come.

The London Sustainable Development Commission's Vision for London as highlighted in 'A Sustainable Development Framework for London', is:

Our vision for the 'World Class' London of the future is a place where all Londoners and visitors feel the greatest possible sense of physical, emotional, intellectual and spiritual well-being. Our thinking and decision making will be long term, meeting the needs of the present without compromising the ability of future generations to meet their own needs. This means ensuring that the ways in which we live, work and play will not interfere with nature's inherent ability to sustain life.

This is the vision adopted by the Mayor, which has been used to guide the sustainable development framework for London, and subsequently adopted in the SA appraisal framework.

Health and sustainability

The GLA Act states that the GLA must take account of three cross-cutting themes:

- The health of Londoners.
- Equality of opportunity.
- Its contribution to sustainable development in the UK.

These are reflected in the Plan itself and the SA has adopted an integrated approach, looking at these issues together. The SA attempts to explore the relationship between objectives and policies rather than assessing each policy individually against each objective. Therefore the recommendations in the interim phase, mitigation measures and final assessment look *across* the total effect of policies and how they together drive forward sustainable development. Further explanation of this process is outlined in section 2.4.

1.4 The purpose of Sustainability Appraisal

Regulation 7(2) of the Town and Country Planning (London Spatial Development Strategy) Regulations 2000 requires the Mayor of London to carry out Sustainability Appraisal (SA) as part of the production of the London Plan. This is to ensure the plan reflects an appropriate balance between the principle purposes of the Greater

London Authority (GLA): promoting economic development, social development and the improvement of the environment in Greater London. In accordance with the European Directive 2001/42/EC a Strategic Environmental Assessment (SEA) is also required to be undertaken during the preparation or modification of the London Plan - the purpose of which is to:

Provide for 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 to promoting sustainable development' (Article 1 of the SEA Directive).

Guidance from the Department for Communities and Local Government (DCLG) recommends the integration of SEA with SA and this approach has been taken for the London Plan. For the remainder of the report the use of the term Sustainability Appraisal (SA) can be taken to also include Strategic Environmental Assessment (SEA).

1.5 The scope of SA

The five stages of the SA are illustrated in table 1 alongside the drafting stages of the London Plan. The Forum for the Future and Ben Cave Associates have been commissioned to carry out stage B and stage C of the SA. The quality assurance checklist in appendix B details how all the different elements of the SEA directive and SA guidance have been met.

Further work on a separate Equalities Impact Assessment is being undertaken by the GLA and will be available before publication of the draft Further Alterations.

In addition, a screening exercise for an Appropriate Assessment under Article 6(3) and (4) of the Habitats Directive 92/43/EEC was undertaken. This was completed following the first three iterations of the SA and is presented as a separate report in appendix C.

The SA focuses on those areas where significant alterations have been made to the Plan. It assesses the likely impact of the policies and the supporting text. Observations are also included on the overall impact of the Plan where necessary. The SA has, by its nature, raised many issues which will need to be dealt with outside the sphere of the Plan itself and the issues are often associated with implementation of the policies. Recommendations that provide further mitigation measures which are relevant for related strategies, the boroughs and further reviews of the Plan are included in this SA report.

An examination in public into the early alterations to the London Plan was undertaken in June 2006. At the time of writing the examination Panel's report had just been received by the GLA. Overall, the Panel endorsed the approach taken by the GLA and supported the findings of the SA report. The Mayor is still considering the Panel's report and it is expected that the policies considered in the early alterations will be published before the end of 2006. The draft further alterations that have been released for public consultation will clearly show the relevant policies and what the Mayor intends to publish.

1.6 Structure and content of report

As a full SA, rather than a stand-alone SEA, this report does not contain a separate Environmental Report dealing with issues pertaining solely to the SEA. The following table summarises the key components of the SEA directive, how they have been addressed through the SA and where to locate relevant sections in the report.

Table 1: Location of key components of the SEA directive

Key Components	Location in this report
The Environmental Report will detail the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and geographical scope of the plan or programme, are identified, described and evaluated. The information to be given is (Art. 5 and Annex I):	Section 5, appraisal findings highlights all the significant effects.
a) An outline of the contents, main objectives of the plan or programme, and relationship with other relevant plans and programmes;	Section 1 outlines the role and objectives of the Plan. Appendix G details the relationship with other plans and policies.
b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;	Section 3 explains the outcomes from a 'do nothing' option. Section 5 details the key trends and appendix J contains the full data set.
c) The environmental characteristics of areas likely to be significantly affected;	This is covered under section 5.
d) 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 and 92/43/EEC.;	Any potential conflicts are highlighted in section 5.
e) The environmental protection objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental considerations have been taken into account during its preparation;	These were collated during the scoping phase and used to inform the appraisal framework – see appendices G and J.
f) The likely significant effects on the environment, including issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors. (Footnote: These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects);	All of these are covered under section 5.
g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	Mitigation measures are outlined in section 5.
h) An outline of the reasons for selecting the alternatives dealt with, and a description of how the assessment was undertaken including any difficulties (such as technical deficiencies or lack of know-how) encountered in compiling the required information;	Section 2 and 3 cover the appraisal methodology and the alternatives considered respectively.
i) A description of measures envisaged concerning monitoring in accordance with Art. 10;	Section 2.5 recommends monitoring of effects.
j) A non-technical summary of the information provided under the above headings.	This is available as a separate report, also available on GLAs website

<p>The report must include the information that may reasonably be required taking into account current knowledge and methods of assessment, the contents and level of detail in the plan or programme, its stage in the decision-making process and the extent to which certain matters are more appropriately assessed at different levels in that process to avoid duplication of the assessment (Art. 5.2).</p>	<p>This is contained throughout this report.</p>
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2 Methodology

2.1 Consultation and iterative stages

In order to maximise the usefulness and influence of the SA, Forum for the Future and Ben Cave Associates agreed with the GLA a process that involved several iterations of the SA and built in significant engagement with stakeholders and the policy authors.

There have been four iterations to the SA which has been continually revised in the light of more thorough analysis of the policies and the evidence base, and ongoing discussions with the GLA and stakeholders. The SA is an iterative process and consultation is a key aspect in informing and improving the development of the policies.

The SA team produced a short paper highlighting any significant issues that were likely to emerge in April, followed by an initial workshop with a range of staff involved in drafting the alterations at the GLA. This was followed by a report of initial findings in May and a more detailed interim report in July. This provided a foundation for discussion to further identify significant issues and refine recommendations with key stakeholders (a range of statutory and non-statutory organisations) and planners and policy authors involved in writing the alterations that took place in July. A full list of those who attended and a summary of discussions is available in appendix D. These discussions were essential in capturing the views of stakeholders and feeding results directly back to the planners at an early enough stage to be taken into consideration before the final drafting stages.

A steering group was established to oversee the SA process which comprised of representatives from the GLA, the secretariat from the London Sustainable Development Commission and representation from the London Health Commission. The group met at key stages to develop the methodology, discuss emerging results and review stakeholder input and feedback with the planners and policy authors.

The steering group will continue to meet to oversee the final stages of the SA, following consultation on the SA report through to the monitoring of the published plan. They will also provide an in-house pool of expertise within the GLA who can continue to advise any future Sustainability Appraisals. The Forum for the Future and Ben Cave Associates would like to thank all of the members of the steering group for their valuable contribution in steering the direction of the SA.

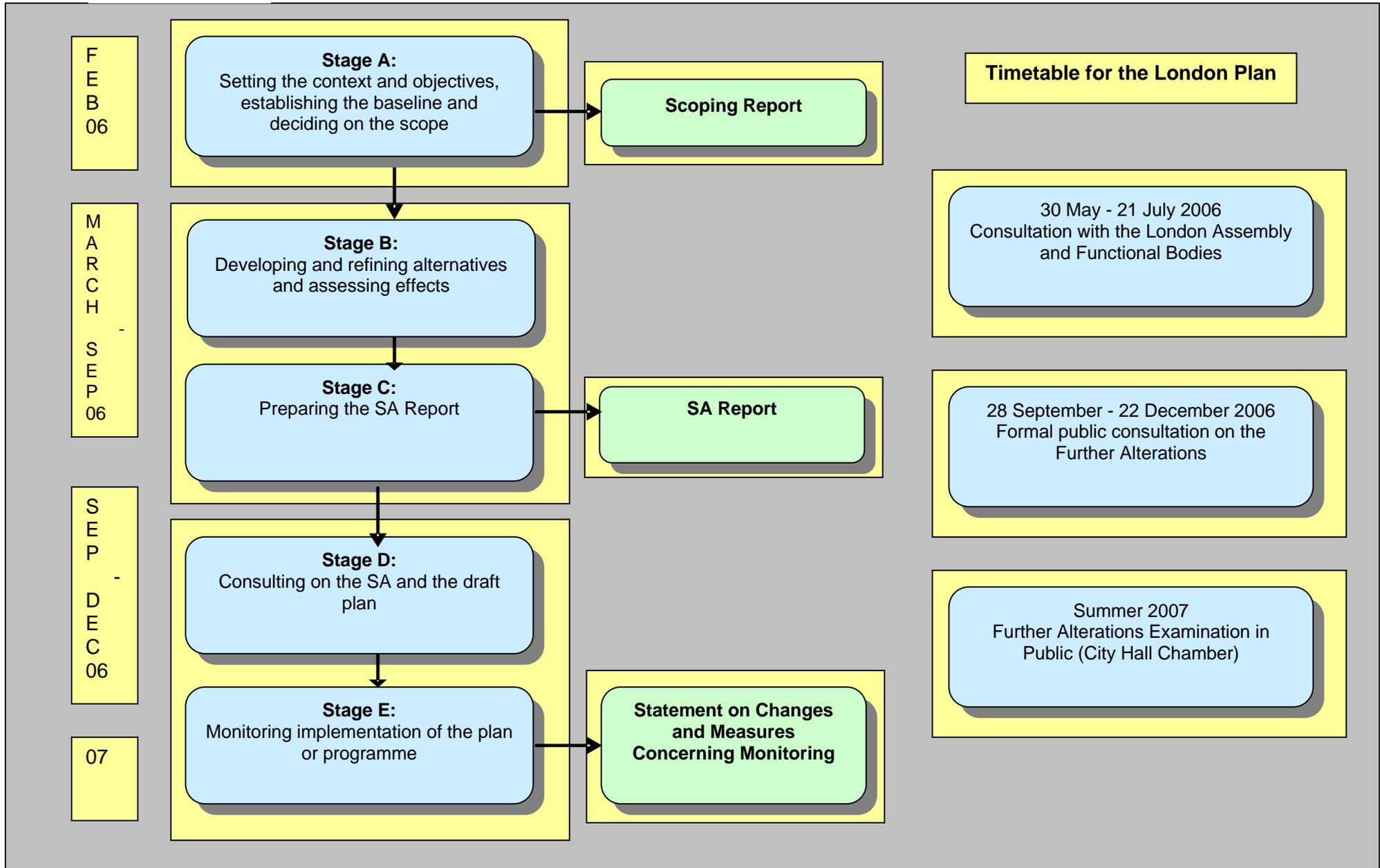
A summary of reports and consultation events is outlined overleaf:

December 05	Draft SA objectives and identification of key sustainability issues (Entec)	Workshop with GLA and key stakeholders including SEA statutory consultees
January 06	Scoping report (Entec)	Workshop with GLA and key stakeholders including SEA statutory consultees
March 06	SA Brief	Inception meeting for stages B and C of the process with steering group
April 06	Short paper of significant issues	
May 06	Initial findings	Workshop with GLA London Plan team and other GLA group staff
May 06		Steering group meeting
July 06	Interim report of findings and recommendations	Workshops with stakeholders- both health experts and sustainable development experts Two workshops with GLA London Plan policy authors and planners
July 06		Steering group meeting
August 06		Steering group meeting
September 06	Draft SA report	Full public consultation
April 07	Updated and reissued SA report	Examination in Public

This report constitutes the SA report that is available for full public consultation under Stage D for a three month period alongside the publication of the draft Further Alterations to the London Plan. Further refinements have been made to this report in light of the public consultation that closed on 22 December 2006.

The alignment of the SA with the evolution of the Plan is critical to enabling the interaction between the two, feeding in the results of the SA and consultation directly back to the policy authors. The five stages of the SA and timetable for alterations to the Plan are illustrated below. The full explanation is contained within appendix E.

Table 2



2.2 Links to previous Sustainability Appraisal (SA) work

Stage A of this SA was undertaken by Entec UK and in consultation with regional stakeholders:

- defined the objectives
- developed a framework
- reviewed relevant plans and policies
- compiled the evidence base
- consulted on the scope of the SA and
- identified key significant issues to inform the full SA.

All relevant documentation is attached in the appendices and the full scoping report is available on the GLA website.

Twenty objectives were derived from a combination of drivers including the SEA directive, review of relevant plans and policies, review of evidence provided by a range of organisations, previous SA of the London Plan and significant issues highlighted for London. They were then developed in consultation with stakeholders and are structured according to the four R's of the LSDC's Sustainable Development Framework for London. These are as follows:

- taking responsibility;
- developing respect;
- getting results; and
- managing resources.

The overarching objective is:

To achieve environmental, social and economic development simultaneously; the improvement of one will not be to the detriment of another. Where trade-offs between competing objectives are unavoidable, these will be transparent and minimised.

A set of significant issues was also identified from consultation, baseline studies and evidence base for London covering the objectives. These helped to inform the development of 'appraisal criteria' for each objective, which is essentially a set of prompt questions that helps the user to consistently consider how the Plan is meeting the objective.

A compatibility matrix (see appendix F) was completed to test whether the six key objectives of the London Plan are compatible with objectives for sustainability. This helped to identify areas of compatibility, concern and uncertainty. This accompanied a review of all relevant plans and programmes (appendix G) to ensure that the relevant sustainability objectives were considered in formulating these.

The results of the previous SA on the early alterations of the Plan in October 2005 have also been taken into account during this SA and where relevant, the findings are highlighted within this report.

Table 3: SA Objectives and Appraisal Criteria

SA Objective	Appraisal Criteria
Managing Resources	
 <p>1. Biodiversity. To conserve and enhance natural habitats and wildlife and bring nature closer to people.</p>	<p>Will it conserve and enhance habitats and species and provide for the long-term management of natural habitats and wildlife (in particular will it avoid harm to national or London priority species and designated sites)?</p> <p>Will it improve the quality and extent of designated and non-designated sites?</p> <p>Will it provide opportunities to enhance the environment and create new conservation assets (or restore existing wildlife habitats)?</p> <p>Will it protect and enhance the region's waterbodies to achieve a good ecological status?</p> <p>Will it promote, educate and raise awareness of the enjoyment and benefits of the natural environment?</p> <p>Will it bring nature closer to people, especially in the most urbanised parts of the city?</p> <p>Will it promote respect and responsibility for its wise management?</p> <p>Will it improve access to areas of biodiversity interest?</p> <p>Will it enhance the ecological function and carrying capacity of the greenspace network?</p>
 <p>2. Water Quality & Water Resources. To improve the quality of surface waters and groundwater and to achieve the wise management and sustainable use of water resources.</p>	<p>Will it improve the quality of waterbodies?</p> <p>Will it reduce discharges to surface and groundwaters?</p> <p>Will it support sustainable urban drainage?</p> <p>Will it improve the water systems infrastructure (e.g. water supply/sewerage)?</p> <p>Will it reduce abstraction from surface and groundwater sources?</p> <p>Will it reduce water consumption?</p>
 <p>3. Natural Resources. To minimise the global, social and environmental impact of consumption of resources by using sustainably produced, harvested and manufactured local products.</p>	<p>Will it reduce the demand for natural resources and raw materials from unsustainable sources?</p> <p>Will it encourage the prudent and efficient use of natural resources?</p> <p>Will it encourage the use of local sustainable products?</p> <p>Will it reduce the extraction of minerals?</p>
 <p>4. Climate Change. To address the causes of climate change through minimising the emissions of greenhouse gases and ensuring that London is prepared for its impacts.</p>	<p>Will it minimise emissions of greenhouse gases?</p> <p>Will it help London meet its emission targets?</p> <p>Will it protect London from climate change impacts?</p> <p>Will it avoid exacerbating the impacts of climate change?</p> <p>Will it minimise the risk of flooding from rivers and watercourses to people and property?</p> <p>Will it manage existing flood risks appropriately and avoid new flood risks?</p>
 <p>5. Air Quality. To improve air quality.</p>	<p>Will it improve air quality?</p> <p>Will it reduce emissions of greenhouse gases by reducing energy consumption?</p> <p>Will it help to reduce emissions of PM10 and NO2?</p> <p>Will it reduce emissions of ozone depleting substances?</p> <p>Will it help to achieve national and international standards for air quality (for example, those set out in the Air Quality Regulations 2000 and (Amendment) Regulations 2002)?</p>

SA Objective	Appraisal Criteria
 <p>6. Energy. To achieve greater energy efficiency and to reduce reliance on fossil fuels for transport, heating, energy and electricity.</p>	<p>Will it increase the proportion of energy both purchased and generated from renewable and sustainable resources? Will it reduce the demand and need for energy? Will it promote and improve energy efficiency (e.g. buildings)?</p>
 <p>7. Waste. To minimise the production of waste across all sectors and increase reuse, recycling, remanufacturing and recovery rates.</p>	<p>Will it minimise the production of waste? Will it promote reuse and recycling (e.g. in the design of housing etc)? Will it help to promote a market for recycled products?</p>
Getting Results	
 <p>8. Built and Historic Environment. To enhance and protect the existing built environment (including the architectural distinctiveness, townscape/landscape and archaeological heritage), and ensure new buildings are appropriately designed and constructed in a sustainable way.</p>	<p>Will it protect and enhance sites, features and areas of historical, archaeological and cultural value/potential? Will it conserve and enhance the townscape/cityscape character? Will it promote high quality design and sustainable construction methods? Will it respect visual amenity and the spatial diversity of communities? Will it enhance the quality of the public realm? Will it protect and enhance areas of open space? Will it improve access to open space and improve the quality and quantity of publicly accessible greenspace?</p>
 <p>9. Housing. To ensure that all Londoners have access to good quality, well-located, affordable housing that promotes liveability.</p>	<p>Will it reduce homelessness? Will it reduce the number of unfit homes and overcrowding? Will it increase the range and affordability (both upfront and over its lifetime) of housing (taking into account different requirements and preferences of size, location, type and tenure)? Will it ensure that appropriate services and facilities are in place for the new population? Will it provide housing that ensures a good standard of living and promotes a healthy lifestyle? Will it improve the quality of housing? Will it increase use of sustainable design and sustainable building materials in construction? Will it improve energy efficiency and insulation in housing to reduce fuel poverty and ill health? Will it provide housing that encourages a sense of community and enhances the amenity value of the community? Will it improve the wider built environment and sense of place?</p>

SA Objective	Appraisal Criteria
 <p>10. Accessibility / Availability (Transport). To maximise the accessibility to key services and amenities and increase the proportion of journeys made by public transport, by bicycle and by foot (relative to those taken by car).</p>	<p>Will it encourage a modal shift to more sustainable forms of travel as well as encourage greater efficiency (e.g. through car-sharing)? Will it reduce the overall need for people to travel by improving their access to the services, jobs, leisure and amenities in the place in which they live? Will it reduce traffic volumes and traffic congestion? Will it reduce the length of commuting journeys? Will it help to provide a more integrated transport service from start to finish i.e. place of residence to point of service use or place of employment? Will it increase the number of sub-regional and orbital public transport routes that facilitate locally-based living? Will it improve accessibility to work by public transport, walking and cycling? Will it reduce road traffic accidents?</p>
 <p>11. Regeneration & Land Use. To stimulate regeneration and urban renaissance that maximises benefits for the most deprived areas and communities and to improve efficiency in land use through the sustainable reuse of previously developed land and existing buildings.</p>	<p>Will the regeneration have immediate and long-term benefits for deprived areas? Will it help to make people feel positive about the area they live in? Will it help to create a sense of place and 'vibrancy'? Will it help reduce the number of vacant and derelict buildings? Will it minimise the loss of soils to development? Will it improve soil quality?</p>
 <p>12. Employment. To offer everyone the opportunity for rewarding, well-located and satisfying employment.</p>	<p>Will it generate satisfying and rewarding new jobs? Will it help to provide employment in the most deprived areas and stimulate regeneration? Will it reduce overall unemployment, particularly long-term unemployment? Will it help to improve levels of income and help to deliver a living wage to all? Will it encourage flexibility of work, including voluntary and part-time work? Will it encourage volunteering and promote the value of unpaid work? Will it encourage the development of healthy workplaces?</p>
 <p>13. Stable Economy. To encourage a strong, diverse and stable economy and to improve the resilience of businesses and their environmental, social and economic performance.</p>	<p>Will it improve sustainable business development? Will it improve the resilience of business and the economy? Will it help to diversify the economy? Will it prevent the loss of indigenous businesses? Will it encourage business start-ups and support the growth of businesses? Will it encourage ethical and responsible investment? Will it reduce levels of deprivation?</p>
 <p>14. Creativity and Innovation. To promote creativity and innovation in the environmental and social economy (including new clean technologies, renewable energy, pollution control and the skills sector).</p>	<p>Will it help to diversify the economy? Will it encourage investment in new technologies, new solutions, new plans and new ideas that contribute to achieving progress towards sustainability? Will it boost the green technology sector?</p>

SA Objective	Appraisal Criteria
Taking Responsibility	
 <p>15. Liveability and Place. To create and sustain liveable, mixed use physical and social environments that promote long- term social cohesion, sustainable lifestyles and a sense of place.</p>	<p>Will it create and sustain vibrant and diverse communities and encourage increased engagement in recreational, leisure and cultural activities?</p> <p>Will it increase the provision of culture, leisure and recreational activities: this could include quality, affordable and healthy food, as well as cultural, sporting, or leisure opportunities.</p> <p>Will it provide opportunities for people to choose an active, fulfilling life?</p> <p>Will it increase the provision of key services, facilities and employment opportunities?</p> <p>Will it positively enhance and promote the perceived sense of place held by the community?</p> <p>Will it protect and enhance the provision of open space?</p>
 <p>16. Education and Skills. To maximise the education and skills levels of the population.</p>	<p>Will it increase the opportunities for educational and vocational goals to be achieved through employment and entrepreneurial opportunities?</p> <p>Will it increase the levels of participation and attainment in education?</p> <p>Will it improve overall achievement of London's primary and secondary school children?</p> <p>Will it improve employee education/training programmes?</p> <p>Will it improve the qualifications and skills of young people?</p> <p>Will it promote lifelong learning activities?</p> <p>Will it support the voluntary sector and promote volunteering?</p> <p>Will it promote sustainable development education?</p> <p>Will it contribute to meeting skills shortages?</p>
 <p>17. Ownership and Participation. To promote civic participation, ownership and responsibility and enable individuals, groups and communities to contribute to decision-making at neighbourhood, borough and regional levels in London.</p>	<p>Will it promote social cohesion and encourage engagement in community activities?</p> <p>Will it increase the ability of people to influence decisions?</p> <p>Will it support civic engagement and encourage the involvement and participation of a diverse range of stakeholders?</p> <p>Will it promote community spirit and encourage community networks?</p> <p>Will it help to create a sense of place?</p>
Developing Respect	
 <p>18. Health and Well-being. To maximise the health and well-being of the population and reduce inequalities in health.</p>	<p>Will it reduce poverty and health inequalities?</p> <p>Will it improve mental and emotional health?</p> <p>Will it improve access to high quality public services (including health facilities)?</p>
 <p>19. Safety and Security. To enhance community safety by reducing crime, antisocial behaviour and the fear of crime.</p>	<p>Will it reduce actual levels of crime?</p> <p>Will it reduce the fear of crime?</p> <p>Will it reduce antisocial behaviour?</p> <p>Will it reduce actual noise levels and disturbances from noise?</p> <p>Will it reduce the risk of terrorist attack?</p>

SA Objective	Appraisal Criteria
 <p data-bbox="480 315 627 472">20. Equality and diversity. To ensure equitable outcomes for all</p> <p data-bbox="229 479 627 553">communities, particularly those most liable to experience discrimination, poverty and social exclusion.</p>	<p data-bbox="671 286 1326 338">Will it reduce poverty and social exclusion in those areas and communities most affected?</p> <p data-bbox="671 342 1310 394">Will it promote a culture of equality, fairness and respect for people and the environment?</p> <p data-bbox="671 398 1382 504">Will it promote equality for black and minority ethnic communities, women, disabled people, lesbians, gay men, bisexual and transgender people, older people, young people, children and faith groups?</p> <p data-bbox="671 508 1238 533">Will it benefit the equality target groups listed above?</p>

2.3 Appraising the effects of the Plan

The objectives above were then incorporated into a framework, as illustrated in the example in Table 4, that is designed specifically to meet the needs of the European Directive (e.g. to consider the effects over the short, medium or long-term). Its purpose is to both assess the potential impacts of the London Plan, and identify ways in which it can be improved. It is a 'checklist and dialogue' based approach that is completed independently and then together in groups.

The tool is structured around the 1 overarching objective and 20 thematic objectives that have been devised specifically for the appraisal of the London Plan. During each iteration of the Plan three team members at the Forum for the Future - along with staff from the London Sustainability Exchange and Ben Cave Associates - used the tool to appraise the effects of policies revisions, each coming to their own conclusion and then reaching consensus by discussion.

Each decides whether 1) the London plan will generate **impacts** that are positive, negative or neutral 2) what the **magnitude** of those impacts will be; awarding a rating of 'high', 'moderate' or 'low' according to what the cumulative is from of a range of factors (the duration of impact, the number of people affected etc) and 3) the **likelihood** of occurrence, specifically whether the outcome is high, medium or low. This is informed by relevant supporting information, data, targets and indicators and professional judgement. The full guidance and tool are attached in appendix H.

Table 4: Sustainability Appraisal Framework

GLA Sustainability Appraisal Framework - Example								
SD aim	Appraisal criteria	Impact Positive Negative	Magnitude High Medium Low	Probability High Medium Low	Rating	Evidence	Targets	Assessment/ Recommendations
Managing resources								
Equality and Diversity To ensure equitable outcomes for all communities, particularly those most liable to experience discrimination, poverty and social exclusion.	<ul style="list-style-type: none"> - Will it reduce poverty and social exclusion in those areas and communities most affected? - Will it promote a culture of equality, fairness and respect for people and the environment? - Will it promote equality for black and minority ethnic communities, women, disabled people, lesbians, gay men, bisexual and transgender people, older people, young people, children and faith groups? - Will it benefit the equality target groups listed above? 							

2.4 Virtuous cycles

To assist in the assessment of the Plan policies, the concept of virtuous cycles (VC) was proposed by the London Sustainable Development Commission (LSDC) as a means of ensuring integration of policy objectives rather than a single-issue approach, to help achieve sustainable win-win-win solutions. Traditionally appraisal frameworks assess each objective individually which can lead to combined and cumulative effects being overlooked. The VC approach is designed to inspire a cross-cutting analysis and provides a means of testing whether the policies, when viewed together, are delivering the integrated solutions needed if we are to drive forward sustainable development. The three *virtuous cycles* which were suggested by the LSDC for the appraisal are as follows:

- *Land use, energy use, resource flows, access, transport, and climate change policies that will achieve mutual and reinforcing goals of creating sustainable, compact, inclusive, mixed use development.*
- *Employment, skills, mobility, inequality that lead to creation of a sustainable, skilled and diverse workforce.*
- *Health, well-being, safety, environmental quality, participation, diversity that deliver sustainable communities.*

Further information on the virtuous cycles is included in appendix I.

2.5 Evidence and monitoring

An important part of SA is to make assessments in light of the evidence base and to make recommendations on monitoring of significant issues. The available data was compiled as part of stage A, and the findings were reviewed, taking into account relevant trends, targets and supporting information. A summary of relevant data is referred to within the tables and analysis in section four, and a full summary is presented in appendix J.

The evidence base has been taken from a combination of sources including the *London Plan Annual Monitoring report 2*; London Sustainable Development Commission 2005 report on *London's Quality of Life Indicators*; *The Mayor's State of the Environment Report for London*; *Securing the Future: The Opportunities and Gaps in London*, London Sustainability Exchange; *Sustainability Appraisal of the London Plan (First Review)*; and *Opportunities and Skills Needs in the Green Economy* and the *Health in London* reports produced by the London Health Commission. The London Health Commission also funded a review of academic evidence.

A briefing paper for health stakeholders, an evidence base and notes from the health stakeholder workshop are available on the London Health commission website www.londonshealth.gov.uk.

A key issue concerning this appraisal is that the Plan is only two years old and there are significant evidence gaps that often make it difficult to view trends and assess how effective current policies are. Therefore it is important to continue building up the evidence base to provide a credible foundation on which to review the impact policies are having.

2.5.1 Assessing significant health effects of the Plan objectives

The Mayor and the London Health Commission have consistently supported health impact assessment of the Mayor's strategic plans. In line with this approach an evidence based approach has been adopted. Health and well-being are cross-cutting issues.

The London Health Commission funded a review of the evidence linking the changes proposed in the Further Alterations to the London Plan to changes in health outcomes for people living and working in London.

The recommendations in this SA are founded on the evidence base. As described above, a copy of the evidence base can be found on the London Health Commission website.⁷

2.5.2 Significant issues for monitoring

Sustainability Appraisal requires that the significant effects of implementing a plan or programme should be monitored in order to identify at an early stage any unforeseen adverse effects, and to be able to undertake appropriate remedial action. It is important to build up the evidence base over time, bearing in mind that it needs to be SMART (specific, measurable, achievable, relevant and time bound).

The Plan will undoubtedly have a huge impact across a number of areas in and around London and several new indicators and targets have been adopted as part of the further alterations. This section focuses on those significant aspects that may arise from the alterations rather than all policies within the Plan.

The *London Plan Annual Monitoring Report* contains a concise list of 25 key performance indicators (KPIs) that monitor the effects of the Plan. This is supported by monitoring which occurs in a range of other sources and individual strategies which complement this with further sets of indicators at the next tier down. There is no central framework that assesses all of these indicators and provides a picture of the wider impacts of the London Plan. This could pick up on some of the more sensitive issues for example, employment rates in London's most disadvantaged areas.

Many of the indicators are monitored and presented in other documents, but could be brought together under the London Sustainable Development Framework for London. Some of the indicators will be the outcome of many factors and information may only be available London-wide, but as long as they are sensitive enough to reflect changes in London policy they will serve as a useful reflection on the impact of the policies within the LP.

A comprehensive range of potential indicators were proposed in the Scoping Report for each of the SA objectives, presented in table 5 below. These are indicators already being captured by regional agencies and easily accessible from open sources, they are relevant for London as a region and regular capture should allow comparison over time. They have also been supplemented by other sources, including the indicators set out in the *UK Government Sustainable Development Strategy, Securing the Future (2005)* and the London Sustainable Development

⁷ See www.londonhealth.gov.uk

Commissions *Quality of Life Indicators* (May, 2005) and the London Health Strategy High Level Health Indicators.

These capture most of the key policy areas and provide an excellent source of possible indicators. Following the examination into the further alterations an adoption statement will be prepared that will confirm which of these indicators will be incorporated into the existing monitoring programme for the London Plan. Further indicators may be considered at this time as new data becomes available.

Table 5 Potential indicators

Sustainability Appraisal Objective	Possible Indicators and Sources
Managing Resources	
<p>1. Biodiversity. To conserve and enhance natural habitats and wildlife and bring nature closer to people.</p>	<ul style="list-style-type: none"> • Area of land designated as a site of importance for nature conservation (source: The London Development Database). Note: Already collected as part of the London Plan Annual Monitoring Report process. • The London Bird Index Indicator (source: Breeding Bird Survey, RSPB). This is also a LSDC Quality of Life Indicator. • Net loss of open space (the London Plan Monitoring Report). <p>Existing performance targets:</p> <ul style="list-style-type: none"> • No net loss of open space designated for protection in UDPs due to new development • No net loss of designated Sites of Importance for Nature conservation • Maintain at least 96% of new residential development to be on previously developed land.
<p>2. Water Quality & Water Resources. To improve the quality of groundwater and to achieve the wise management and sustainable use of water resources.</p>	<ul style="list-style-type: none"> • Estimated Water consumption (source: OFWAT). This is also a UK Government Sustainable Development Indicator. • Total abstractions from non-tidal surface waters and groundwaters (source: Environment Agency). This is also a UK Government Sustainable Development Indicator. Note that this data is available for the Thames Region (which does not correspond exactly to the Government Office Region). • Rivers of good biological quality (source: DEFRA). This is also a UK Government Sustainable Development Indicator. • Assessments of water availability (source: Environment Agency). This is also a UK Government Sustainable Development Indicator. <p>Existing performance target:</p> <ul style="list-style-type: none"> • No net loss of functional flood plain.
<p>3. Natural resources. To minimise the global, social and environmental impact of consumption of resources by using sustainably produced, harvested and manufactured products.</p>	<ul style="list-style-type: none"> • Energy generated from renewables (source: Department of Trade and Industry). <p>Existing performance target:</p> <ul style="list-style-type: none"> • Production of 945GWh of energy from renewable sources by 2010 including at least six large wind turbines
<p>4. Climate Change. To address the causes of climate change through minimising the emissions of greenhouse gases and ensuring that London is prepared for its impacts.</p>	<ul style="list-style-type: none"> • Carbon dioxide emissions. Note: Already collected as part of the London Plan Annual Monitoring Report process. This is also a UK Government Sustainable Development Indicator. • Area of functional flood plain (source DCLG). Note: Already collected as part of the London Plan Annual Monitoring Report process. • Number of zero-carbon developments per borough. Note: The Mayor has set a target of at least one zero-carbon development per borough by 2010. • Area of land defended to an agreed standard. Source: Environment Agency.

Sustainability Appraisal Objective	Possible Indicators and Sources
	<ul style="list-style-type: none"> • Hectares of land at risk of flooding. Source: Environment Agency. • Carbon efficiency of economic activity (source: EBS, GLA Economics, GLA Environment). This is also a LSDC Quality of Life Indicator. <p>Existing performance target:</p> <ul style="list-style-type: none"> • Reduce emissions to 15 per cent below 1990 levels by 2015, rising to 20% by 2015, 25% by 2020 and 30% by 2025. • No net loss of functional flood plain within referable applications.
<p>5. Air Quality. To improve air quality.</p>	<ul style="list-style-type: none"> • Estimated emissions of NO₂, PM₁₀ and SO₂ (source: DEFRA). This is also a UK Government Sustainable Development Indicator. This is also a LSDC Quality of Life Indicator. • Number of days of moderate or higher air pollution (source: Defra, netcen).
<p>6. Energy. To achieve greater energy efficiency and to reduce reliance on fossil fuels for transport, heating, energy and electricity.</p>	<ul style="list-style-type: none"> • Increase in energy generated from renewable sources. Note: Already collected as part of the London Plan Annual Monitoring Report process.
<p>7. Waste. To minimise the production of waste across all sectors and increase reuse, recycling, remanufacturing and recovery rates.</p>	<ul style="list-style-type: none"> • Volume of waste recycled or composted (source: DEFRA Municipal Waste Management Strategy). Note: Already collected as part of the London Plan Annual Monitoring Report process. This is also a LSDC Quality of Life Indicator.. • Regional self-sufficiency for waste (waste treated or disposed of within London). Note: Already collected as part of the London Plan Annual Monitoring Report process. • Waste arising by sector (source: Defra, EA, ODPM, GLA, www.capitalwastefacts.com). Note: This is also a UK Government Sustainable Development Indicator. <p>Existing performance targets:</p> <ul style="list-style-type: none"> • Increase in household waste composted • At least 30 % by 2010; At least 33 % by 2015 see table 6B • Achievement of quantified requirement for waste treatment facilities (once established in SRDFs) • Increase in municipal waste recycled or composted: At least 35 per cent by 2010; at least 45 per cent by 2015 • Allocations of additional waste management sites in DPDs to achieve the apportioned tonnages of waste in each borough • 75% (16 million tonnes) of London's waste treated or disposed of within London by 2010 rising to 80% by 2015 and 85% by 2020.
<p>Getting Results</p>	
<p>8. Built and Historic Environment. To enhance and protect the existing built environment (including the architectural distinctiveness, townscape/landscape and archaeological heritage), and ensure new buildings are appropriately designed and constructed in a sustainable way.</p>	<ul style="list-style-type: none"> • Proportion of buildings at risk as a percentage of the total number of listed buildings in London (source English Heritage Register of Buildings at Risk). Note: Already collected as part of the London Plan Annual Monitoring Report process. <p>Existing performance target:</p> <ul style="list-style-type: none"> • Reduction in the proportion of buildings at risk as a percentage of the total number of listed buildings in London.
<p>9. Housing. To ensure that all Londoners have access to good quality, well-located, affordable housing that promotes liveability.</p>	<ul style="list-style-type: none"> • Supply of Affordable housing. Note: Already collected as part of the London Plan Annual Monitoring Report process. • Households living in fuel poverty (source: DTI). Note: This is also a UK Government Sustainable Development Indicator.

Sustainability Appraisal Objective	Possible Indicators and Sources
	<ul style="list-style-type: none"> • Percentage of homes not meeting the 'Decent Homes' standard (source: English Housing Conditions Survey, ODPM). Note: This is also a UK Government Sustainable Development Indicator. This is also a LSDC Quality of Life Indicator. • Proportion of homes judged unfit to live in (source: London Health Strategy High Level Health Indicator). • Estimates of people sleeping rough (source: ODPM). Note: This is also a UK Government Sustainable Development Indicator. • Total number of housing completions in London (source: GLA). Note: this information is collected as part of the London Development Database. • Children living in workless households (source: ONS). This is also a LSDC Quality of Life Indicator. <p>Existing performance targets:</p> <ul style="list-style-type: none"> • Over 95% of development to comply with the housing density location and SRQ matrix • Completion of at least 30,650 new homes a year • (The Annual Monitoring Report will also monitor individual borough targets as set out in Table 3A.1.) • Completion of 50% of new homes as affordable homes each year between 2004 2016.
<p>10. Accessibility / Availability (Transport). To ensure that all Londoners have access to key services and amenities and increase the proportion of journeys made by public transport, by bicycle and by foot (relative to those taken by car).</p>	<ul style="list-style-type: none"> • Proportion of London residents working in London. Note: The Annual Monitoring Report notes that there are no reliable figures against which to measure this indicator (see AMR, 2005). • Use of public transport in relation to the use of the private car (source: TfL, ONS, the London Travel Report). Note: Already collected as part of the London Plan Annual Monitoring Report process. • Passengers for the River Thames (Source: London River Services). Note: Already collected as part of the London Plan Annual Monitoring Report process. • Cargo on the River Thames (source: Port of London Authority). Note: Already collected as part of the London Plan Annual Monitoring Report process. • Road Traffic Casualties per 1,000 population (source: London Health Strategy High Level Health Indicator). • Increase in Public Transport capacity. Note: Already collected as part of the London Plan Annual Monitoring Report process. • Number of jobs in Public Transport Accessibility Level (PTAL) areas. Note: Already collected as part of the London Plan Annual Monitoring Report process. • Access to doctor/hospital/post office/ shop or supermarket without (and without) a car (Source: ODPM). This is also a UK Government Sustainable Development Indicator. • Average fare per passenger KM (Source: London Travel Report). • Bus Passengers per year (source: TfL, BVPI102). • Average number of cycling trips made (source: TfL Annual Report). • Travel to School – proportion of children walking to school (source: Department of Transport). This is also a LSDC Quality of Life Indicator. Note: Travel to school data is not monitored on an annual basis. • Traffic Volumes (Source: Department of Transport Traffic Volumes). This is also a LSDC Quality of Life Indicator. <p>Existing performance targets:</p>

Sustainability Appraisal Objective	Possible Indicators and Sources
	<ul style="list-style-type: none"> • Use Of public transport per head grows faster than use of private car per head • From 2001-2011, 15% reduction in traffic in the congestion charging zone, zero traffic growth in inner London, and traffic growth in outer London reduced to no more than 5% • A 5% increase in passengers on the Blue ribbon network from 2001 - 2011 • 50% increase in public transport capacity between 2001 -2021 with interim increases to reflect Table 6A.2 • Regular assessment of the adequacy of transport capacity to support development in opportunity and intensification areas.
<p>11. Regeneration and Land Use. To stimulate regeneration and urban renaissance that maximises benefit to the most deprived areas and communities and to improve efficiency in land use through the sustainable reuse of previously developed land and existing buildings.</p>	<ul style="list-style-type: none"> • Percentage of development on previously developed land within London (source ODPM). Note: Already collected as part of the London Plan Annual Monitoring Report process. This is also a UK Government Sustainable Development Indicator. • Protection/loss of open space designated (source: The London Development Database). Note: Already collected as part of the London Plan Annual Monitoring Report process (also mentioned under objective 1). • Average density of new housing (source: DEFRA). This is also a UK Government Sustainable Development Indicator. <p>Existing performance target:</p> <ul style="list-style-type: none"> • Increasing the proportion of development taking place on previously developed land by a minimum of 5% over each 5 year period.
<p>12. Employment. To offer everyone the opportunity for rewarding, well-located and satisfying employment.</p>	<ul style="list-style-type: none"> • Employment opportunities for those suffering from disadvantage in the employment market (source: Annual Local Area Labour Force Survey 2002/2003). Note: Already collected as part of the London Plan Annual Monitoring Report process. • Percentage of lone parents dependant on income support (Department of Work and Pensions & GLA Calculations). Note: Already collected as part of the London Plan Annual Monitoring Report process. • Employment rates in London's most disadvantaged areas (source: Census). Note: This is an indicator Identified in London Development Agency (2005) London Economic Snapshot. • London's employment rate (by women / ethnic group etc) (source: GLA Economics, ONS). This is also a LSDC Quality of Life Indicator. • Workless households with dependant children (source: LSDC). • Unemployment (source: London Health Strategy High Level Health Indicator). <p>Unemployment among BME population (source: London Health Strategy High Level Health Indicator).</p> <p>Existing performance targets:</p> <ul style="list-style-type: none"> • Increased employment opportunities for those suffering from disadvantage in the employment market. Age specific unemployment rates for black and minority ethnic groups to be no higher than for the white population by 2016, 50 per cent reduction of the difference by 2011. • Increased employment opportunity employment market. The UK average by 2016, 50 per cent reduction of the difference by 2011. • Improving performance against Neighbourhood Renewal floor targets as a co-ordinated approach to tackling deprivation. Improvements in performance against all agreed floor targets. • Maintain at least 50% of B1 development in PTAL zones 5-6 and at

Sustainability Appraisal Objective	Possible Indicators and Sources
	least 90% of B2 and B8 development in zones 0-2.
<p>13. Stable Economy. To encourage a strong, diverse and stable economy and to improve the resilience of businesses and their environmental, social and economic performance.</p>	<ul style="list-style-type: none"> • London's GVA per worker over the economic (source: EBS). Note: This is an indicator Identified in London Development Agency (2005) London Economic Snapshot. This is also a UK Government Sustainable Development Indicator. • Visitor spending over the economic (source: IBS). Note: This is an indicator Identified in London Development Agency (2005) London Economic Snapshot. • Business start-up rates (source IBDR). Note: This is an indicator Identified in London Development Agency (2005) London Economic Snapshot. • Business Survival Rates (source: Small Business Service). This is also a LSDC Quality of Life Indicator. • Top European City to locate a business in (source: European Cities Monitor). Note: This is an indicator Identified in London Development Agency (2005) London Economic Snapshot. <p>Existing performance targets:</p> <ul style="list-style-type: none"> • Direction of economic and population growth to follow the indicative subregional allocations and fulfil the priority to East London Development in Opportunity Areas and Areas for Intensification for each subregion measured against the Chapter 5 indicative figures in the London Plan. • Ensure that there is sufficient development capacity in the office market. Stock of office planning permissions to be at least three times the average • Rate of starts over the previous three years. Increasing sustainability and social inclusion by increasing the proportion London residents working in jobs in London over the plan period. Net increase in the proportion of London residents working in London.
<p>14. Creativity and Innovation. To promote creativity and innovation in the environmental and social economy (including new clean technologies, renewable energy, pollution control and the skills sector).</p>	<ul style="list-style-type: none"> • The number of businesses signed up to the Mayor's green procurement code (source: London Remade). This is also a LSDC Quality of Life Indicator.
Taking Responsibility	
<p>15. Liveability and Place. To create and sustain liveable, mixed use physical and social environments that promote long-term social cohesion, sustainable lifestyles and a sense of place.</p>	<ul style="list-style-type: none"> • Percentage of households satisfied with the area in which they live (source: ODPM). This is also a UK Government Sustainable Development Indicator. • Neighbourhood satisfaction (source: GLA MORI Poll). This is also a LSDC Quality of Life Indicator. • Number of visitors per year (source: GLA Economics).
<p>16. Education and Skills. To improve the education and skills levels of the population.</p>	<ul style="list-style-type: none"> • Percentage of businesses reporting a lack of appropriately skilled employees as a significant problem (source LABS). Note: This is an indicator Identified in London Development Agency (2005) London Economic Snapshot. • 19 year-olds with Level 2 qualifications and above (source: ONS Labour Force Survey). Note: This is also a UK Government Sustainable Development Indicator. • The number of nursery places per 100 children in London This is also a LSDC Quality of Life Indicator. • The Quality of Primary School Education (Source: Department for

Sustainability Appraisal Objective	Possible Indicators and Sources
	<p>Education and Skills). This is a LSDC Quality of Life Indicator.</p> <p>Existing performance target:</p> <ul style="list-style-type: none"> An improvement in the percentage of pupils obtaining five or more GCSEs at grades A* to C in Areas for regeneration relative to the LEA as a whole.
<p>17. Ownership and Participation. To promote civic participation, ownership and responsibility and enable individuals, groups and communities to contribute to decision-making at neighbourhood, borough and London-wide levels.</p>	<ul style="list-style-type: none"> Informal and formal volunteering at least once a month in the last 12 months, (Source: Home Office). This is a UK Government Sustainable Development Indicator. This is also a LSDC Quality of Life Indicator. Electoral turnout (Source: GLA). This is also a LSDC Quality of Life Indicator.
Developing Respect	
<p>18. Health and Well-being. To maximise the health and well-being of the population, reduce inequalities in health and promote healthy living.</p>	<ul style="list-style-type: none"> Healthy life expectancy (males and females) (source: GLA and ONS). This is also a UK Government Sustainable Development Indicator. This is also a LSDC Quality of Life Indicator. Life expectancy at birth (source: London Health Strategy High Level Health Indicator). Infant mortality rate (source: ONS). This is also a UK Government Sustainable Development Indicator. (source: London Health Strategy High Level Health Indicator). Prevalence of obesity in 2-10 year olds (source: Department of Health). This is also a UK Government Sustainable Development Indicator. Prevalence of cigarette smoking (source: Department of Health). This is also a UK Government Sustainable Development Indicator. Cardiovascular diseases (source: Health Survey for England). Percentage reporting good health (source: Census & Health Survey for England and London Health Strategy High Level Health Indicator). <p>Existing performance targets:</p> <ul style="list-style-type: none"> By 2026, reducing by at least 10% the gap between life expectancy at birth in Areas for Regeneration and the average in London as a whole. By 2015, reducing by at least 10% the gap between the age standardized death rate from coronary heart disease per 100,000 population in Areas for Regeneration and the average in London as a whole.
<p>19. Safety and Security. To enhance community safety by reducing crime, antisocial behaviour and the fear of crime.</p>	<ul style="list-style-type: none"> Domestic burglaries per 100,000 households (source: Home Office). This is also a UK Government Sustainable Development Indicator. Robberies per 100,000 households (source: Home Office). This is also a UK Government Sustainable Development Indicator. Percentage of people with 'high level of worry' about burglary (source: Home Office). This is also a UK Government Sustainable Development Indicator. Burglary rate per 1,000 households (source: London Health Strategy High Level Health Indicator). Percentage of people with 'high level of worry' about violent crime (source: Home Office). This is also a UK Government Sustainable Development Indicator. Total number of crimes reported to the Police (source: British Crime Survey). This is also a LSDC Quality of Life Indicator. Number of deaths / injuries caused by fires (source: BVPI).

Sustainability Appraisal Objective	Possible Indicators and Sources
<p>20. Equality and Diversity. To ensure equitable outcomes for all communities, particularly those most liable to experience discrimination, poverty and social exclusion.</p>	<ul style="list-style-type: none"> • Pensioners in relative low-income households before housing costs and after housing costs (source: DWP). This is also a UK Government Sustainable Development Indicator. • Children in relative low-income households before housing costs and after housing costs (source: DWP). This is also a UK Government Sustainable Development Indicator. • Percentage of BME police officers employed by the Metropolitan Police Service (source: MPS). • The percentage of top 5% earners employed by LFEPA that are women; from black, Asian and minority ethnic groups; and who have a disability (source BVPI11a, 11b, and 11c respectively). <p>Existing performance indicators</p> <ul style="list-style-type: none"> • An increase in the provision of childcare places per 1000 under-fives, particularly in Areas for Regeneration.

In summary, it would be advantageous to broaden the monitoring of the impacts of the London Plan where possible, and to contribute to a central framework that provides a picture across the wider impacts of the London Plan and other strategies. The following additional issues may need to be monitored over the life of the Plan.

- The London Plan has made an admirable attempt to identify and manage growth in a sustainable manner, but this will need to be constantly monitored and reassessed. The nature of economic growth can often tend to be at the detriment of social and environmental objectives. The scale of the development expected in London in terms of housing to accommodate an increase in population and office space to meet anticipated job growth have negative implications if not managed correctly.
- Including health and well-being indicators is an important method by which to monitor health change and to demonstrate the value-adding features of the London Plan's policies in reducing health inequality and delivering good health.
- Monitoring the effectiveness of transport policies and whether sufficient modal shift is being made to not only manage growth but meet air pollution and CO₂ targets as well as accessibility and equity objectives in chapter 6 in the annual report e.g. by air pollution levels and traffic volumes mapped by locality.
- Monitoring the contribution of alternatives to aviation e.g. high-speed rail links, completing the channel tunnel rail link and working with the South East to improve longer distance passenger freight and rail traffic – all of which should provide a real alternative to domestic air travel. There is also insufficient data available to indicate how much these alternatives, along with other measures to improve surface access can displace the growing traffic in aviation (most of the data is collected on movement within London).
- How boroughs are contributing to London- wide targets for energy, in particular for combined heat, power and cooling (CHP).
- Aside from the ecological footprint, (the methodology for which is being revised), there is no means of assessing the total resource use in London. This makes it very difficult to set standards and accurately assess whether London is living with environmental limits. More robust evidence would help place policies within appropriate limits and at the same time build the business case for virtuous cycles.
- Air quality is rarely discussed directly and no real evaluation is proposed. The mention of pedestrian and routes enhancement does have potential to make

a positive indirect contribution, but there is no detail on how the effects of these will be monitored.

- Clear monitoring and standards should be set to ensure that the intention to integrate measures to address climate change and other environmental impacts is followed through. Data from aviation should be included in carbon inventories and assessments.
- The subregional development frameworks (SRDFs) have attempted to map areas of diversity and deprivation with a view to raising equality of opportunity. The prioritisation of economic development in more deprived areas is one attempt to address this. This can be measured through the quality of life indicator 'measure of income inequality' and the update to 1.40 to closely monitor the growth in the working age population that is drawn from BAMEs addresses this.
- Continue to monitor the extent to which new facilities are located in areas of need and areas undergoing regeneration so that local communities can take full advantage of any opportunities that arise.
- Further monitoring may be required to address issues identified in the Regional Flood Risk Assessment work that is being prepared by the GLA, with advice from the Environment Agency. The Environment Agency has agreed to provide relevant data they may hold where necessary.

These, along with the list of indicators compiled in Table 5 could be used to augment the monitoring programme already underway for the London Plan. Indicators should be regularly reviewed to ensure that the indicators sufficiently reflect trends on the implementation of the Plan and are fully relevant.

Following the Examination into the Further Alterations, and prior to adoption of the alterations, the GLA will prepare a statement that will outline the final proposals for monitoring the alterations. This is in accordance with the requirements of Article 9(1) of the European Directive 2001/42/EC and Task D3 of the government guidance on Sustainability Appraisal to outline the sustainability considerations that have been integrated into the alterations, the reasons for choosing the preferred policies, and measures for monitoring them.

3 Influence of the SA

Early iterations of the SA were carried out in May and July. These were completed in order that the GLA could take recommendations into account early on in the policy drafting process. This proved invaluable in enabling the SA to genuinely help strengthen the policies and many of the recommendations have been adopted. Many minor changes have been made throughout the Plan to the policies and supporting text in order to provide greater clarity and capture a wider breadth of issues that will lead to improved environmental, economic and social outcomes. Table 6 illustrates most of the main recommendations that have been integrated into the existing draft Further Alterations to the Plan and addressed the key significant impacts identified during early stages of the SA.

Table 6: Revisions to the London Plan as a result of the SA

<i>Policy</i>	Changes prompted by the SA
<i>Subregional policies</i>	<ul style="list-style-type: none"> ➤ One of the key findings of the initial findings of the SA was a weakness in the subregional policies in chapter 5. Many of the excellent policies elsewhere were not reflected sufficiently in the subregional policies. This has been rectified by a general statement that is now incorporated at the beginning of chapter 5, 5.17i that covers the key policy areas signposting users to relevant sections elsewhere in the Plan.
<i>Biodiversity</i>	<ul style="list-style-type: none"> ➤ Several changes have been made to the Plan as a result of the screening for Appropriate Assessment. These changes strengthen policies and supporting text so as to avoid adverse effects on the conservation objectives of designated EU conservation sites (see appendix C for full changes). ➤ A bullet point under policy 3D.10, chapter 3D has been reinstated giving guidance to encourage functional and physical linkages within the network of open spaces and to the wider public realm, improve accessibility for all throughout the network and create new links based on local and strategic need. ➤ The last paragraph under 3D.7, chapter 3D has been adjusted to stipulate that all developments, including major developments, should incorporate appropriate elements of open space that make a positive contribution to the wider network. ➤ Paragraph 3.256, chapter 3D has been amended to say, “It is also necessary to assess and protect biodiversity outside the areas of strategic importance.”
<i>Presentation and language</i>	<ul style="list-style-type: none"> ➤ Due to the complexity of the Plan, it is by its nature, a large and sometimes inaccessible document and we understand GLA have endeavoured to streamline it as much as possible. A key concern is ensuring that users of the document know where to locate all relevant policies on a particular aspect. This makes sufficient

Policy	Changes prompted by the SA
	<p>cross references crucial. Therefore a users guide and user-friendly index will be produced at the front of the Plan to clearly signpost all relevant policies pertaining to key issues.</p>
<i>Water</i>	<ul style="list-style-type: none"> ➤ Additions have been made under policy 4A.11 which now reflects a clear hierarchy for managing water specifically reducing demand, conserving water use and then reusing. It emphasises minimising amount of energy consumed in water supply processes and cross references to other relevant policies are made in the supporting text. A maximum water use target has also been set per bed space for residential development. ➤ Policy 4A.5vii also sets out a drainage hierarchy for sustainable drainage. ➤ Policy 4A.15 has been updated to 'improve the operation of existing buildings' in addition to new build. ➤ A new policy 4B.4i has been added on retrofitting London's buildings. This aims to reduce water use and policy 4A.2i on sustainable design and construction also now specifies making the most effective and sustainable use of water. This should go some way to addressing the substantial water supply deficit forecast which is likely to be exacerbated by further growth.
<i>Energy</i>	<ul style="list-style-type: none"> ➤ To cascade responsibility to deliver the Mayor's targets for CO₂ emission reduction and renewable energy generation, boroughs are now 'encouraged to identify capacity' for hydrogen (4.23iii, chapter 4A) and set consistent targets for the generation of renewable energy (4.18iv chapter 4A) and achieve minimum reduction targets for London in line with London-wide targets (policy 4A.2ii). ➤ Policy 4A.5ii and 4.23iii now addresses working with the London Hydrogen Partnership and asks the London Climate Change Agency, boroughs and others to identify hydrogen capacity, in the first paragraph of 4A.5ii. This should include site capacity for relevant infrastructure. ➤ Support for micro-renewable generation in small and major developments strengthened by addition to 4.18iii including a reference to the work of London Energy Partnership (LEP) on low carbon tool kit that can be applied to micro generation. ➤ A connection is now made between renewable energy generation and benefits for local communities under 4.23 ii to ensure that opportunities arise for and from community schemes.

Policy	Changes prompted by the SA
	<ul style="list-style-type: none"> ➤ Cross reference to polices on renewable energy have now been added to chapter 1 (1.50) and chapter 6, policy 6A.3 and 6.70).
<i>Housing</i>	<ul style="list-style-type: none"> ➤ The problem of retrofitting and the Plan's limited ability to influence it has been acknowledged in the introduction and chapter 2, the broad development strategy. A new policy 4B.4i has been added on London's building retrofitting. Greater emphasis has also been placed on retrofitting rather than demolition under 4A 4.1 iv: with "precedence given to retrofitting over demolition wherever practical." ➤ There are greater links between chapter 3A and policies promoting sustainable design and construction. For example policy 3A.4i on quality of new housing provision states that "residential development should take account of the design and construction policies set out in chapter 4, part A. 3.25i, chapter 3A now also refers back to chapter 4A.
<i>Waste/natural resources</i>	<ul style="list-style-type: none"> ➤ Sustainable consumption and production is now promoted in supporting text 3.147 (chapter 3B) attempting to tackle some reducing waste at source. ➤ The issue of collaboration at the subregional level in chapter 2 has been reflected in chapter 5.
<i>Climate change</i>	<ul style="list-style-type: none"> ➤ The future contribution of shipping to climate change (which has been identified as one of the two fastest growing sources of emissions along with aviation) has been acknowledged with supporting action to mitigate its impact which has been added under 3.173 (chapter 3C): "such proposals, if supported by improvements in access and appropriate measures to minimise emissions...." ➤ More emphasis has been made in chapter 5 on flooding on the expansion in the Gateway, citing the work of the Climate Change Adaptation checklist in a new paragraph after 5.17, under 4.30iv/4.88 (chapter 4A) and chapter 6 (see 6.70) also now refers to the draft Climate Change Adaptation Strategy and draft Water Action Framework.
<i>Built and Historic Environment</i>	<ul style="list-style-type: none"> ➤ A reference to sustainable design and construction has now been made under paragraph 5.17, chapter 5 which sets the guidelines for all subregional policies. ➤ The reference to sustainable before policy 4B.1 Design principles for a compact city, has been deleted to avoid confusion with policy 4A.2 promoting world class architecture and design.

Policy	Changes prompted by the SA
	<ul style="list-style-type: none"> ➤ Policy 4B.1, chapter 4B now address security issues, local context, history and character and so on and refers back to the main policy 4B.5i on safety, security, and fire protection and prevention.
<i>Accessibility</i>	<ul style="list-style-type: none"> ➤ Chapter 3B at the end of paragraph 3.133 has been updated to highlight the fact that future development is likely to require greater co-operation between developers and technology experts so that communication infrastructure is put in place. This will need to be updated in line with emerging evidence as it arises. ➤ Chapters 3A and 4A (policy 4A.8) now refers to objective 5, on reducing the need to travel as it was only really addressed in 3C. This is directly supported by policies on integrating key services as part of any development and is a key mechanism to reducing the need to travel. ➤ A new addition now supporting car free developments which should be encouraged where feasible, taking into account of the need for disabled parking (3.163 in chapter 3C).
<i>Regeneration and land use</i>	<ul style="list-style-type: none"> ➤ Paragraph 3.263 now looks at how soil quality could be improved by stating “source of food, improving soil quality and promoting.”
<i>Employment/stable economy</i>	<ul style="list-style-type: none"> ➤ Chapter 5 now refers back to the Economic Strategy, other policies and supporting information elsewhere in the Plan that encourages diverse industries e.g. social enterprises, those around waterways (4C), renewable energy services, alternative technologies for transport etc. ➤ Chapter 3B, 3.147 now refers to stimulating growth in energy efficiency services. ➤ New policy 2A.6 The suburbs, chapter 2 now refers to ensuring economic benefits flow to the suburbs.
<i>Liveability and place</i>	<ul style="list-style-type: none"> ➤ Policy 3A.15, chapter 3A Protection and enhancement of social infrastructure and community facilities has been expanded to include a range of facilities such as sport and leisure, schools, nurseries and so on. 3.78 now also refers to sporting or cultural facilities.
<i>Education and skills</i>	<ul style="list-style-type: none"> ➤ The policy on sustainable design and construction in chapter 4A has been extended to educational facilities to create a good environment for learning.

Policy	Changes prompted by the SA
<i>Health</i>	<p>Many of the recommendations throughout that have been accepted are expected to have effects on human health. Of direct and obvious importance for human health are the following:</p> <ul style="list-style-type: none"> ➤ Supporting text on Policy 3D.4i has the following addition: “The Mayor is particularly concerned to address issues associated with ‘problem gambling’. He will require an action plan to mitigate its impacts, including contributions to meeting its additional health costs. He will also seek to maximise skills and training provision. ➤ Environmental inequalities are now acknowledged in chapter 3A. ➤ The London Plan now includes indicators on health and health inequalities
<i>Ownership and place</i>	<ul style="list-style-type: none"> ➤ Chapter 2 has introduced ownership and participation as a stronger principle within policy 2A.1 on sustainability criteria. ➤ The slightly revised policy 3A.14, chapter 3A on addressing the needs of London’s diverse population has made community engagement more explicit. ➤ Chapter 4A has developed its reference to community engagement, particularly on the need around people’s involvement in carbon reduction measures and adds to 4.1iii: “agencies to raise awareness and promote...”. ➤ Chapter 5, 5.8 now makes reference to community involvement and engagement.
<i>Safety and security</i>	<ul style="list-style-type: none"> ➤ Paragraph 3.181iii, chapter 3A has been updated to reflect the paramount importance of the safe transport of children and young people. This reflects the proposal by the Mayor in the Sol ‘to ensure more suitable, safe and efficient transport of children and young people’. ➤ Chapter 5, 5.17i is has been strengthened to address safety and security as previously the only policy for the North East of London made any reference to safety, stating ‘ensure that new development is sustainable, safe, secure and well designed (5C.1)’. ➤ Designing out crime will be an issue with respect to the design of the Olympic area. Policy 4B.1Design principles for a compact city now addresses security issues as well as 4B.5i and should apply to the design of the Olympics. ➤ Chapter 3A, 3.62ii has additional guidance on working

<i>Policy</i>	Changes prompted by the SA
	with partners to improve understanding and communication between different communities to improve social cohesion and helps address the sub-objective to ‘foster improved, sustainable and mutually beneficial relationships with neighbouring regions’.
<i>Equality and diversity</i>	➤ Policy 3A.14, chapter 3A now includes additional references to community engagement and security which is then referred back to other relevant policies in chapter 4B, designs on London.

4 Appraisal of Alternatives

A statutory part of the Sustainability Appraisal process is the development of alternative ways of achieving the particular plan or programme. The SEA directive requires that “reasonable alternatives, taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated” and “an outline of the reasons for selecting the alternatives dealt with” (Article 5.1 and Annex I (h)). This encourages authorities to consider whether there are ways of achieving similar outcomes with reduced adverse environmental, social and economic effects.

The appraisal of the waste apportionment figures was asked for by the Panel at the Examination in Public into the early alterations to the London Plan. It has explicitly considered various options in its own right as it takes into account a set of results put forward by consultants who undertook a modelling exercise to devise waste apportionment figures. These are presented under section 5.5.

Broad scenario development is increasingly regarded as good planning practice and has usefully informed development of other regional strategies. The GLA has therefore commissioned scenarios which complement and are informed by the new research on climate change but focus on the key economic, demographic and transport drivers of change identified in the 2004 Plan. They also take account of possible changes in the other ‘drivers’: those associated with lifestyles and values, new technology and social justice. More specifically, the GLA commissioned this research to:

- develop, refine and justify a set of broad scenarios illustrating possible future London circumstances, especially in economic, demographic and transport terms; and
- test the robustness of the London Plan’s objectives and key policies in the light of the scenarios, identifying those objectives and key policies that may be at risk in the light of changes to the main drivers of change.

This project has been carried out in parallel with, and has informed, preparation of the Further Alterations to the London Plan. It will also inform the ongoing SA process and has drawn on data that was current at the time, recognising that information will be updated as the alterations go through their preparation process.

As the proposed changes to the Plan are alterations only, rather than a full replacement three main options are considered:

- 1) Do nothing and continue the application of the London Plan as it stands.

2) Make alterations which strengthen policy in several areas in the pursuit of sustainable development.

3) Further Mitigation Measures.

Option 1 – Do Nothing

The London Plan is not responsible for proactively encouraging growth, rather, its objective is to accommodate growth in London that is anticipated to happen in line with London's role as a world city. Therefore, the options are based on this assumption rather than questioning the nature of the growth itself.

As it stands, the current London Plan contains many excellent policies that should contribute to the sustainable development of London. However, in light of the anticipated increase in population -- from 7.3 to 8.1 million in 2016 and the challenge posed by climate change – many of them will be inadequate to steer development that will proactively encourage growth in a sustainable way.

The scale and pace of development planned over the next 20 years will cut across a range of issues including biodiversity, access to green spaces, safety and security, transport and services infrastructure, and social inclusion and human health. Population is now expected to reach in the range of 8.4 to 8.7 million by 2026. Without any changes to the Plan, it is more likely to lead to encroachment on open spaces, an increase of carbon dioxide emissions, congestion and associated air pollution and economic costs; continued reliance on fossil fuels and rising housing costs across London. This could be exacerbated by continued uncertainty about how the global economy will develop.

Option 2 – Further Alterations

The draft Further Alterations to the London Plan have been specifically targeted at making changes in response to the key emerging issues facing London. The timescale of the Plan has been extended by 10 years to 2025/6 and therefore the alterations set the precedent for how London will respond to and manage the continued influx of population and accommodate growth.

As the Mayor states in the Statement of Intent (Sol), the fundamental strategy “seeking to accommodate economic and population growth within the city – will continue to underpin the London Plan as will my vision for London to become an exemplary sustainable world city”.⁸ The Sol goes on to highlight the ten policy areas out of fifty under review: London as a world city; London's economy; housing, social exclusion; transport; London's geography; London's suburbs; liveability; and the need for any adjustment to Plan policy related to the 2012 Olympic and Paralympic Games. One of the key drivers is the need to adapt to and mitigate the effects of climate change.

The appraisal shows that the draft Further Alterations to the London Plan have the potential to increase sustainable development in London and steer trends in a positive manner for example, raising the standard of construction. This will be achieved through a series of policies that prioritise climate change, public transport and accessibility, affordable housing, renewable energy, waste facilities and health.

⁸ Reviewing the London Plan Statement of Intent from the Mayor December 2005

These policies are mutually reinforcing, for example, by reducing congestion you reduce air pollution and CO₂ emissions, improve health and reduce the burden to the economy.

The good intentions expressed in the Sol have, on the whole, been borne out in the alterations. What the changes bring is stronger aspirations against the nine policy areas with sufficient clarity and guidance (both within the Plan and through supporting documentation) to send a clear signal to developers and boroughs on how policies should be implemented. Policy 3A.22 higher and further education is a good example where cross references to other policies including safety, sustainable design and construction, the public realm, greenbelt and all open spaces will help to ensure that policies are brought in alignment and delivered consistently.

Many of the policies will have indirect and direct effects on human health. The population health outcome of the Plan depends upon the way in which the majority non-health policies are implemented. The new objective on health and the new policy direction on reducing health inequalities is a beneficial and highly positive addition although questions remain about how this will be prioritised, achieved and measured throughout the Plan. Policies on health impact assessment (3A.20) and on the diverse needs of London's population (Policy 3A.14) are strongly supported.

Economic growth and economic development will have significant effects on people's health. Ensuring that this growth is located firmly in the context of wider community growth and not confined to the higher socio-economic groups, will generate the most social and economic benefits for London. The policies on accessibility and transport are vitally important for health and well-being. The policies on play areas and on childcare are welcomed, as are the policies on trees and woodland. Access to green space is important for levels of physical activity and also for mental health. The climate change policies are strongly welcomed including mention of adaptation and behaviour change. Climate change will affect the lives of Londoners in many ways: the health issues we expect to be associated with climate change will become increasingly apparent.

The SA raises concerns about the social and public health effects of Policy 3D.4i, which covers the development of casinos. This policy is in line with government policy and therefore the Plan suggests steps for mitigating potential adverse effects.

Uncertainty remains over economic development and how it will directly impact on equality and diversity trends. Will the benefits accrue to the outer regions as well as those within the central activity zone and opportunity areas? Implementation in the subregions will be central to delivery of the vision.

Additional Option 3 – Further Mitigation Measures

On the whole, the scope of alterations as proposed is commensurate with the future drivers of change. However, we believe there are still ways in which the Plan could be made more sustainable and recommendations have been made regardless of the significance of the impact. As these recommendations are in addition to what has been included in the further alterations, mitigation measures have been proposed under section five – appraisal findings to address any adverse effects that may be experienced in the future. If required these should increase the likelihood of social, economic and environmental conditions improving in harmony across London and benefiting all Londoners.

5 Appraisal Findings

This section presents a full assessment of the likely sustainability outcomes of the alterations to the London Plan to complement the key findings presented in the non-technical summary. The areas are grouped according to virtuous cycles as they provide a way of logically viewing the objectives and delivering a cross-cutting analysis. A summary of the impact, how well the policies will meet that particular objective, and an overall assessment and trends is presented at the start of each section. Then, a narrative sets out the context and explores what changes have been made in the Plan, what outcomes they are likely to have and any relevant mitigation measures. At the end of each section, additional recommendations are made that have been developed during the SA, but are targeted at relevant strategies and documentation outside the scope of the London Plan.

The full assessment, showing all the appraisal criteria and rating components is attached in appendix I. The impact is rated according to the following scale:

- ++** Significant positive impact (9 to 18)
- +** Minor positive impact (3 to 8)
- ?** Mixed impact or neutral (- 2 to 2)
- Minor negative impact or uncertain (- 3 to - 8)
- Significant negative impact (-9 to -18)

This scale is further summarised by the following colour code to help with interpretation of the assessment tables:

Red = - 18 to -7

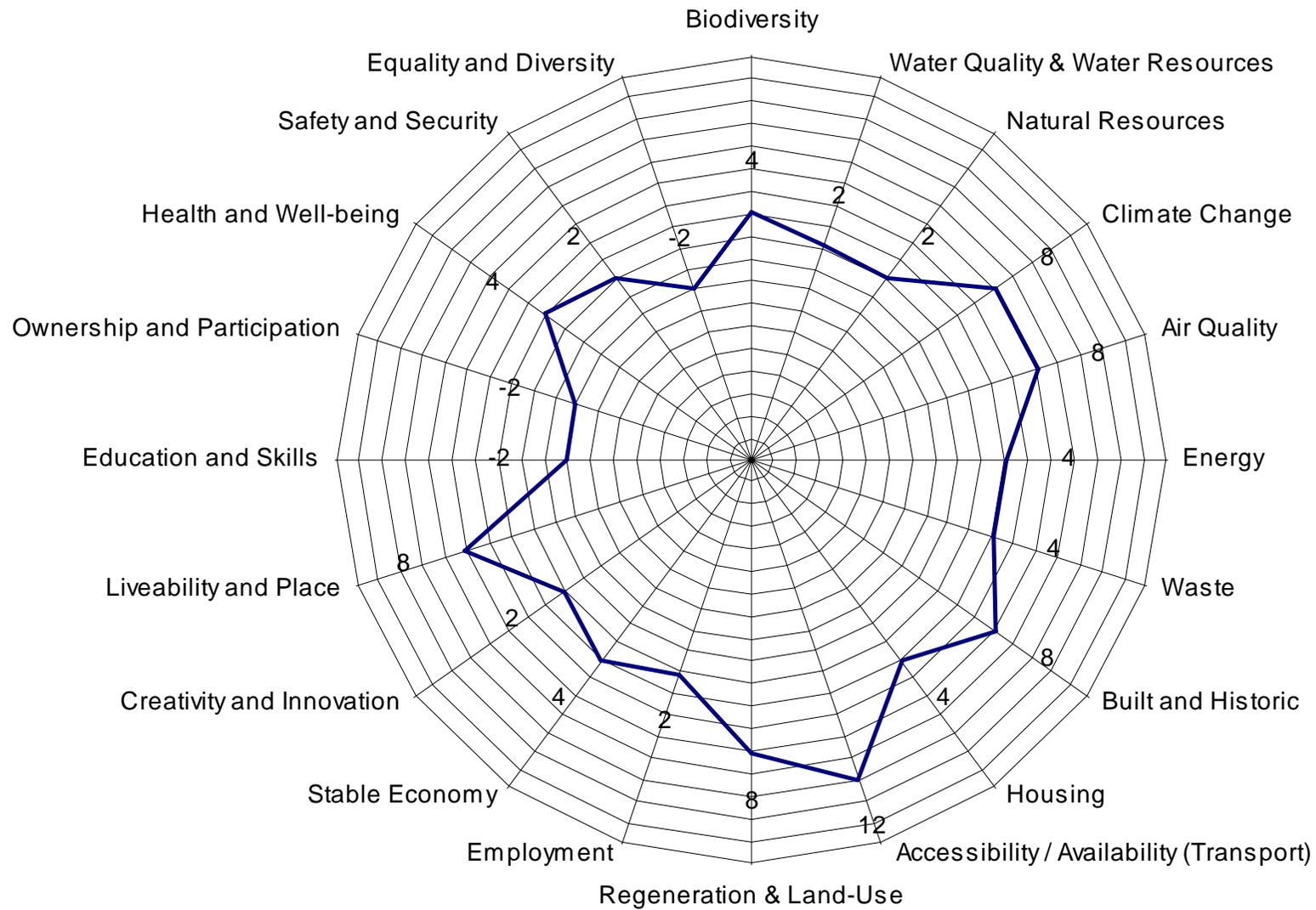
Amber = -6 to 6

Green = 7 to 18

The radar diagram below presents the cumulative effect of the Plan against all 20 objectives used throughout the Sustainability Appraisal. This is based on the policies as they now stand, after changes were made following on from the interim set of recommendations. Some inconsistencies that were identified during the public consultation have also been corrected.

The overall rating for these objectives is highlighted below, negative ratings appear towards the centre of the diagram and positive ratings towards the perimeter on a scale of 'significant negative, minor negative, mixed impact, minor positive to significant positive'. The full range runs from -18 to 18. Each rating has been derived from assessing the impact (positive, negative or mixed), magnitude (high, medium or low) and probability of occurrence (high, medium or low). These have been arrived at by a combination of looking at the evidence base, reviewing policies and professional judgement.

Please note, the ratings are based on a relative scale that looks at the effects on each objective. A negative score does not necessarily mean that the alterations have a negative effect on an objective and the scores should be interpreted in terms of the scale above (for example: negative scores could be due to uncertain or mixed impacts).



It is clear that monitoring during the implementation of the alterations is needed to confirm any actual effects over time. Monitoring is needed to confirm these outcomes and where possible mitigation measures should be adopted during implementation to reduce or avoid any adverse effects. All other changes should lead to some improvements particularly against air quality, energy, waste, climate change, transport, built & historic environment, housing and regeneration and land use.

A successful economy is an important prerequisite for enabling delivery of a range of social and environmental objectives; the way in which the economy is managed will determine the extent of win-win-win outcomes.

The Plan lays the foundation for reducing unemployment and stimulating economic activity by making provision for office space and promoting the central activity zone, opportunity areas, regeneration zones and subregional implementation. Questions remain over the resulting pressure on natural resources and whether benefit will accrue to those most in need. This will be determined on the ground during actual implementation.

Most of the ratings are indicative of the actual scale of impact the Plan can have overall on a particular issue. This varies considerably according to the objective. For example, it can significantly affect accessibility but has limited influence on safety and security which poses such huge challenges for a whole range of organisations across London. The alterations will help design out crime and the perception of crime, reduce the threat of terrorism in public transport, but significant changes will only result from a concerted effort across London. The policies on protecting open space are already working but it is unclear whether these specifically will have an impact on biodiversity, it is more likely they will maintain the status quo given the expected increased levels of development in London. However, the whole range of policies that cumulatively make up liveability and place should help to make a reasonable improvement in London as will the policies regarding health and well-being.

The combined effect of the impacts of the further alterations is predicted to be on the whole positive, and no significant negative effects were identified.

The next section presents a high level overview of the key trends and assessment within the table, then explores particular aspects in detail in the following narrative. Measures are proposed to further enhance positive environmental, economic and social outcomes from the Plan where necessary. It looks at cross-cutting issues relating to accessibility, water, waste, natural resources, energy and climate change, the built and historic environment, housing and regeneration and land use. The relevant overarching objectives with the Plan are to:

- Make London an exemplary world city in mitigating and adapting to climate change.
- Improve London's accessibility.
- Make London a healthier and better city for people to live in.
- Accommodate London's growth within its boundaries without encroaching on open space.

We look at neighbourhood quality; housing choice; sustainable design and construction; quality of existing housing stock; water demand and consumption; flood risk; and water quality.

Table A: Cross-cutting Analysis A

SD aim	Impact	Evidence base	Assessment
<p>Water Quality & Water Resources To improve the quality of surface waters and groundwater and to achieve the wise management and sustainable use of water resources.</p>	<p>?</p>	<p>Per capita consumption of water ranges between 150 and 165 litres a day and is rising (average household per capita consumption for England and Wales was 154 l/h/d for 2003/2004).</p> <p>London is predicted to suffer from a deficit of between 200 to 300 million litres per day (Ml/d) in a drought. This is equivalent to the daily demand of more than 1.2 million Londoners. (Ref: Thames Water's London Resource Zone, note this zone covers approx. 64% of the GLA London Plan area)</p> <p>On average each person in a small household uses more water than in a large household and smaller households are on the increase.</p> <p>The move away from manufacturing to a service and knowledge based economy may help to reduce overall consumption. However, this is insufficient to address the problem since much of this change has already occurred and water for manufacturing and domestic use is drawn from different sources. The overall amount to non-households is forecast to increase slightly over the lifetime of the Plan.</p>	<p>The alterations will have a mixed impact on this objective. It is clear that the alterations go a long way to addressing water issues in London, however, the implementation of the plan will need to carefully monitored to ensure that the growth of London is managed in such a way to avoid or mitigate negative effects on water quality and the supply of water resources.</p> <p>The baseline position shows that there is a substantial water deficit and the projected scale of development (including the recently proposed housing targets) will place significant pressure on water resources. Insufficient cross references puts quality at risk and the issue is only adequately addressed in 3A.</p> <p>The alterations propose a number of measures to address these issues. The plan has positively included a new standard for water usage added for new developments (4A); there are now additional cross-references to water usage included in relevant parts of the plan (e.g. housing to water policies in 4A); additions have been made under policy 4A.11 which now reflects a clear hierarchy for managing water specifically reducing demand, conserving water use and then reusing. It emphasises minimising the amount of energy consumed in water supply processes and cross references to other relevant policies are made in the supporting text. Importantly, a maximum water use target has also been set per bed space for residential development. This should go some way to ensuing future water usage is managed in the most effective and sustainable way.</p>

SD aim	Impact	Evidence base	Assessment
			<p>Given the London Plan is primarily concerned with new development, it is positive to see that Policy 4A.15 has been updated to 'improve the operation of existing buildings' in addition to new build. A new policy 4B.4i has been added on retrofitting London's buildings. This aims to reduce water use and Policy 4A.2i on sustainable design and construction also now specifies making the most effective and sustainable use of water. This should go some way to addressing the substantial water supply deficit forecast which is likely to be exacerbated by further growth. The Mayor also supports the option that provides a complete solution to inadequate drainage that would result in pollution from any flooding.</p> <p>The overall increase in development in London will lead to increase in impermeable surfaces and therefore increased run off. To address this Policy 4A.5vii sets out a drainage hierarchy for sustainable drainage. However the region's water quality still remains at risk from flooding and inadequate drainage systems. To address this there is a clear aim to achieve 'good ecological status' under the Water Framework Directive.</p> <p>Chapter 4A on climate change and London's metabolism is excellent in its coverage of water issues and contains relevant policies on Sustainable Drainage systems (SUDs) and efficient use of water. The value of water as a resource is positively supported in 4C in its role in supporting biodiversity, recreation and economic opportunities. Water is discussed in more detail in section 5.2.</p>
Natural Resources To minimise the	?	Data trends are presented under other relevant objectives water, waste and energy.	The alterations will have a mixed impact on natural resource with increasing demand for water, use of energy, pressure on biodiversity and open space arising from population

SD aim	Impact	Evidence base	Assessment
<p>global, social and environmental impact of consumption of resources by using sustainably produced, harvested and manufactured local products.</p>			<p>growth and increased economic activity (depending on the type of activity). A huge impact is possible with resources needed for housing alone, but the degree is highly uncertain depending on enforcement of standards, see 5.1.3. for further discussion.</p> <p>Sustainable consumption and production is now promoted in supporting text 3.147 (chapter 3B) attempting to tackle reducing waste at source and the issue of collaboration at the subregional level in chapter 2 has been reflected in chapter 5.</p> <p>Without the alterations the impact would be far worse. See other sections on energy, waste, biodiversity and water.</p>
<p>Climate Change To address the causes of climate change through minimising the emissions of greenhouse gases and ensuring that London is prepared for its impacts.</p>	+	<p>Energy use in London has been increasing by about 1% per annum since 1990. Associated CO₂ emissions fell until 1999 as electricity production switched from the use of coal to natural gas. CO₂ emissions have been rising again since 1999. 2003 is the last year of any published data.</p> <p>Aviation does contribute significantly towards the economy. Of the 28 million visitors in 2002 to London, 12 million were overseas residents. Two-thirds of visits were made by air and these accounted for 81 % of spending at £5.8bn in 2001. This is marginally more than the £5.2billion, a relatively small proportion of London's residents spent travelling overseas.</p> <p>Climate change is likely to result in increased rainfall (including heavier downpours), and more unpredictable weather patterns (London Climate Change Partnership). This may make London more susceptible to flooding,</p>	<p>The alterations will, overall, lead to a positive impact on adapting to and mitigating climate change - the need to manage climate change is one of the primary drivers for updating the Plan. Changes directly support this objective and pervade all the chapters except chp 5. Positive changes on improving transport, sustainable design and construction, promoting behavioural change will all help mitigate emissions..</p> <p>Changes include the future contribution of shipping to climate change (which has been identified as one of the two fastest growing sources of emissions along with aviation) with supporting action to mitigate its impact under 3.173 (chapter 3C). More emphasis has been made in chapter 5 on flooding on the expansion in the Gateway, citing the work of the Climate Change Adaptation checklist and chapter 6 (see 6.70) also now refers to the draft Climate Change Adaptation Strategy and draft Water Action Framework.</p>

SD aim	Impact	Evidence base	Assessment
		<p>given it is already vulnerable to flooding from four main sources; tidal from the Thames; fluvial from Thames and tributaries to the Thames; sewer flooding and surface water flooding from heavy rainfall.</p>	<p>However, the probability of all policies being implemented in a way that will deliver ambitious and necessary targets and adapt adequately is less certain. CO₂ emissions are on the increase in London and there remain potential areas of conflict which are yet to be resolved – notably aviation.</p> <p>There remains uncertainty over flood risk which could have severe ramifications and requires further clarification pending a flood risk assessment.</p> <p>Climate change will also impact on infrastructure, pollution, biodiversity and health.</p>
<p>Air quality To improve air quality</p>	<p>+</p>	<p>Despite the downward trends (between November 96 - Dec 2003 particulate concentrations decreased by 19 %, NO_x & carbon monoxide fell by 33 % and 53 % respectively with Nitrogen dioxide (NO₂) falling by 6 % with only ozone concentrations increasing by 43 %), air pollution in London remains the worst in the UK and amongst the worst in Europe. It contributes significantly to ill health with the vulnerable suffering disproportionately with an estimated 1,600 deaths and 1,500 breathing related hospital admissions per year as a result of air pollution. Perception of air quality is particularly poor with 71 % believing air pollution to be a problem and 66 % of respondents believing that it affects quality of life.⁹</p> <p>The Mayor has a legal obligation to meet mandatory limits for seven pollutants to achieve government targets in line</p>	<p>The section on air quality has only been marginally updated, and relies strongly on policies on transport, which will lead to a positive impact arising from the alterations. The two main sources of air pollution arise from road traffic (accounting for 60 % of emissions) and aviation, with much stronger localised pollution around Heathrow, major road networks and points of congestion such as the M25. It is clear from mapping that roads correspond with areas of greatest impact. The assumption is that air quality will be sufficiently improved as a by-product of addressing congestion and improving the public transport infrastructure. Whilst this may happen, the increase in aviation will worsen trends, particularly for local communities.</p> <p>Air pollution from demolition and construction should be reduced through an addition to policy 4A.6 on promoting</p>

⁹ The Mayor's Air Quality Strategy

's Air Quality Strategy

¹⁰ *Making the case: improving health through transport*. 2005. London, Health Development Agency, Davis, A. et al. Avai

SD aim	Impact	Evidence base	Assessment
		<p>with EU directives. It is estimated that London will not achieve targets for NO₂ and daily particulate matter.</p> <p>Adults who are physically active have 20–30% reduced risk of premature death and up to 50% reduced risk of developing major chronic diseases such as coronary heart disease, stroke, diabetes and cancers.¹⁰</p>	<p>sustainable construction.</p> <p>Although trends are, on the whole, in the right direction, this is still a significant issue, with London set to fail two EU targets.</p>
<p>Energy To achieve greater energy efficiency and to reduce reliance on fossil fuels for transport, heating, energy and electricity.</p>	+	<p>London's total consumption is considerable, equal to that of Greece or Portugal. The rapid increase in ICT has led to significant increase in electricity consumption from heat and cooling typically using conventional electrical a/c systems. Of the renewable energy currently generated, over a quarter comes from energy from sewage gas, eight % from landfill gas and 0.3 % from solar water heating. It is difficult to assess the contribution of individual developments at present.</p> <p>Carbon emissions from the existing housing and building stock will continue to represent the majority 70 % of total CO₂ emissions - of which 44 % is residential and 35 % commercial.</p>	<p>The alterations will lead to a marginal positive improvement in energy. This is because even with good policies, efficiency improvements are focused on new build, which only make up a small proportion of total building stock and despite some mitigating impact through the alterations, demand will still rise due to growth overall. This will be affected substantially by the standard of new construction and retrofitting which is explored in 5.1.3 and 5.1.4. Alternative technologies are positive promoted including producing energy from waste using new and emerging technologies, CHP and additional cross references to policies on renewable energy are made in relevant chapters e.g. 1 (1.50) and chapter 6, (policy 6A.3 and 6.70).</p> <p>Additional changes leading to positive improvements now cascade responsibility to deliver the Mayor's targets for CO₂ emission reduction and renewable energy generation; signal support micro-renewable generation in small and major developments and make the connections between renewable energy generation and benefits for local communities (under 4.23 ii) to ensure that opportunities arise for and from community schemes.</p>
<p>Waste To minimise the production of waste across all</p>	+	<p>London produces around 17 million tonnes (mt) of waste per annum which is expected to rise to around 22.6 mt in 2020. Waste per capita is actually the lowest of all the regions but London suffers from poor recycling rates.</p>	<p>The alterations will lead to some positive improvements in waste management. There is vast improvement in the way waste will be disposed of, leading to self-sufficiency within London's ambitious targets. Good recycling targets set</p>

SD aim	Impact	Evidence base	Assessment
sectors and increase reuse, recycling, remanufacturing and recovery rates.		<p>The existing target is to deal with 75 % of London's waste within the municipal boundaries by 2010, rising to 85 % by 2020. (70 % currently goes into landfill sites located outside London) This will have significant implications for land use in London as it is estimated that existing waste transfer sites have the capability of accommodating 10.7mt capacity by 2020 with a target of 19.6mt. Additional requirement is forecast to stand at 244 hectares at 16.2 ha p.a between 2005 - 2020.</p> <p>The targets set by the Mayor send a clear signal on what could and should be achieved in recycling. These include exceeding recycling or composting levels in municipal waste of 35 % by 2010 and 45 percent by 2020 and stretch targets (supported by the Mayor, but not reflected in policies) of recycling and composting of municipal waste of 60 % by 2015. This is a challenge on the current low recycling rates of 11 % achieved in 2003/04. Recycling targets only cover composting, glass and paper – 70 % of glass and paper to be red by 2020</p>	<p>except for plastic, but there is huge gap between these and current recycling rates. It needs to be complemented by clear action to reduce waste at source in other relevant policies and supporting strategies (see 5.6.6. for further discussion), especially as the activity in the retail sector is strongly encouraged. Again, the amount of overall waste will be affected by the standard of design and construction used in new development.</p> <p>The preferred option for waste apportionment is likely to have a combination of positive and negative sustainability impacts. Consideration of socio-economic and environmental criteria gives a significantly more sustainable and equitable apportionment than if capacity criteria alone are considered. The proposed apportionment of London's waste will enable the target of 85 % self-sufficiency for London by 2020 to be achieved, The strong differentials between projected waste arisings from each Borough, and waste management requirements allocated to each Borough by 2020, underscore the need to place greater emphasis on waste minimisation in the plan if PPS10's key objective of community self-sufficiency is to be realised.</p>
<p>Built and Historic Environment To enhance and protect the existing built environment (including the architectural distinctiveness, townscape/ landscape and archaeological</p>	+	<p>London has: 4 world heritage sites, approximately 40,000 listed buildings and structures, 152 scheduled monuments, over 500 archaeological priority areas, 949 conservation areas, 147 registered parks and gardens, 600+ historical squares, 8 royal parks, 39 urban public parks, 16 historic cemeteries and 1 registered historic battlefield.</p>	<p>Changes have been made supporting built & historic environment leading to an overall positive impact, specifically the protection of built heritage, but these are primarily focused on environment not social or economic factors.</p> <p>Improvements include a reference to sustainable design and construction that has now been made under paragraph 5.17, chapter 5 which sets the guidelines for all subregional policies; deleting the reference to sustainable before policy 4B.1. Design principles for a compact city, has been deleted</p>

SD aim	Impact	Evidence base	Assessment
heritage), and ensure new buildings are appropriately designed and constructed in a sustainable way.			to avoid confusion with policy 4A.2 promoting world class architecture and design. Policy 4B.1, chapter 4B now address security issues, local context, history and character and so on and refers back to the main policy 4B.5i on safety, security, and fire protection and prevention.
Housing To ensure that all Londoners have access to good quality, well-located, affordable housing that promotes liveability.	+	<p>The London Housing Strategy 2005-2016 sets targets that by 2010 all social housing in London will be decent and that 70 % of vulnerable private sector households will live in decent housing by 2010 with 75 % by 2020¹¹. In 2004 50 % or 241,000 dwellings were non-decent (44 % nationally) down from 53 % in 2003. On affordability 50 % of new developments should be affordable¹². In 2004/05 of the 25,600 new homes built, 30 % of these were affordable.</p> <p>There is also a commitment to achieve reductions in the number of families with children in temporary accommodation by 2006¹³. Recent figures show that the number of homeless households in temporary accommodation was over 67,000 in 2005, with 221 people sleeping outside on any one night - down from 500 in 1998. The 10 worst Local Authority areas for overcrowding are all in London, with the risk greatest for some minority ethnic groups.</p>	The alterations will lead to a marginal positive improvement in housing overall. Changes will improve the housing stock through number, type and affordability – where the policies are particularly strong, see 5.1.2 for further detail. In terms of magnitude, the Plan applies mainly to new build and therefore a relatively small portion of total stock (approx 1%). An update on retrofitting (on standards and prioritising over demolition) will have some positive impact on encouraging high standards during retrofit, but this will only occur when needed and therefore will still have limited influence on raising the standard of the housing stock in London. Greater links have been made between chapter 3A and policies promoting sustainable design and construction. The focus of the policies addresses mainly environmental factors and should be expanded to look at social elements.
Accessibility / Availability	++	London is the only major world city experiencing a modal shift away from car travel (although it still suffers from	The alterations are overwhelmingly positive in integrating accessibility considerations into planning at the outset,

¹¹ *Sustainability Appraisal of the London Plan (First Review)*, Scoping Report, 2005

¹² *Securing the Future: The Opportunities and Gaps in London*, London Sustainability Exchange, 2006

¹³ *Sustainability Appraisal of the London Plan (First Review)*, Scoping Report, 2005

SD aim	Impact	Evidence base	Assessment
<p>(Transport) To maximise the accessibility to key services and amenities and increase the proportion of journeys made by public transport, by bicycle and by foot (relative to those taken by car).</p>		<p>severe congestion) to other more sustainable modes of travel including public transport, walking and cycling.</p> <p>Ambitious targets are set for a significant challenge. Headlines include increasing capacity of public transport in London by up to 40 % over the next 10 years; working to reduce weekday traffic by 15 % in central London; achieving zero growth in rest of inner London (declining by one %); reducing growth in outer London (rising by half a %) by one-third and zero growth in outer London town centres. At present, 702,000 people commute into London from surrounding regions & 275,000 out-commute with demand for travel in both directions increasing, generating huge environmental stress. A projected increase in cycling plus the number of cars (2.16) and peak time demand for public transport is forecast.</p>	<p>encouraging walking/cycling and improving surface access by public transport as much as possible, whilst trying to restrain demand to travel via the private car, supporting car free development where possible and mitigating the environmental impacts of travel e.g. through promoting hydrogen. Multiple cross references between policy areas with accessibility leads to a much higher scale of impact and much greater probability of happening. The sub-regional policies in chapter 6 centre on delivery of transport services and impact on the ground. Reducing the need to travel is more strongly supported throughout the chapters as well as in 3C. This is directly supported by policies on integrating key services as part of any development and is a key mechanism to reducing the need to travel. Parking standards, plans to increase freight and transport movement, utilisation of ICT (including cooperation between developers and technology providers) are all improved through the alterations.</p> <p>On the negative side, food distribution is not addressed fully and adequate funding for implementation is the key area of uncertainty. Despite attempts to address the negative impact of aviation, it is still projected to grow. There is insufficient data available to indicate how much alternatives can displace the growing traffic in aviation which will still have a significant adverse impact on climate change (most of the data is collected on movement within London). It is unlikely within current predicted trends that they will account for a significant proportion and therefore monitoring is essential. See section 5.3 for further detail.</p>
<p>Regeneration & Land Use</p>	<p>+</p>	<p>Nationally the target set is that, by 2008, 60 % of additional housing should be provided on previously</p>	<p>The alterations will lead to a positive effect in regeneration and land use. Regeneration will happen mainly in deprived</p>

SD aim	Impact	Evidence base	Assessment
To stimulate regeneration and urban renaissance that maximises benefit for the most deprived areas and communities, to improve efficiency in land use through the sustainable reuse of previously developed land & existing buildings.		developed land and through conversions of existing buildings ¹⁴ and in London the reuse of previously developed land for new housing is highest of all the regions.	areas, via the Olympics and on brownfield sites and the main focus is on ensuring a lasting and sustainable legacy, see 5.6.2 for discussion. Key areas are earmarked for regeneration and so should directly result in revitalising deprived communities. The alterations in chapter 2, specifically in policy 2A.1ii (and expanded further in chapter 5, which does refer back to chapter 2A for general regeneration structure) outline a new subregional structure. This structure is radial in nature and links central, inner and outer parts of London. This radial structure should serve to link areas of need with areas of opportunity and is a positive move towards addressing regeneration priorities. In chapter 3D, alterations in the supporting text have placed more emphasis on town centres for development, as opposed to out of centre developments. Paragraph 3.263 now also looks at how soil quality could be improved.

¹⁴ *Sustainability Appraisal of the London Plan (First Review)*, Scoping Report, 2005

5.1 Housing and sustainable design and construction

The focus of the London Plan is on development and therefore the emphasis within housing is on new build. The Statement of Intent (Sol) highlights housing as one of the ten policy areas that the alterations will focus on. Additional policy areas under review such as climate change and liveability in particular have implications for housing. Within housing policy the emphasis within the Sol is on affordability, the provision of family housing, space standards and the provision of related social and other infrastructure.

5.1.1 Neighbourhood quality

The environment which greets people when they open their front door has a profound impact on their health and well-being. Children who have access to, or sight of, the natural environment have higher levels of attention than those who do not. Access to green space can contribute to health and well-being, social inclusion, community development and culture. Ease of walking, neighbourhood safety (low crime rates), opportunities for activity, access to a green and pleasant environment and the aesthetic qualities of the neighbourhood are associated with increased levels of physical activity. Awareness of facilities and satisfaction with facilities also lead to greater physical activity.

Neighbourhood quality affects people's ability to adopt health promoting behaviours. Healthy lifestyles and the ability to make healthy choices are influenced by the quality of the built environment and are linked to levels of obesity, coronary heart disease, cancer and diabetes. Poorly designed and high crime neighbourhoods can expose residents to the detrimental effects of pollution and toxins, increased risk of accidents and criminal victimisation.

The linkages made in new policy 3A.4i between design and construction policies, residential development and play and the SPG on design and construction should all help to increase health levels indirectly. Policy 4B.1 promotes high quality and inclusive design to create healthier communities: Home Zones, which are cited from the Mayor's Transport Strategy (3.199) provide a golden opportunity to make developments more accessible for all ages and increase social cohesion.

5.1.2 Housing choice

Policy 3A.4 remains largely unchanged from the initial London Plan and so there is no specific enhancement. Population increase and the emergence of smaller average household size means that London needs lots more housing, including high quality affordable housing. Housing supply also needs to cope with flexible demand e.g. some families may need temporary housing, there is a need for housing for socially excluded and vulnerable groups (people coming out of rehabilitation, with mental health problems, ex-offenders etc). The SPG deals with flexible housing needs.

The policies on housing provision targets were amended through the early alteration process and do not form part of these alterations. Affordable housing policies in chapter 3A *Living in London* remain unchanged except for the introduction of a new policy on affordable housing thresholds. This represents a clarification of the previous plan which avoided setting a London-wide threshold of the numbers of dwellings below which affordable housing requirement would not apply. A further change is that the threshold for eligibility for intermediate housing is raised so that it is now available to households with an income of £49,000, as opposed to the previous threshold of £40,000.

New policy 3A.4i requires residential development to have regard to policy on play space and informal recreation. This is an important development given the role physical activity plays in combating obesity among children.

5.1.3 Sustainable design and construction

The significant increase of new build planned within greater London will account for some of the most significant impacts on physical resources – including water and energy and will generate waste. The effect of this will be highly dependent on the methods and materials used in the construction processes.

Carbon emissions from the existing housing and building stock will continue to represent the majority (70 per cent) of total CO₂ emissions -- of which 44 per cent is residential and 35 per cent commercial. London's carbon emissions and the quality of new build will determine the ongoing contribution to emissions. It is anticipated that links to other initiatives such as the DCLG code for sustainable buildings will be made in any updating of the SPG on sustainable design and construction. However it is clear that these initiatives alone will not deliver the Mayoral aspiration of 20 per cent carbon reduction.

Chapter 4A contains supporting detail on material use in construction and clearly specifies types of material used over the life of building and could be cross-referenced in other relevant policies.

The alterations to policy 4A.2i on sustainable design and construction represent an improvement on the existing London Plan with the inclusion of measures to address climate change, address water and energy use, noise impacts, and sustainable procurement amongst other additions. In addition, policy 4A.5vii is updated to specify that “developers should aim to achieve greenfield run off from their site through incorporating rainwater harvesting and sustainable drainage”. This has resulted in much stronger policies.

The addition to policy 4A.6 on promoting sustainable construction in order to reduce emissions from the demolition and construction of buildings is welcomed, as are new policies on sustainable design which will help reduce the 21 per cent of air pollution that comes from energy use in buildings. Further action and guidance is available through the Mayor's Air Quality Strategy.

5.1.4 Quality of existing housing stock

Although there is less of a requirement on spatial plans to focus on existing housing stock and it is not an issue being directly dealt with by the alterations, it is very difficult to discuss new housing in isolation from the housing stock as a whole, not least because making “London an exemplary world city in tackling and adapting to climate change”, as set out in the Statement of Intent, also requires addressing existing housing stock.

A recent Sustainable Development Commission (SDC) report¹⁵ commented “in the rush to build new homes, the Government is in danger of neglecting existing housing stock. Making these homes resource-efficient is vital, since at least 75 per cent of the UK's homes today will still be here in 2050”.

¹⁵ Sustainable Development Commission (2006) Home Truths

While many of the SDC's recommendations are focused at central government there are issues which are relevant to the London Plan. Although it has limited influence the Plan has attempted to address the issue of retrofitting.

Renovating and improving the existing housing stock, particularly in deprived areas, contributes to improving community image. This can attract new residents to an area and it can also lead to health improvements amongst the original population. Even minor cosmetic changes such as cleaning streets and removing graffiti can have a range of benefits including: enhancing neighbourhood safety; reducing fear of crime; enabling and promoting physical activity and enhancing community levels of social capital.

The following potential mitigation measures are proposed:

- *A reference to relevant sustainable design and construction policies is now included at the beginning of chapter 5 on subregional policies. To help meet the highest standards of sustainable construction and design as set out in the SPG, relevant targets and individual guidance to each of the subregions should stress the requirements.*
- *Address any tensions between affordable housing targets and these standards within the SPG. The Plan also needs to ensure provision is made for adequate recycling facilities within buildings.*
- *The current measures are focused mainly on the environment and need to adequately represent the wider elements of sustainable development. Additional action should be taken to involve the community and address some of the wider social factors that make a place desirable to live.*
- *Delivering against minimum standards of sustainable design for buildings that relate to key objectives such as CO₂ emissions, water and so forth will be paramount in minimising adverse impacts on natural resources.*
- *Maximise the standard of construction in existing stock perhaps through the development of a standard on retrofitting as recommended by the UK Sustainable Development Commissions (SDC). This would be a key way of meeting many of the Plan's objectives.*

5.2 Water

This is a particularly important issue given that the early alterations to the Plan have increased the housing provision targets in chapter 3A. However, apart from chapter 4A the Plan has limited influence in this regard. London and the South-East face huge challenges around the future supply of water (most of London's drinking water comes from outside London), which will be exacerbated by both the level of growth, changing household size and the impacts of climate change. This should be carefully monitored during the implementation of the plan.

The Examination in Public (EiP) into the early alterations to the London Plan concluded that there is currently a supply/demand shortfall of 236ML per day. It was stated that Thames Water have a strategy to deal with this issue in the form of the Water Resources Plan 2004, however the new housing targets adopted as part of the early alterations represents a big challenge to this. The Mayor's view was that action taken to remedy the problem of leakages in Thames Waters infrastructure would help meet the shortfall. The EiP panel, in line with the previous EiP Panel, concluded that the need to tackle the matters of a supply shortfall is fundamental to planning for sustainable development.

The many issues such as water efficiency and metering which the Further Alterations propose are a significant factor in promoting the sustainable development of London, and should go a long way to ensuring that the London Plan helps to positively manage the effect of growth on water supply. The Mayor supports a 'twin-tracked' approach to help overcome the existing supply shortfall, however he has made clear his wider sustainability concerns with regards to desalination proposals.

In reference to the housing targets proposed in the Early Alterations the EiP panel also concluded that; "Even without more housing, demand for water will increase with population and employment growth. We are satisfied that there are solutions at hand and would expect all stakeholders to work together to identify and deliver them". It is clear that the Mayor has taken this sentiment on board and has strengthened the policies in the London Plan accordingly.

5.2.1 Water quality

The GLA aims to achieve 'good ecological status' under the Water Framework Directive for all groundwater and rivers. Despite proposed voluntary improvements to sustainable drainage, the overall increase in development is likely to lead to an increase in impermeable surfaces and therefore run-off.

A growing form of non-point source pollution is oil, grease, and toxic chemicals from roadways, car parks and other surfaces, and sediment from improperly managed construction sites, other areas from which foliage has been cleared, and eroding stream banks.¹⁶ Flooding will cause increased pollution from inadequate drainage, and under storm conditions the Thames fails to meet the general 'quality of life standard', with risks to human health as well as water quality and fish. This is acknowledged in 4.27 and the Thames Tideway investment project has examined this issue. The Mayor supports the option that provides a complete solution to this problem and this is reflected within the London Plan.

The following potential mitigation measures are proposed:

- *Water supply and wastewater infrastructure to be put in place ahead of planned growth.*
- *To support implementation of policies in 4A, they need to be taken into account in other key policy areas, particularly chapter 3A Living in London and Chapter 5 on subregional policies.*

5.3 Accessibility

In this section we look at a range of issues associated with accessibility in and around London. These include transport infrastructure and social networks; use of the private car; demand management; Information and Communication Technology; food distribution; and aviation.

5.3.1 Transport infrastructure and social networks

Transport's primary function is to enable access to people, goods and services.¹⁷ In so doing transport promotes health indirectly through the achievement and maintenance of social networks and by enabling people to access employment opportunities. Lack of access to transport is experienced disproportionately by

¹⁶ Frumkin H. Urban sprawl and public health. Public Health Reports 2001;117

¹⁷ Acheson, D. et al. Independent inquiry into inequalities in health: report. 1-164. 1998. London, The Stationery Office

women, children and disabled people, people from minority ethnic groups, older people and people of low socio-economic status. These groups find their access is reduced to services such as shops and health care and they spend a higher proportion of their resources on transport. Disadvantaged urban areas tend to be characterised by high traffic volume, leading to increased levels of air and noise pollution and higher rates of road traffic accidents without the benefits of access to private transport.

The alterations deal with this specifically - objective 4 describes improvements to social infrastructure and related services and policy 3A.15 talks about pressure from an increasing population. The accessibility of facilities, opportunities for activity, and aesthetic qualities of the area are important factors in whether people take part in physical activity.¹⁸ The proximity of a park, a path, or shops can lead to higher levels of exercise or recreation. Also, awareness of facilities, satisfaction with facilities, and the perception that the area offers opportunities to be physically active encourage greater physical activity.¹⁹ For older people access to local facilities, pleasant scenery and seeing other people exercise is important to whether or not they participate in physical activity.²⁰

Affordable and reliable public transport connects deprived neighbourhoods to employment and other services. However commuting has been shown to reduce levels of social capital and bonds particularly those relating to interfamilial relationships. It has also been linked to poor educational outcomes amongst children. Ensuring that the suburbs benefit from increased economic activity would help reduce commuting across London and has now been included in policy 2A.6 The suburbs, chapter 2 and 2.20ii.

There is a genuine commitment to improve accessibility and public transport, reduce congestion, and promote alternative fuels within the Plan. It is perhaps unfortunate that the opening statement for *Connecting London* is *making London an easier city to move around* (3.157) as this could be read as placing an emphasis on *mobility* rather than *accessibility*. Fortunately, most of the changes do emphasise accessibility and the Plan does require provision of key services throughout communities, thus reducing the need to travel. National government policy may counteract this trend e.g. as with increasing choice on which school to attend.

Not only does chapter 3C *Connecting London* contain an excellent suite of policies, but these are reflected in all other policy areas and supported by an investment programme by Transport for London (6.35i). The Transport Strategy will be revised in line with the London Plan and an SPG provides further guidance. The GLA takes a proactive approach to development, one that considers transport requirements *at the same time* as housing, jobs and supporting infrastructure; ensuring appropriate capacity is available to support balanced growth. For example, policy 3C.2 requires new development to be matched to transport capacity and points developers and development control authorities to TfL's guidance on transport assessment and travel plans.

¹⁸ K. M. Leyden. Social capital and the built environment: the importance of walkable neighbourhoods. *American Journal of Public Health* 93 (9):1546-1551, 2003

¹⁹ B. E. Saelens, et al. Neighborhood-based differences in physical activity: an environment scale evaluation. *American Journal of Public Health* 93 (9):1552-1558, 2003

²⁰ Humpel, N., et al. (2002) Environmental factors associated with adults' participation in physical activity. A review. *American Journal of Preventive Medicine*, 22, 188–199

Most of the changes in chapter 6 centre on delivery of transport services. They indicate that the increased available capacity of the public transport system e.g. the underground has embarked on a programme to provide an increase of approximately 25 per cent capacity and greater reliability, completion of Crossrail, additional rail capacity (identified at 40 per cent by TfL) and bus services should all lead to an overall increase of 26 per cent after 2011 (6.38i).

5.3.2 Use of the private car

Car ownership rates in London have shown little change over the last five years: approximately 0.35 cars are owned per head of population.²¹ This SA has found no figures for projected levels of car ownership. Outside metropolitan London levels are expected to rise. Car ownership (or lack of) is one of the indices of deprivation and levels of ownership across London reflect patterns of deprivation.²² Levels of ownership may rise if the population becomes more affluent.

Despite low levels of car ownership, London has a relatively high level of car travel with nearly three times as many trips made by car than public transport.²³ The same report notes that London does perform well on walking. A new addition now supports car free developments where appropriate (3.163 chapter 3C).

People who own cars will continue to need space to accommodate them. High densities of parked cars affect health and well-being: a high density of curbside parking is associated with increased risk of injury for children.²⁴ Parked cars obstruct vision, increase social severance and make it less attractive to be a pedestrian. Published, and emerging, best practice guidance on parking²⁵ states that the provision of infrastructure for parking should be an integral part of urban design and must not be seen as a numerical formula which can be added on at the end of the design process. The parking standards in Annex 4 of the London Plan are improved by the alterations. Parking is also addressed in the SPG on Sustainable Design and Construction.

5.3.3 Demand management

This is absolutely critical and reflected in 2.23, 2.27 (chapter 2) and policy 3C.3 (chapter 3C). Cyclists, walkers and public transport are all far more efficient users of the road space and emit less greenhouse gases and should be encouraged. The risk of injury, especially for child pedestrians, increases with traffic volume and at sites with highest traffic volumes it has been shown to be 14 times greater than at less busy sites (odds ratio 14.30, 95 per cent confidence intervals 6.98 to 29.20).²⁶ Plans to increase freight and transport movement by water in chapter 4C may partially relieve pressure from surface access.

²¹ See Transport - facts and figures <http://www.london.gov.uk/mayor/transport/facts-and-figures.jsp#cars>

²² Transport for London. London Travel Report. 2005. Available at www.tfl.gov.uk

²³ Commission for Integrated Transport. European Best Practice Focus on World Cities. Fact sheets - no.6. 2005. Available at www.cfit.gov.uk

²⁴ Roberts I, et al. Trends in intentional injury deaths in children and teenagers (1980-1995). Journal of Public Health Medicine 1998;20(4):463-6

²⁵ See English Partnerships "Car Parking: what works where" (2006) and Manual for Streets www.manualforstreets.org.uk

²⁶ Trends in intentional injury deaths in children and teenagers (1980-1995). Journal of Public Health Medicine 1998;20(4):463-6. Roberts I, Li L, Barker M.

5.3.4 Information Communication Technology

ICT cannot always substitute face-to-face interaction but will continue to grow and remain a key driver over the next two decades. Technologies are constantly changing and are likely to have a significant impact on how we move, what we need to move for and the way in which businesses and services operate.

Technological and medical advances enable more options for care to be provided in more places and are altering the land use requirements of the NHS. Improved information technology such as remote diagnosis, electronic patient records and Choose and Book²⁷ are key components of the new models of delivery for health care.²⁸

Nationally, Internet sales in the retail sector now account for four per cent of total retail sales. Spending online increased by 123 per cent between 2003 and 2004 and now covers commodities from books to groceries. This does displace some traditional catalogue shopping but is likely to overtake it and require new distribution centres.²⁹ It can also impact significantly on social inclusion, providing an opportunity for disadvantaged households to access a wider range of services and employment opportunities. Therefore, it is important to ensure that disadvantaged households are able to access these opportunities through adequate provision of broadband, which is covered under policy 3B.7. Within the Plan, the impact of technology is considered in chapter 1 and policies 3B.7 and 3B.8 deal with improving London's ICT infrastructure and promotion of e-London respectively. These policies have been altered only slightly in the review.

5.3.5 Food distribution

Chapter 3B and 3D could refer to developing local food distribution networks, the London food strategy, and the wider waste strategy. Urban food growing contributes approximately £3m to London's economy and provides around 3,000 jobs. However London's goods vehicles still account for the majority of the worst polluting vehicles and contribute 2.5 per cent of the UK's CO₂ emissions.³⁰ This figure is set to increase.

5.3.6 Aviation

A report produced by the London Sustainable Development Commission (LSDC) in April 2004 found that flying is still undertaken predominately by the wealthy and despite growth in the low-cost sector this has not changed over time. Only a third of passenger air traffic is important to economic activity but Heathrow accounts for a significant proportion - 62 per cent of all business trips. It concludes that "the benefits and disbenefits of flying are very unevenly distributed, if the costs of flying reflected external environmental costs and subsidies were removed, the growth in demand would be reduced."³¹

Air travel is the fastest growing major source of CO₂ emissions both nationally and within London and is predicted to account for up to a quarter of the UK's total CO₂ emissions by 2030.³² The local effects of aviation on air quality are tightly monitored

²⁷ See www.chooseandbook.nhs.uk

²⁸ Department of Health. Keeping the NHS local: a new direction of travel. 2003. London, Department of Health

²⁹ *Planning for sustainable retail*; Town Country Planning Association

³⁰ The Mayor's draft Food Strategy 2005

³¹ *The impacts of air transport in London*: London Sustainable Development Commission: April 2004

³² *UK welcomes European support for tackling aviation emissions* Defra press release: December 2005

and airports such as Heathrow, Stansted and Gatwick will be concerned to keep emissions within strict limits. This, however, does not imply that there is no health effect: it is generally assumed that there is no level below which health effects do not occur. Over a much wider area potentially large populations are exposed to very small increments of key pollutants from aviation such as particulate matter and ozone.

Improvements in the draft Further Alterations include policy 3C.6 which has been extended to include airport operation since it is the aeroplanes, and not the airports themselves, that are the major contributors to greenhouse emissions. The London Plan while acknowledging the impact aviation has on climate change, opposing unconstrained demand and supporting positive action to mitigate the effects e.g. through patterns of aircraft operation, does not make national policy. The concern remains however, that the adverse impacts of growth which is being supported at Stansted and Gatwick will outstrip any action to mitigate environmental effects. It is not clear why runway expansion at Heathrow is opposed on the grounds that “on current evidence, adequate mitigation is not possible” (3C.6) yet ‘the proposed expansion at Stansted (and potentially later at Gatwick) is therefore supported providing that the environmental effects are satisfactorily mitigated and that sufficient additional transport capacity, particularly by public transport is provided” (3.175). Policy still appears to be predicated on predict and provide without supporting evidence on the real need (chapter 1 aims to increase air traffic 1.4).

As it stands, there is no easy technical solution. Improvements in aircraft efficiency have been marginal and are only forecast to rise by a further 6 to 12 per cent in the next 20 years through a combination of greater load capacity, lighter aircraft and better engine efficiency and drag reduction.³³ Even with the targets set by the Advisory Council for Aeronautical Research in Europe (ACARE) in 2002 (they include reducing fuel consumption and CO₂ emissions by 50 per cent; reducing perceived external noise by 50 per cent; reducing NO_x by 80 per cent and making substantial progress in reducing the environmental impact of the manufacture, maintenance and disposal of aircraft and related products): improvement in fuel efficiency is likely at around one per cent per year for some time, and this will only go a part of the way to compensate for overall growth in flying.

Currently there is no viable alternative to kerosene as an aviation fuel and as aircraft currently in use tend to have long life spans, even if significant improvements in fuel efficiency are made, it will be years before we benefit from any changes as the pace of growth is quickly outstripping technological advance. In addition, existing plans to increase air freight and heliports (3C.7) will almost certainly result in increased emissions.

5.4 Climate change

The actions on climate change were strongly supported by consultees in the health stakeholder workshop. The changes envisaged under climate change scenarios were described as being of a different magnitude to the other changes. The climate change policies were considered highly worthy of support.

The clear prioritisation awarded to climate change in the update to objective six and the further alterations is commendable. Policies clearly advocate reducing the need to travel, public transport, alternative technologies, walking and cycling, reduction in

³³ *Transport 2050: The route to sustainable wealth creation* The Royal Academy of Engineering March 2005

congestion, the use of the private car and sustainable design and construction – all direct sources of CO₂. It builds in flexibility to adapt to the effects of climate change such as 'designing buildings for the climate it will experience over its intended lifetime' (4A.15). Chapter 4A is far-sighted in promoting behavioural change and acknowledging the future cost of failure to respond and setting incremental targets in CO₂ reduction up to 2025 based on 1990 levels in line with national target to reduce emission by 60 per cent by 2050. The Mayor has asked all functional bodies to undertake an assessment of their potential contribution to CO₂ emission reduction targets. A Climate Change Action Plan is being prepared and this will be particularly important to adequately address resilience in infrastructure.

5.4.1 Flood risk

Policies in the current Plan and Further Alterations are based on PPG 25. They highlight the need for 'all new development and infrastructure to contribute to a reduction in flood risk and be appropriately flood resilient' (4A.5vi). Whilst it does specify how this might be achieved, policies to reduce flood risk suffer from ambiguities in language for example "development in North-East London must take account of flood risk" (5.61) or "special attention must be paid" (5.39) and reference is made to the Environment Agency regarding the level of flood risk and making assessments. This is pending a regional flood risk assessment due to be completed by the GLA in Spring 2007. DCLG is currently strengthening guidance, which will be contained in the new PS25. This is likely to clarify the sequential test that matches types of development to degrees of flood risk, strengthen guidance on the need to include Flood Risk Assessments at all levels of the planning process, make the Environment Agency a statutory consultee for planning applications in flood risk areas and include a 'Flooding Direction', providing greater scrutiny for major developments. Over time the Plan should be updated accordingly.

Despite the robust flood defences currently in place in London (these are to the highest standards in the UK giving protection against 1 in 1000 year floods until 2030), flooded areas would suffer extreme consequences. Many communities in deprived areas of London are at worse risk of flooding (see Appendix J), and are much less likely to have insurance against flooding. The health effects that can result from the type of floods typically experienced in Britain, i.e. small-scale, short-lived and shallow, are often very marked. The health effects range from premature death, or clinical problems requiring hospitalisation or consultation with doctors, to an increase in the use of non-prescription drugs or alcohol, depression, insomnia, low self esteem and general feelings of ill health. The effects of flooding on individuals, households, and communities continue long after the flood waters have receded. Many of these effects are known as *intangibles*, i.e. those which are not possible to evaluate in monetary terms, such as loss of memorabilia, the perceived loss of security in the home, and the physical and psychological effects on people's health and well-being.³⁴

The issue of flood risk has been raised in connection with development in the Thames Gateway and it will continue to arise through the lifetime of the Plan. Complementary policies such as the green grid and protecting open space will be very important in managing any future flood risk and protecting London's residents.

³⁴ Flood Hazard Research Centre. The health effects of floods: the Easter 1998 floods in England. No 3/99. 1999. Flood Hazard Research Centre Article Series. Available at www.fhrc.mdx.ac.uk/floods.pdf

5.4.2 Energy

There are clear references on how London will actively promote and support the uptake of alternative technologies. The targets to achieve a reduction in carbon dioxide emissions of 10 per cent from onsite renewable energy generation rising to 20 per cent in the further alterations should act as a real driver. It is appropriate to ask boroughs to identify sites and require an assessment of baseline energy demands, carbon dioxide emissions and proposals for reductions (4A.8).

5.4.3 Combined Heat and Power (CHP)

Research completed on behalf of the London Energy Partnership/London Renewables directly supports new policies supporting CHP schemes. It produced four scenarios to illustrate the mix of sustainable energy measures that could meet a increased carbon target. Based on this modelling, scenario one, the CHP led strategy is the most economically viable. A more representative solution, hybrid scenario five was used as the basis for this report. It includes a greater proportion of other technologies, renewables and thermal insulation (e.g. micro generation), whilst still retaining a strong CHP component. Based on the modelling analysis biomass and CHP technologies demonstrate a payback period of between eight and nine years. 'Of the micro generation technologies, gas CHP in buildings is anticipated to be the main contributor to carbon reduction, as it can be installed in large buildings...at a relatively low capital cost.' This is reflected in chapter 4A with existing policies and new policies (4A.2ii) (4A.8) (4A.5i) supporting CHP schemes. Carbon neutral schemes are more appropriate for large developments, but CHP and renewables can be appropriate for all sites.

5.4.4 Micro-renewables

The report *Greening London's Economy* predicted that by 2020 PV installations alone could produce a third of London's renewable electricity and meet 10 per cent of total demand. Small, localised renewable projects present a visual demonstration of green energy and offer a good opportunity to involve and directly benefit local residents e.g. through community schemes. Changes under 4.18i do build in flexibility to accommodate solar panels at a later date 'the Mayor will encourage the use of a full range of renewable energy technologies, which should be incorporated wherever site conditions make them feasible.' This could be interpreted to support micro generation but it could go further along with other alterations to explicitly support micro generation – a good opportunity for the urban environment of London to maximise localised, diverse renewable energy generation.

The following mitigation measures are proposed:

- *Ensure that the policies on Heathrow, Stansted and Gatwick are applied consistently with regard to opposing unconstrained demand and managing implementation within environmental limits.*
- *Implementation needs to prioritise transport modes which reduce demand, encourage walking and cycling, public transport and only then use of the private car.*
- *In chapter 5, policies are designed to 'improve air quality' but it is not clear how to compensate for increasing activity at Heathrow especially considering that 'it is likely that NO_x levels at Heathrow will exceed EU limits by 2015.'³⁵ Appropriate measures will need to be put in place.*
- *Improvements need to target disadvantaged communities, who often live alongside roads with the heaviest traffic, and also have less access to cars.³⁶*
- *In delivering the plan, delivery agents should draw on London's Food Strategy and action to develop local food distribution and wholesaling hubs e.g. under 3B.5.*
- *Ensure that transport facilities will be affordable and equitable. Affordability is not considered explicitly anywhere in the Plan – a real issue when public transport fares are double those of Paris and Tokyo and prices have risen by 60 per cent over the last 25 years and should be picked up in the Transport Strategy looking at zone principles where appropriate. Emphasis should also be on reliability of services which is key to encouraging a modal shift away from cars to public transport.*

5.5 Waste

The majority of changes to waste policies formed part of the early alterations on which, the sustainability appraisal conducted at the time, surmised that the changes would have a mixed effect on waste; with the increase in housing leading to a direct increase in the amount of waste generated; the location of new waste facilities were at risk from flooding and might have a detrimental impact on neighbourhoods and marginalised groups; while improving the way waste is managed through the waste hierarchy (reduce, reuse, recycle) and becoming self-sufficient in its disposal. These comments echo the original appraisal where still applicable and some are additional suggestions which can be picked up during a full review and in the forthcoming municipal and wider waste strategies and other relevant documentation.

5.5.1 Waste facilities

Waste management is considered predominantly in terms of recycling and disposal means in the Plan. Clear provision for waste facilities pervades the chapters and should help to clearly meet the existing aim of dealing with 75 per cent of London's waste (40 per cent currently goes into landfill sites located outside London) within the municipal boundaries by 2010 rising to 85 per cent by 2020. This will have significant implications for land use in London as it is estimated that existing waste transfer sites have the capability of accommodating 10.7mt capacity by 2020 with a target of 19.6mt. Additional requirement is forecast to stand at 244 hectares at 16.2 ha p.a between 2005 - 2020.

1998. D. Acheson *et al.*

³⁵ *The impacts of air transport on London: London Sustainable Development*

³⁶ *Independent inquiry into inequalities in health: report.* London: The Stationery Office. 1-164

The new policy 4A.1 'where waste cannot be recycled, the Mayor will encourage the production of energy from waste using new and emerging technologies, especially where it enables the generation of renewable hydrogen' (4A.1) will help maximise opportunity to further exploit energy from waste as a resource in small-scale operations, which is defined by the London Energy Partnership.

The potential climate change impacts on existing and planned waste facilities (drying, cracking, flooding, leaching) also need to be taken into account.

5.5.2 Apportionment

It is commendable that the apportionment of London's waste will enable the target of 85 per cent self-sufficiency for London by 2020 to be achieved. Nevertheless there remain clear land constraints to borough self-sufficiency, particularly in central London. The first iterations of the waste apportionment show strong differentials between projected waste arisings from each borough, and waste management requirements allocated to each borough by 2020. This underscores the need to place greater emphasis on waste minimisation in the Plan if PPS10's key objective of community self-sufficiency is to be realised. Given the land availability constraints on strategic sites, particularly in central London, the Plan should also incorporate flexibility for small, local sites in line with the proximity principle and new, emerging technologies.

The initial figures for the apportionment of London's waste were based on a model that used the following criteria and weightings: capacity (high), proximity to waste arisings (high), proximity to sustainable transport nodes (medium), proximity to the road network (medium) historic patterns of waste movement (high), environmental designations (medium), flood risk (low) and socio-economic factors (high). One of the most significant factors influencing the sustainability impact of the apportionment is the reliability of the data that was used to forecast waste arisings and land availability and, the assumptions that underpin these data.

The model used time series data for industrial land vacant and potentially available from the GLA survey of industrial land available: 1987-2003. This is not sufficiently up to date to provide a reliable basis for the apportionment, particularly in light of large-scale schemes which have come forward since that date, for example, the Olympic development in the Lower Lea Valley. However, a number of boroughs are in the process of completing industrial land studies. These are being taken into account in an assessment of the revised pan-London industrial land benchmarks. A mapping exercise for industrial land in the North-East and South-East subregions is underway and due to be completed by October 2006. This study will help to bring together the current intelligence on total and vacant industrial land in London (2006) on a more consistent basis.

The model should be reiterated using current Planning Authority data provided by the boroughs so that it is consistent with the final inputs/outputs of the pan-London industrial land benchmarks study.

A further iteration of the model using new data will give a satisfactory indicative apportionment, however, this analysis should be complemented with an evaluation that is spatially specific and which takes account of different types of waste and management facilities in order to ensure that the most sustainable apportionment is achieved. Following our earlier comments that the sustainability of the plan would be improved by not closing opportunities to consider small-scale waste management

sites, we do not agree with the consultant's conclusion that in further iterations of the data, sites smaller than 0.75ha should be removed.

The preferred option for waste apportionment is likely to have a combination of positive and negative sustainability impacts. In principle it is to be welcomed that the apportionment figures are based on a range of socio-economic and environmental criteria. This creates a significantly more sustainable and equitable apportionment than if capacity criteria alone are considered (London Waste Apportionment Study Appendix 5). The overall goal to manage 85 per cent of London's waste within London by 2020 and the inclusion of criteria for proximity to sustainable transport modes will impact positively on the sustainability objectives of improving air quality and reducing carbon emissions. The apportionment is likely to be positive for biodiversity in areas with particular designations (i.e. greenbelt and specific nature conservation designations). However, it may also impact negatively on areas where large-scale restoration of waterways and green spaces for conservation and leisure are central to the regeneration strategy.

Modelling of social deprivation indicators and existing waste infrastructure is likely to impact positively on the Plan's sustainability objectives to ensure equitable outcomes for all communities, create liveability and place and stimulate regeneration. Nevertheless, the initial balance of waste apportionment was heavily weighted towards the East and North-East (which have historically managed a large proportion of London's waste).

The development of modern waste facilities and "resource recovery parks" should contribute to the regeneration of the East subregion. There is a risk, however, that the proportion of waste allocated to this subregion may also impact negatively on regeneration if it requires land that could otherwise be released to non-industrial uses in order to create sustainable, mixed use communities.

The GLA has reconciled the need for waste and the need for housing and concluded that there is enough available industrial land to meet the need identified. Any calculations need to make provision for the possibility that a borough will become a net importer of waste and is reconciled against all development needs such as the Olympics.

The use of the subregion's waterways to transport waste could have a range of impacts. It might impact negatively on the restoration of waterways and the active leisure and sporting use or it might encourage further investment in the waterways.

The inclusion of flood risk (based on areas located on flood plains) is positive for the sustainability objective of avoiding new flood risks. The low weighting given to this criteria, however, is not commensurate with the high risk of flooding associated with these areas.

GLA update April 2007

As recommended in this Sustainability Appraisal, the waste apportionment was reiterated by the GLA's consultants (Jacobs Baktie) in November 2006 and a revised proposed borough-level waste apportionment was published for public consultation as minor alteration to the London Plan in December 2006.

The waste apportionment model was rerun using as an input 2006 industrial land data derived from detailed map-based assessments of the industrial land baseline for boroughs in London's North East and South East sub-regions, and desk based assessments for boroughs in the North, West and South West sub-regions taking into

account local employment land reviews where these were available and up to date. This ensured that land now allocated for the 2012 Olympics, for example, was excluded from the reiteration

The SA requested that a complementary evaluation be undertaken which was “spatially specific and which takes account of different types of waste and management facilities”. In the GLA’s view, this level of detail properly rests with the boroughs. The London Plan’s strategic function is to apportion tonnages of municipal solid and commercial/industrial waste to be managed in line with its self-sufficiency targets. It is then for the boroughs to undertake the evaluations requested in the SA – to identify in their DPDs land sufficient for this purpose and to bring forward facilities in line with Plan policy guidance on numbers, types and broad locations.

The SA also called for a higher weighting to be given to the model’s flood risk criterion, arguing that its low weighting was not commensurate with the high risk of flooding associated with these areas. After due consideration it was decided to maintain the weight given to this criterion in the reiteration – it was awarded at an initial seminar hosted by the apportionment consultants and attended by representatives of most of the boroughs, and subsequent consultation responses did not call for its variation. However, the GLA did accept the SA’s advice about the sustainability merits of not excluding smaller than 0.75 ha, and these were retained in the reiteration.

Currently (March/April 2007) the GLA is undertaking further refinement and sensitivity testing of the apportionment model. The model is being iterated further with updated information on protected wharves and rail nodes, and to take account of the planning permission for Belvedere Incinerator. Sensitivity testing will also be undertaken – this involves running selective criteria weighting variations in line with consultation comments received from the boroughs on the minor London Plan alteration. The GLA intends to discuss the outcome of this further work with the boroughs at a seminar to be arranged in April/May, and this will inform the EiP Panel’s discussion of this matter in June. Further SA work may be required as a result of the recommendations of the Panel following the EiP into the Further Alterations (commencing in June 2007).

5.5.3 Recycling

The targets set by the Mayor send a clear signal on what could and should be achieved in recycling and will be a challenge to achieve 35 per cent by 2010 from the current low recycling rates of 11 per cent achieved in 2003/04. Recycling targets cover all municipal wastes, commercial and industrial wastes (70%) and CDEW wastes (95% reuse and recycling).

Composting can also generate hazardous substances – for example, some of the micro-organisms which flourish in the composting process are able to release spores with allergenic properties which can stimulate or exacerbate respiratory diseases. Even recycling processes are not without risk. These may well involve the expenditure of energy and consequent release of combustion gases and/or produce contaminated wash waters. Approximately 30 per cent of municipal waste is potentially compostable, and this type of waste is the most suitable for community self-management on smaller sites close to the point of generation. The positive sustainability impact of the waste policy would be further enhanced by encouraging planning authorities to identify potential sites for community composting facilities in existing and new developments setting targets for the amount of compostable waste that is managed through community composting facilities and domestic composting

and by encouraging planning authorities to identify potential sites for community composting facilities in new and existing developments. This would provide a tangible way for boroughs to maximise their self-sufficiency (policy 4.10) even for those where there is no or little vacant or potentially available industrial land.

5.5.4 Living near to waste treatment facilities

Waste management is a very large-scale activity which inevitably has consequences for human health and the environment. At the very least it involves transporting waste materials. The various waste management processes such as landfill and incineration are very different in character and give rise to different kinds of human health hazards. Domestic waste is the main component of municipal solid waste and this can contain hazardous substances such as pesticides used within the home. If such substances are volatile then it is likely that they will be released from a landfill. Incineration may destroy such substances but combustion itself is well known to create toxic substances such as sulphur dioxide, oxides of nitrogen, dioxins and furans.

This means that residents and community groups often express considerable concern over the potential effects of living near to waste treatment facilities. The Plan is clear about the projected demand for waste treatment facilities. A link is made between Policy 2A.6 which states that stakeholders should take a proactive approach that engages the community and with Policy 3A.20 which requires health impact assessment of major developments to be considered.

5.5.5 Incineration

Incineration is only supported *after* all other avenues have been implemented first, and specifically small-scale incineration which should avoid the problem inherent with mass burn, in that it does not encourage an increase in waste produced (see 4.9, chapter 4A).

5.5.6 Reducing waste at source and waste as a resource

Waste disposal must be considered alongside the production and reuse of waste which is only considered in chapter 4A and the waste hierarchy (reduce, reuse, recycle) should be reflected in other chapters. This will directly contribute to the goal of self-sufficiency. This is also predicated on the Mayor having appropriate powers, which are yet to be confirmed. Chapter 2 has no aspiration on how waste will be dealt with in the retail sector. The UK Sustainable Development strategy calls for “a wider and more developed approach that focuses across the whole life of goods, services and materials and also includes economic and social impacts and in particular encompasses impacts outside the UK”. Retailers were identified as a key stakeholder in London’s waste strategy. The Mayor could identify how retailers can fulfil obligations with regard to sustainable retail e.g. by co-operating in clusters and should be covered in the forthcoming wider waste strategy. This would complement London’s desire to become a Fair Trade city.

In 4A the reference to secondary markets for waste materials is not adequately addressed. However, boroughs are required to support “appropriate developments for manufacturing related to recycled waste” within the Further Alterations and it is covered in the Mayor’s Municipal Waste Management Strategy and will be covered in Wider Waste Strategy.

The following potential mitigation measures are proposed:

- *Chapter 5 needs to be strengthened to refer specifically to waste disposal targets when the borough allocations are decided rather than a general statement 'boroughs should take account for land for waste management facilities in line with the principle of self-sufficiency' (5.54).*
- *Disposal of goods in accordance with the Waste from Electrical and Electronic Equipment (WEEE) directive close to sites needs to take place alongside policies that specifically deal with reducing transport of waste (4A.3).*
- *Provision for reprocessing facilities as well as disposal to maximise recovery and reuse needs to be allocated, taking into account recovery and disposal methods within the South-East more generally.*
- *Site selection for waste facilities need to highlight avoiding detrimental impact on local communities.*
- *Make it clearer that future proposals for mass burn (not in LP) incineration will not be supported as a method of waste disposal.*
- *Given the land availability constraints on strategic sites, particularly in central London, greater flexibility should be accommodation for smaller local sites.*
- *Chapter 3B talks about wholesale markets, but not production of goods. Encouraging close proximity between production and supply should be included to avoid transportation of goods.*
- *The link between growing expenditure on convenience goods and managing this in a sustainable manner needs to be made in order to deliver on other key targets such as reducing CO₂ emissions.*
- *GLA and boroughs will need to respond to changing conditions for recycling plastic over the next 15 years e.g. refer to the Mayoral and Remade work at the Visy plastics site in the Gateway.*
- *It is important that further iterations of the waste apportionment modelling take account of the planned release of industrial land to other land uses in areas where significant regeneration is planned. This is particularly relevant to the regeneration of the Lower Lea Valley.*
- *Given the relatively limited consultation that was used to derive the criteria weightings, we recommend that the apportionment figures are based on running the model with no weighting criteria applied. The low weighting given to flood risk in the current model is of particular concern*

5.6 Regeneration and land use

The Statement of Intent indicates limited intention to revise policies related to regeneration except those related to liveability and the 2012 Games - both dealt with later in the report. Otherwise the related focus in the Statement of Intent is on the conversion of surplus industrial land, increasing housing provision in town centres as a catalyst for regeneration and linking jobs in central London to areas of regeneration. To ensure that regeneration directly benefits local communities and leads to a diverse, stable economy it is important that policies on supporting green industries and local businesses and employment feature strongly in regeneration areas.

5.6.1 Casinos

New policy 3D.4i on Casinos outlines the way in which the London Plan will meet Government policy on regional casinos.³⁷ The SA team recognise that this policy is in line with central government policy.

³⁷ Gambling Act 2005 available at www.opsi.gov.uk/ACTS/acts2005/20050019.htm

There is a large amount of uncertainty surrounding the potential effects, either beneficial or adverse, of regional casinos. This is a highly controversial and problematic issue. Regional casinos are new to the UK.

Evidence on casinos from different national and international sources suggests that:

- they should not be located in (and preferably not close to) town centres;
- their accessibility and availability should be restricted;
- regional casinos do provide employment for large numbers of people but 50%-60% of this is estimated to be low-grade employment requiring no qualifications;³⁸
- casinos are associated with an elevated risk of pathological and particularly problem gambling amongst populations surrounding casinos;
- problem and pathological gambling are associated with other forms of addictive behaviour such as alcohol abuse and smoking; and
- problem gambling is positively associated with measures of deprivation.

Policy 3D.1 provides the criteria for Development Plan Documents (DPDs) to strengthen the wider role of town centres. The Greenwich Peninsula is not a town centre, however Wembley is cited as a town centre that has a strategically important cluster of night-time activities.

It is recommended that the GLA pays close attention to the national pilot study on Casinos and amends its policy accordingly. The monitoring of social and economic effects will be essential to help inform the best options for Casino development in London and ensure maximum benefit and minimum adverse effect.

A range of mitigation measures were proposed and the policy authors have modified the policy.

5.6.2 The Olympic and Paralympic Games

The Statement of Intent (Sol) outlines the 2012 Games as one of the 10 key policy areas for revision. Hence alterations to the Plan to consider the 2012 Games occur throughout the revised Plan. The emphasis within the Sol is on the legacy aspects of the 2012 Games and this is clearly reflected in the relevant altered policies, most notably policy 5D.2. The economic and social aspects of the policy in particular the desire to use the 2012 Games to promote participation in sport and develop active healthy lives should be commended. To further secure health and environmental benefits arising from the 2012 Games, they could be explicitly referred to under 3D.5 The Olympic and Paralympic Games or signposts put in place to the types of outcomes that are desirable.

The following potential mitigation measures are proposed:

- *Policy 3D.4i now requires an action plan to address issues associated with problem gambling. We recommend that the casino operators prepare the action plan and that the boroughs and the Gambling Commission are involved in both setting the scope of the action plan and in enforcing the action plan.*
- *The local education and training agencies and the casino operator work together to maximise the training benefits of a Regional Casino and enhance the development of skills to promote opportunity for socially inclusive employment. This will help to offset negative effects of temporary and unskilled employment.*

³⁸ Price Waterhouse Coopers, Newcastle City Council Proposed Regional Casino Development Final Draft Report, March 2006

- *Embed a variable operator contribution to address social risks in any licensing arrangements. Local borough councils should ensure that social impact risks, particularly the high risk and uncertain area of problem gambling, are ‘owned’ by the casino operator and that costs are not borne by NHS organisations or borough councils.*
- *To ensure continuance of existing trends of developing on brownfield land, it should be made clear what percentage of new housing supply should be achievable through redevelopment of brownfield sites as increasing supply of housing or demand may start to impinge on open space.*
- *To further secure health and environmental benefits arising from the 2012 Games, guidance should be given as to the types of outcomes that are desirable.*
- *Steps should be put in place with borough councils to ensure that the development of the Olympic and Paralympic infrastructure is not detrimental to health and wellbeing.*

Additional recommendations to support the London (LP)

The following recommendations are actions that would support implementation of the LP in leading to sustainable development, but are outside the scope of the LP.

- Setting standards is crucial and these should be specified for consumption and quality through an up-to-date Supplementary Planning Guidance (SPG) to support the policies in 4A and the emerging Water Action Framework (after 4A5vi). Again, we would strongly advocate the enforcement of standards to ensure that it will not increase demand. Ensure that policies in the WAF support this approach.
- Identify how businesses should make use of environmental audits (as required by the European Energy Performance of Buildings Directive (EPBD)). Whilst this is signposted in the draft SPG, the Mayor should identify how businesses should make use of the information once the audit has been carried out.
- The modelling approach to apportionment should be complemented with an evaluation that is spatially specific and which takes greater account of the different types of waste and waste management facility.
- Adequate provision needs to be made for recycling facilities within commercial premises and flats e.g. for SME’s, business hubs.
- Make it clear to developers exactly how the revised targets of 95 per cent to be recovered from construction should be implemented and reflected within the London Freight Plan.
- Recognise legal mechanisms to mitigate climate change such as the European Trading System (ETS) within updated aviation policies in the Transport Strategy, the Clean Development mechanism and explore the implications against development in London. All signs point to aviation being included in the ETS.
- Specify or encourage a proportion of zero carbon development within London to promote best practice.
- We are aware that Transport for London (TfL) has commissioned a health impact assessment of the Low Emissions Zone but it is not clear at this stage exactly how TfL intends to monitor the impact of the Low Emission Zones on Air Quality. Since this initiative is innovative and far-reaching, it would be appropriate for TfL to indicate what impact could be anticipated.
- Policy 4B.1 promotes high quality and inclusive design to create healthier communities: Home Zones, which are cited from the Mayor’s Transport Strategy (3.199) provide a golden opportunity to make developments truly

accessible for all ages and increase social cohesion etc. We understand that current guidance does not recommend retrofitting Home Zones; the Mayor's Supplementary Planning Guidance (SPG) on *Sustainable Design and Construction* could recommend that new developments incorporate Home Zone principles where appropriate.

- The recommendations of the Health Select Committee³⁹ state that all transport project proposals and policies should be subject to a health impact assessment before implementation. There is an obvious parallel with the new London Plan policy 3A.20. This requirement could be extended to organisations with a remit for transport such as Transport for London and the Highways Agency.

In this next section, we deal with cross-cutting issues relating to employment, the economy, education and skills and equality and diversity and present a high level overview of the key trends and assessment within table B, then explore particular aspects in detail. The relevant overarching objectives with the Plan are to:

- Make London a more prosperous city with strong, and diverse long-term economic growth.
- Promote social inclusion and tackle deprivation and discrimination.
- Improve London's accessibility.

It covers the relationship between employment and a range of other factors including health, mobility, barriers to work and types of job as well as tourism, retail, globalised economy and equality and diversity issues.

³⁹ Select Committee. Health. Third report. 2004. United Kingdom Parliament. Available at www.parliament.the-stationery-office.co.uk

Table B: Cross-cutting Analysis B

SD aim	Impact	Evidence base	Assessment
<p>Employment To offer everyone the opportunity for rewarding, well-located and satisfying employment.</p>	<p>?</p>	<p>Employment in London stands at 4.45 million or 15 % of UK total and is pivotal to the UK's economy. However unemployment is a significant issue in London which at 7.2 % is the second highest rate after the North-East. Black Asian, Minority and Ethnic groups (BAMEs) bear a heavy burden with 11.7% unemployed compared to 5.4 % of the white population.</p> <p>Retail plays a vital role in London's economy with over 40,000 shops in London located within 1000 town centres and expenditure set to rise.</p> <p>The finance and business sector has gained 610,000 jobs in the last 20 years and is forecast to create another 440,000 jobs over the coming 20 years.</p>	<p>The impact of the alterations on employments is likely to be mixed. Opportunity Areas, Central Activity Zone (CAZ), and regeneration zones provide the key to employment opportunities via the Plan. It should lead to an increase in employment in the key sectors finance and insurance along with the retail, cultural and leisure industries (projected to create an additional 178,000 and 333,000 jobs by 2016 and 2026 respectively). Consideration is also given to wider types of employment such as maintaining and enhancing a range of employment to support sustainable communities, and actively encouraging social enterprise and voluntary and community sectors. It proactively encourages access to and local employment opportunities, reduces barriers to work and encourages mixed use development. Mixed use development and competitive retail sectors also feature strongly.</p> <p>However, this will not necessarily benefit those most in need e.g. job creation does not necessarily trickle down to those most in need who may not be able to engage economically, it may not result in rewarding, skilled jobs which can have a detrimental impact on health. There remain high levels of unemployment within BAEM groups and high levels of child poverty. Changes to chapter 3B highlight employment participation but the focus is predominantly on the finance and business sector. These issues are explored under 5.7.</p>
<p>Stable Economy To encourage a strong, diverse and stable economy and to improve the resilience of businesses and their</p>	<p>+</p>	<p>London is an economically successful region generating 17 % of the total UK's GDP at £180 billion. Tourism, retail and finance sectors are all large contributors to London's economy – with finance alone accounting for 41.2 % of London's GDP. The private sector makes up 70 % of London's economy. The</p>	<p>The alterations should deliver a positive impact on the economy. This in turn, will significantly influence the spread of poverty, mobility requirements, levels of resourced efficiency and CO₂ emissions in London. The Plan has potential for significant impact on the finance, retail, and insurance sectors, helping them to grow and strengthen their role in the world economy – although this is not addressed fully (see 5.7.8). The alterations do also contain policies to protect local</p>

SD aim	Impact	Evidence base	Assessment
environmental, social and economic performance.		<p>health service is responsible for another 10 % of London's GDP and is a major employer in every borough. 30 million tourists spend approx £15 billion equal to 10 % of London's GDP. It accounts for 272,000 jobs or 7 % of total employment in London.</p> <p>It will also require an additional 0.9-1.5 million square metres of floorspace to meet the need for the projected rise in expenditure on convenience goods by 2 % per annum and comparison goods by 4.8 % between 2001 and 2016. 'Local suppliers re-spent on average 76 % of their income from contracts locally, compared with only 36 % with suppliers from outside an area.'⁴⁰</p>	<p>economies and independent, small-scale outlets which are an important feature of London's cultural and ethnic diversity. There is a strong focus on retail development (see 5.7.6).and new policy 2A.6 now refers to ensuring economic benefits flow to the suburbs. Some diversification within the economy should arise from policies encouraging alternative industries – see below.</p> <p>Crucially, economic growth continues to be a key driver rather than economic development (see 5.7) and there are worrying trends on the widening gap between rich and poor. There is also a missed opportunity to promote sustainable tourism, particularly in view of the Olympic games.</p>
<p>Creativity and Innovation To promote creativity and innovation in the environmental and social economy (including new clean technologies, renewable energy, pollution control and the skills sector).</p>	?	<p>Urban food growing contributes approx. £3m to London's economy and provides around 3,000 jobs. The sustainable energy industry is projected to be worth around £3.35bn and employs between 5,000 and 7,000 people. There is no shortage of environmental training provision in London with 369 environment-related courses provided by 71 different organisations.</p>	<p>The alterations will have a mixed impact on creativity and innovation. It is recognised as an important factor underpinning the London economy in the alterations to chapter 3B (3.130 onwards), and makes provision to accommodate the spatial needs of new sectors (3B.6). Chapter 5 now refers back to the Economic Strategy, other policies and supporting information elsewhere in the Plan that encourages diverse industries e.g. social enterprises, those around waterways (4C), renewable energy services, alternative technologies for transport etc and chapter 3B, 3.147 now refers to stimulating growth in energy efficiency services. In this way, support is given to green industries and SMEs, but the extent to which this will contribute to overall economic activity is not clear as the focus is overwhelmingly on strengthening the core sectors finance, retail and insurance. Green industries currently represent 7% of London's total employment and</p>

⁴⁰ The money trail – measuring your impact on the local economy using LM3 NEF and the countryside agency 2002, J Sacks

SD aim	Impact	Evidence base	Assessment
			have far greater potential. They are expected to double by 2010. (3.145). See 5.7.5 for further discussion.
Education and Skills To maximise the education and skills levels of the population.	?	London suffers from some contradictory trends with the highest rates in England for participation in education and training for 16/17 yr olds (2005), yet the lowest proportion of 19 yr olds with level 2 qualifications or above and GCSE results are 10 % below nationally expected levels. There are major differences in attainment of the different Black, Asian and Minority Ethnic (BAME) groups. Nearly half of London's business owners see skills shortages as their number one concern. The number of school age children is set to increase by 140,000 by 2016 and school age population is projected to increase by almost 8% by 2016. Just over half of this total growth of 140,000 is expected to be in outer London. London has over 40 higher education institutions and 56 colleges.	<p>The alterations will have a mixed impact on education and skills. The Plan makes provision for education facilities (in view of an increase of 140,000 school children by 2016) and aims to increase access to affordable educational facilities and play space (3A and chapter 3D addresses better access through incorporating education facilities into the town centre). It builds in flexibility of use to maximise the value of facilities and supports training to meet future employment needs (chapter 5 encourages upskilling and meeting need locally). The alterations also make use of the 2012 Games in targeting specific groups e.g. job opportunities for local communities. The policy on sustainable design and construction in chapter 4A has been extended to educational facilities to create a good environment for learning. Policies should help break down significant labour market barriers such as childcare, opening up more opportunities to a greater proportion of the population.</p> <p>Otherwise very little is mentioned on improving skills and higher education is not mentioned. The remit of the Plan does not address quality and range of education programmes.</p>
Equality and Diversity To ensure equitable outcomes for all communities, particularly those most liable to experience discrimination, poverty and social exclusion.	?	This group makes up 40% of all Londoners and significant growth is expected. The diversity of London is what makes it such a vibrant place with over 300 languages spoken in schools and 30 % of people cited the mix of people as one of their top 6 reasons for living in London. Black, Asian and Minority Ethnic (BAME) groups are more likely to be socially and economically excluded, unemployment rates are higher than for white groups. One in three people and 43 % of children are	<p>Uncertainty remains over the impact that the alterations will have on equality and diversity. The Plan acknowledges the significant challenges facing London, a growing population with a changing demography, greater diversity and worsening trends of social inequalities, but little is reflected in the policies. Overall trends will be affected by other policies on the environment, housing, transport and economy.</p> <p>On the positive side, disabled access is represented strongly. Chapter 3A explores the challenge of providing social infrastructure to suit different community needs and policy 3A.14 now includes additional</p>

SD aim	Impact	Evidence base	Assessment
		<p>estimated to live below the UK poverty line. The elderly constitute an eighth of the population and young people make up over a fifth of Londoners. 64% of lone parents are dependent on income support 1 million + disabled people live in London & 20% of households in London include a disabled person (3.62). People with disabilities are twice as likely to be unemployed. Over 10 % are lesbian/gay or transsexual.</p>	<p>references to community engagement and security which is then referred back to other relevant policies in chapter 4B, designs on London.</p> <p>Whilst the alterations should deliver improvements across a range of areas, such as higher construction standards, protecting open space, increased employment opportunities, there is a danger that the benefits of development will not flow to those people and communities most in need. The greatest uncertainty remains on how many of the challenges will be addressed to reverse the negative trends and huge challenges prevalent in London.</p>

5.7 Economic development

The Statement of Intent places the emphasis strongly on economic growth while the policy documents tend to use the terms interchangeably. The Further Alteration retains the original vision for the London Plan so economic *growth* continues to be a key driver. In order to be consistent with the new national sustainable development strategy, economic objectives would need to be framed in terms of economic development rather than growth. Thus making it clear, in line with the Economic Development Strategy for London, that it is not growth for growth's own sake, but responding and developing to the increase in population, providing the conditions for continued economic, environmental and social improvements across London.

The Economic Development Strategy for London notes economic growth has led to the agglomeration and the concentration of wealth and skills within the capital. London has the highest rate of child poverty in Great Britain and only 71 per cent of its working age population is in employment. Because the demand for labour is concentrated far more in higher skilled (and higher paid) occupations than in other parts of the UK, those with low qualifications face higher risks of exclusion from the labour market.

5.7.1 Health and employment

Reducing unemployment amongst socio-economically deprived groups means that the London Plan should have a positive health impact. A wealth of evidence has demonstrated unequivocally that the incidence of unemployment has both psychological and physiological health impacts such as depression, anxiety, low self-esteem, low affectivity, i.e., unhappiness, cardiovascular disease, coronary heart disease and ultimately increased mortality.⁴¹ Research has found that the health disadvantages induced by unemployment are primarily related to poverty created by the low-income nature of unemployment.⁴²

In reaction to this it is assumed that mechanisms designed to move people from unemployment to employment are the key factors in tackling poverty and improving health. The few studies which exist that examine the impacts of reemployment of the unemployed do in fact demonstrate that reemployment can reverse the negative health effects of unemployment.⁴³ However, it is dangerous to infer the simple causation that the transition to employment will function as a panacea of the economic and social problems faced by the unemployed and economically inactive – the notion that “any job is better than no job”.

⁴¹ Bartley M, Ferrie J and Montgomery S M (1999) 'Living in a high unemployment economy: understanding the health consequences' in Marmot M and Wilkinson R G (eds) (1999) *Social Determinants of Health*. Oxford: Oxford University Press, pp. 51–81
Murphy G C and Athanasou J A (1999) 'The effect of unemployment on mental health'. *Journal of Occupational and Organizational Psychology* 72, pp. 83-99
Clark A (2003) 'Unemployment as a Social Norm: Psychological Evidence from Panel Data', *Journal of Labor Economics*, (April 2003), 21, pp.323-351
Ozamiz J A, Gumpfmaier H, Lehtinen V (2000) *Unemployment and Mental Health*, The European Commission
See Bartley *et al* 1999; Clark 2003; Clark and Oswald 1994; Marmot and Siegrist 2003; McKee-Ryan *et al* 2005; Murphy and Athanasou 1999; Ozamiz *et al* 2000 for comprehensive reviews)

⁴² Bartley *et al* 1999; Benzeval 1998; Benzeval and Judge 2001; Brown and Moran 1997; Stronks *et al* 1998; Shaw *et al* 1999; Weich and Lewis 1998

⁴³ Vinokur A D, Schul Y, Vuori J and Price R H (2000) 'Two years after job loss: long-term impact of the JOBS programme on reemployment and mental health', *Journal of Occupational Health Psychology*, Jan 5 (1), pp. 32–47

Indeed, the Plan could consider that when addressing the needs of the “labour market weak” such as lone parents and ethnic minority groups it is necessary to recognise that the simple dichotomy between employment and unemployment is rather more complex than viewing unemployment as ‘bad’ and employment as ‘good’.⁴⁴

Paragraph 1.59 acknowledges that the gap between the richest and the poorest has grown for wealth and quality of life measures. Economic growth does not guarantee an equitable distribution of the gains. Job creation does not necessarily *trickle down* as job opportunities for the long-term unemployed. Measures to improve the infrastructure for economic activity in deprived areas must be coupled with measures to improve facilities and services for groups such as the long-term unemployed. The increased emphasis on accessible, affordable and appropriate childcare (3.149 and 3.150) is thus a welcome policy development. Lack of access to affordable childcare acts as a barrier to people particularly lone parents taking up employment and training opportunities, while the lack of suitable employment for parents, particularly lone parents, is a major contributory factor to London possessing the highest rates of child poverty in the country.⁴⁵

5.7.2 Good job/Bad job

Some forms of employment may provide soft skills but individuals who do not possess adequate or even basic ‘soft’ skills, qualifications and training will be unable to command employment that can provide these soft skills/opportunities for career progression. Successful programmes aimed at helping individuals into work focus upon providing the basic skills and ‘hard’ qualifications needed in order to command sustainable living wage employment. Temporary, insecure and low paid forms of employment are not significant mechanisms in facilitating social inclusion and in fact lead to the process of labour market churning whereby individuals move from unemployment to employment to unemployment. This has been shown to *scar* workers, i.e., make them less likely in the future to seek paid employment thereby reducing the likelihood of returning to the labour market.⁴⁶

Jobs vary not only in the income they provide but also in non-income attributes e.g. psychological characteristics of the job such as decision latitude and demands. Studies, such as the Whitehall studies,⁴⁷ sort employment according to various factors: good / bad, optimal, economically good, inadequate employment, under employment. These are characterised by pay, job satisfaction, job demands and level of control an individual has over these demands, overall job security, non-income benefits, i.e., pensions and health insurance, availability of skill formation/career progression.

⁴⁴ Dooley D and Prause J (2004) *The social costs of underemployment*. Cambridge: Cambridge University Press

⁴⁵ Evans M, Eyre J, Millar J and Sarre S (2003) *New Deal for Lone Parents: Second synthesis report of the national evaluation*, London: Department for Work and Pensions

Evans M, McKnight A and Namazie C (2002) *New Deal for Lone Parents: First synthesis report of the national evaluation*, London: Department for Work and Pensions

⁴⁶ Martin R, Nativel C, Sunley P. (2003) “The Local Impact of the New Deal: does Geography make a difference?” In Martin R and Morrison P S *Geographies of labour market inequality*. London: Routledge, pp. 175-207

⁴⁷ Ferrie JE, Shipley MJ, Standsfeld SA, *et al.* Effects of chronic job insecurity and change of job security on self-reported health, minor psychiatry morbidity, psychological measures, and health related behaviours in British civil servants: the Whitehall II study. *J Epidemiology Community Health* 2002;56:450–4

Employment, which errs on the negative side of those characteristics, is unlikely to facilitate social inclusion or generate positive health improvements amongst the socially and economically deprived.

The hotel, restaurant and retail sectors are notorious for offering low paid and insecure entry-level jobs. These have negative health effects.⁴⁸ In boroughs which already suffer from high unemployment (and long-term unemployment) and whose residents lack the necessary skills to access higher grade jobs, it is likely that these jobs will not facilitate social inclusion for these groups and may further compound existing deprivation thereby increasing inequality across London.

5.7.3 Mobility and access to employment

The Plan aims to improve mobility and access to employment in a way that will contribute to Sustainable Development and aid economic success (3C). Providing a much greater range of housing should enable key workers and allow more people to live and participate in London's economy. This is supported by plans to support local employment opportunities (2A.1) small and medium-sized enterprises (SMEs) and core groups such as local businesses and women. However, linking jobs in central London to areas of regeneration will create further stress on transport and transport facilities being affordable and equitable are key to those on the margins of the economy.

5.7.4 Barriers to work

By improving childcare provision and equipping people with the right skills, labour market barriers such as cost and availability of childcare can be removed thereby addressing a significant trend which has resulted in nearly a quarter of households with children in London, and nearly a third in inner London having no adult in employment. The inclusion of support for London's refugees and asylum seekers would also help reverse these trends.

The following potential mitigation measures are proposed:

- *Identified opportunity areas and employment are linked to regeneration*
- *Employment and job retention opportunities in outer London are maximised and do not just flow to the CAZ, especially as the majority of London's workforce live in the suburbs.*
- *Job creation is an important mechanism in promoting social inclusion and improving health. However, the Plan must be wary of the potential for the jobs created to further accentuate existing inequalities due to their potential limited sustainability in terms of providing a living wage, opportunities for skills development and qualifications. It is important to deal with the effects of relative, not absolute, deprivation and poverty.*

5.7.5 Economic diversification

Diversification of the economy is recognised as a key challenge. It is difficult to assess the type of economic activity that will take place other than an increase in finance, retail and leisure and more links could be made here to the Economic Strategy and other policies and supporting information elsewhere in the Plan that encourages industries to grow up around waterways (4C), green industries, boost

⁴⁸ Benavides F G, Benach J, Muntaner C, L Delclos G L, Catot N and Amable M (2006) 'occupational injury: what are the mechanisms? Associations between temporary employment and occupational injury: what are the mechanisms? *Occup. Environ. Med.* ;63;416-421

alternative technologies for transport and using public transport to bring technologies to market (3C). Policies for a strong and stable economy are supported throughout the Plan which aims to support start ups, new industries and environmental industries and 4A seeks to create alternative technologies. Vibrant town centres and mixed use development will also have a beneficial impact on economic activity, reducing the need to travel and addressing economic and social exclusion.

The London Development Agency (LDA) has conducted a series of Green Alchemy reports identifying issues relevant to London's Environment Sector defined by the LDA as 'all activity – private, public and voluntary sector – that is engaged in the delivery of goods and services intended to protect/and or improve the environment'. It has huge potential for growth in line with London's status as a world-class research and innovation centre and help deliver policies in the Plan which support renewable energy.

5.7.6 Retail

The alterations reflect the important opportunities that retail development has for regenerating London's town centres, and include key policy directions for improving 'greater access to employment opportunities both locally and across London'. Changes to supporting text support boroughs working with local communities and retailers to remedy any lack of local shops (2.13) and support town centres as opposed to out of town shopping which should help counteract national trends. Retail has a significant impact on how people travel and this policy will directly increase equitable access by its location and accessibility by modes of sustainable transport.

5.7.7 Tourism

It is possible for the tourism sector to be managed and delivered in a sustainable manner using the VICE framework which addresses the needs of visitor, industry, community and the environment. This means integrating sustainable development principles into the type of tourism activities and how tourism is managed. This could reduce the negative environmental impacts of London's conferences, banquets and events and enhance London's competitiveness as a world city. There is far greater scope to actively encourage sustainable tourism in anticipation of a greater influx of visitors for the 2012 Olympics and Paralympics games.

5.7.8 Globalised economy

Chapter 1 focuses on maintaining London as a world class financial centre and considers the pressures it will face from growing economies in India, China and elsewhere. It highlights the need to work with other regions on developing mutually beneficial economic strategies. Yet, it is not so clear how providing services to these new economies such as professional, legal, accountancy and advertising services as described in the supporting text to Policy 1.1 is a long-term blueprint for success that will enable London to maintain its pre-eminent position. Neither does there appear to be any significant mention of the need to prepare London's citizens and businesses to do business with people in these new markets.

The following potential mitigation measures are proposed:

- *Steps to encourage sustainable tourism defined as 'the interaction between the needs of the visitor, industry, community and environment', as defined in the glossary..*
- *Avoid potential confusion over economic development verses economic growth which could lead to uncertainty over outcomes, including who will*

benefit and the environmental impact. Reframe economic objectives in terms of achieving a sustainable economy in line with the National Sustainable Development Strategy which would also validate the current indicator set as fit for purpose.

- *Continue to support corporate social responsibility (CSR) within a range of key sectors and the seven London principles which provide guidance to the finance sector on how to integrate CSR.*
- *Measures should be put in place to ensure that 'creativity and innovation' is embraced throughout the timescale of the Plan (see 3.13) and learning from existing pockets of activity is promoted.*
- *Further changes will need to be made over time to ensure that London continues to address the changing world economy and embrace becoming a low carbon economy.*
- *There are clear opportunities to supplement the decline in manufacturing with new clean technology and renewable energy based industries which will require skilled people and lead to quality employment. As well as promoting activity traditionally associated with this area such as energy or waste management; the same aim should be encouraged within other sectors such as construction.*
- *The Plan addresses young children, buildings (mixed use of schools), and skills but not compulsory schooling (secondary and primary schools). London's school age population is projected to increase by almost eight per cent by 2016. There are general references to raising standards, but this will need to be enforced.*
- *Good access to educational facilities should be further encouraged through including the principle of providing good quality facilities in close proximity to homes and workplaces.*

5.8 Equality and diversity

As highlighted throughout this report, many of the London Plan policies will affect the Mayor's equality groups. Within the GLA the equality target groups are: Black, Asian and Minority Ethnic communities, women, disabled people, lesbians, gay men, bisexual and transgendered people, older people, young people and children and faith groups. People from these communities and groups form the large majority of Londoners. Socially excluded people also face disadvantage and discrimination and the GLA is developing work to address the needs of a range of socially excluded people, including refugees, asylum seekers, homeless people, people who abuse drugs and alcohol and people with mental health needs.

Specifically, chapter 3A explores the challenge of providing social infrastructure to suit different community needs. Policy 3A.14 includes detailed consideration of the requirements of different population groups within London including particular spatial issues which they may face. These include issues relating to the provision of and access to services and to quality of life. This is highly impressive. BAME, older and disabled people etc are to be consulted on housing needs (3A.4) and sites for gypsies (3.56) and vulnerable groups e.g. businesses operated by women and BAMEs are to be protected (3.60). It will be important for this detailed understanding to inform the DPDs. The Supplementary Planning Guidance on *Meeting the spatial needs of London's diverse communities* will be very important in this respect.

Disabled access is strongly represented in the alterations particularly 3D and targets set for disabled access in housing which is commensurate with the 20 per cent of households in London that include a disabled person and the high unemployment rates – at twice the national average.

The following potential mitigation measures are proposed:

- *The 2012 Games and regeneration in East London seek to reduce inequalities, but the impact of construction is likely to be significant. The building of Crossrail will affect Asian businesses in Tower Hamlets, and the building of Thames Gateway will increase noise, pollution and congestion for nearby communities. Provision needs to be made to ensure that these communities do not suffer a disproportionate impact in the short term and benefit from the overall outcome.*
- *BAME communities are mentioned several times along with access for women, but it is not clear what should be done. Faith groups are not specifically mentioned as potential routes for delivery. These groups would benefit from approaches such as built in flexibility for extended families in building design.*
- *Support opportunity areas and general economic growth to assess whether it will benefit Black, Asian, Minority and Ethnic (BAME) groups. Reduce the reliance on the 'trickle down effect' where increased economic activity will, by default, raise people out of poverty and improve the standard of living across the board. This is often not the case.*
- *Accommodating the needs for an ageing population that will want more opportunities for education, employment and entertainment.*
- *Measures to improve the infrastructure for economic activity in deprived areas must be coupled with measures to improve facilities and services for groups such as the long-term unemployed*

Additional recommendations to support the London (LP)

The following recommendations are actions that would support implementation of the LP in leading to sustainable development, but are outside the scope of the LP.

- Provide more detail in the Economic Development Strategy on whom GLA believe will benefit from economic development and why, see 2A.9 'structural economic challenges'.
- Increase support to local retailers by encouraging the reuse of redundant retail premises and negotiation on retail premises for locally owned stores at affordable rates in addition to the general alteration in 3.125 supporting affordable premises for new types of occupiers includes SMEs.
- Ensure support in Local Development Frameworks for affordable and accessible workspace for a range of activities including community arts.
- Research on skills has identified existing gaps, e.g. skills and jobs from the Renewables report by London Renewables and the findings need to be acted upon, not least through funding mechanisms from the London Development Agency (LDA), and European co-financing organisations that should reflect sustainable development principles.
- There is a need to recognise the part that Further/Higher education institutions can play in 'skilling up' and/or refreshing the local skills base (as outlined in chapter 2 alterations) to meet the needs of London's economy and should be picked up in the LDA for EDS. These should also cover the different skill sets that a changing and more diverse economy will require.

In this next section, we deal with cross-cutting issues relating to biodiversity, liveability, ownership and participation, safety and security and health. It presents a high level overview of the key trends and assessment within table C, then explores particular aspects in detail. The relevant overarching objectives with the Plan are to:

- Make London a healthier and better city for people to live in.
- Promote social inclusion and tackle deprivation and discrimination.
- Make London an exemplary world city in mitigating and adapting to climate change and a more attractive, well-designed and green city.

It covers the 2012 Games, the impact of biodiversity among other objectives, general safety and security issues and health and well-being.

Table C: Cross-cutting Analysis C

Part of the table SD aim	Impact	Evidence base	Assessment
<p>Biodiversity To conserve and enhance natural habitats and wildlife and bring nature closer to people.</p>	<p>+</p>	<p>The 33 Greater London boroughs cover nearly 158,000 hectares (over 600 square miles). More than 40 % of the total land area is green open space and nearly half of that is considered valuable as wildlife habitat⁴⁹ that, in turn, supports a considerable diversity of species. Yet in 2006, only 58 % of Londoners agreed that London is a green city⁵⁰ which suggests that the issue is probably localised and one of access. Statutorily designated wildlife sites constitute 17% of the land. Biodiversity of Blue Ribbon Network has generally improved over past few decades.</p>	<p>The alterations should help enhance biodiversity (especially through policies in chapter 3D), protect open space and improve accessibility to green space. Initiatives such as the green grid and green arc should help drive improvements for example the addition to policy 2A.1 – “ensuring that development incorporates green networks that are planned, located, designed and managed as an integrated part of the wider network of open space.” Policies are likely to bring people closer to nature through improved accessibility particularly through the guidelines (3.249) on size and distance travelled from home to different types of open space. This is important considering that growth could easily result in a detrimental impact on biodiversity. Protecting biodiversity is important for a host of other objectives, for example health and general quality of life.</p> <p>Other improvements made include giving guidance to encourage functional and physical linkages within the network of open spaces and to the wider public realm, improve accessibility for all throughout the network and create new links based on local and strategic need (3D.10); stipulating that all developments, including major developments, should incorporate appropriate elements of open space that make a positive contribution to the wider network; protecting biodiversity outside areas of strategic importance (paragraph 3.256, chapter 3D); setting targets for the restoration and re-creation of priority habitats (table 3D.2) and encouraging living roofs.</p> <p>Several changes have been made to the Plan as a result of the screening for Appropriate Assessment. These changes strengthen policies and supporting text so as to avoid adverse effects on the conservation</p>

⁴⁹ Biodiversity – A vital part of London http://www.lbp.org.uk/07library/our_green_capital.pdf

⁵⁰ Mayoral Mori Poll 2006

Part of the table SD aim	Impact	Evidence base	Assessment
			objectives of designated EU conservation sites (see appendix C for full changes). Section 5.9 explores biodiversity in more detail.
Liveability and Place To create and sustain liveable, mixed use physical and social environments that promote long-term social cohesion, sustainable lifestyles and a sense of place.	+	Two-thirds of London's land area is in the suburbs. The target is 0% for net loss of open space appears to be working - in 2004/5, the vast majority - 96 % of all units were permitted on previously developed land. ⁵¹ Otherwise, very little data is available to support this objective.	Overall the Plan should make a positive contribution to liveability and place and it should also seek to ensure that this continues through to delivery. The changes should revitalise communities all over London, not just central London, they highlight the need for key services as part of development, and aim to revive town centres. Policy 2A.5 on town centres now more explicitly addresses liveability issues in the first point on sustaining and enhancing the vitality and viability of town centres. Access to culture is also dealt with well in policy 3D.4. Policy 3A.15, chapter 3A Protection and enhancement of social infrastructure and community facilities has been expanded to include a range of facilities such as sport and leisure, schools, nurseries and so on. 3.78 now also refers to sporting or cultural facilities. Also see discussion under 5.1.1.

⁵¹ *London Plan Annual Monitoring Report 2 February 2006* Mayor of London

Part of the table SD aim	Impact	Evidence base	Assessment
<p>Ownership and Participation To promote civic participation, ownership and responsibility and enable individuals, groups and communities to contribute to decision-making at neighbourhood, borough and regional levels in London.</p>	?	<p>Currently black and white women and BME men are under represented among elected representatives and opinion leaders in business, and turnout at the last election in London was 50.3 % in 2005.</p>	<p>Generally, there are mixed references to ownership and participation within the existing Plan. Overall a more consistent approach to ownership and participation needs to be taken. Whilst some chapters have strongly and explicitly addressed involving community groups in decisions such as chapter's 3A and 6, others, such as chapters 1 and 4C, have little mention of community engagement. This may mean certain policies are more readily accepted and applied within communities whilst others encounter opposition.</p> <p>Positive additions include ownership and participation as a stronger principle within policy 2A.1 on sustainability criteria. The slightly revised policy 3A.14, chapter 3A on addressing the needs of London's diverse population has made community engagement more explicit. Chapter 4A has developed its reference to community engagement, particularly on the need around people's involvement in carbon reduction measures. Chapter 5, 5.8 now makes reference to community involvement and engagement. There is also a clear emphasis on building capacity within communities to take the lead in addressing their own needs (see 2A.9).</p>
<p>Health and Well-being To maximise the health and well-being of the population and reduce inequalities in health.</p>	+	<p>Socioeconomic status: the risk of mental illness increases with social and economic deprivation. Mental illness itself can be a cause of unemployment leading to further deprivation. London is a culturally diverse city, with one in three Londoners coming from an ethnic minority community, and over 300 languages being spoken. This diversity is one of the features that make London such a vibrant world city – yet we know that London's communities do not benefit in equal measure from the opportunities and wealth the capital has to offer.</p> <p>Ethnic group: ethnic minorities experience a higher burden for certain diseases. This burden has been described for the following areas: coronary heart disease,</p>	<p>Health and well-being is a cross-cutting issue, this means that many of the issues have been touched upon in other sections. The health effect of the amended policies will depend in large part upon the ways in which they are implemented. Of paramount importance is spreading the benefits of economic development, sustainable transport, biodiversity, education and housing. There is a wide disparity of relative wellbeing across London boroughs across a range of health issues</p> <p>The new objective on health and the new policy direction on health inequalities however explicitly raises the profile of improving health. Health inequalities need to be consistently followed throughout the whole Plan and addressed at regional, subregional, local and neighbourhood levels and this should be aided by the commitment to monitor health inequalities.</p>

Part of the table SD aim	Impact	Evidence base	Assessment
		<p>haemoglobinopathies, cancers, diabetes, mental health, tuberculosis and sexual health. Elders from Black, Asian and Minority Ethnic groups in London report higher levels of limiting long-term illness. Such differences appear to exist even within income groups.</p> <p>Age: in relation to the forecast aging or 'greying' of London, it is necessary to consider how health profiles and demand for services will alter. Individual living conditions will also change as they move through the life cycle. Deprivation is not a static phenomenon; people move in and out of it.</p> <p>Geographical area: Londoner's self-reported health is slightly better than the national average for England. However, there are inequalities within the health of Londoners. Areas such as Tower Hamlets, Hackney and Newham report high rates of poor health. Most of the areas with significantly low levels of male and female good health are located in inner London. In addition there are also wide variations in the percentage reporting their health as not good by ethnic groups.</p>	<p>Many of the changes throughout are expected to have effects on human health. Of positive, direct and obvious importance for human health are the following: supporting text on Policy 3D.4i now address issues associated with 'problem gambling', which is of concern. The Mayor will require an action plan to mitigate its impacts, including contributions to meeting its additional health costs. He will also seek to maximise skills and training provision. Environmental inequalities are now acknowledged in chapter 3A and the London Plan now includes indicators on health and health inequalities. Health is considered in relevant sections throughout the report and summarised more fully under 5.11.</p>
<p>Safety and Security To enhance community safety by reducing crime, antisocial behaviour and the fear of</p>	<p>?</p>	<p>In 2002/03 there were approximately 60,000 street crime offences across London. London has the highest levels of burglary, vehicle theft and robbery across the UK but the rate of recorded robberies has seen the lowest increase since 1990. The areas of Southwark, Westminster, Hammersmith and Fulham have the highest rates of youth victims crime whilst across London 21 % of 'accused' are young people. Noise from aviation continues to be a serious problem for</p>	<p>The alterations will have a mixed impact on safety and security. London suffers from high levels of crime and perception of crime and the threat of terrorism. It can be seen that a concerted effort to include more policies and text on safety and security has been made contributing directly to enhancing community safety generally and on public transport 3C.9i). The alterations specifically seek to promote public safety through design and safety, and security of the transport network preventing crime and accidents in the first instance. Some of the changes leading to positive outcomes include an update to reflect the paramount importance of the</p>

Part of the table SD aim	Impact	Evidence base	Assessment
crime.		6 % (180,000) of households surveyed and a problem for 16 % ⁵² (490,000) and is likely to rise to between 278,000 and 332,000. In 2000 307,000 people fall within the noise contour (the legal threshold used to indicate onset of community annoyance).	<p>safe transport of children and young people (3.181iii). Chapter 5, 5.17i is has been strengthened to address safety and security as previously the only policy for the North East of London made any reference to safety, stating 'ensure that new development is sustainable, safe, secure and well designed (5C.1)'. Designing out crime will be an issue with respect to the design of the Olympic area. Policy 4B.1 Design principles for a compact city now addresses security issues as well as 4B.5i and should apply to the design of the Olympics.</p> <p>Chapter 3A, 3.62ii has additional guidance on working with partners to improve understanding and communication between different communities to improve social cohesion and helps address the sub-objective to 'foster improved, sustainable and mutually beneficial relationships with neighbouring regions'.</p> <p>However, changes will most likely apply to new development and therefore it is still unresolved how you design and address in existing communities. The alterations can only have a limited impact in lieu of the significant problems, and will be substantially affected by other policies such as those improving environmental quality and employment levels. With regard to noise, the increase in air traffic will have an adverse impact on local communities. See 5.12 for further discussion.</p>

⁵² *The impacts of air transport in London*: London Sustainable Development Commission: April 2004

5.9 Biodiversity

In London's Biodiversity Strategy the Mayor states his intention 'to measure the success of the strategy against two main targets: firstly that there is no overall loss of wildlife habitats in London; and secondly that more open spaces are created and made accessible, so that all Londoners are within walking distance of a quality natural space.' (p vi). In 2004/5, the vast majority - 96 % of all units were permitted on previously developed land⁵³ indicating this policy is working reasonably well.

Biodiversity is an important objective for a suite of other policies including climate change, health, housing, safety and security. "Green spaces play a vital role in the lives of Londoners by promoting healthy living, as a source of education, preserving heritage and culture, providing recreation and tourism, environmental sustainability and community development."⁵⁴ All this, indirectly improves the perception of safety and security within a locality that is itself, inextricably linked to trends in equality and diversity and the economy (see section 5.2 for further discussion).

The London Health Commission's *Health Impact Assessment of the Mayors Biodiversity Strategy*⁵⁵ highlighted the link between health and open spaces and poor health and lack of access to open spaces. This work is now being progressed further by the Greater London Authority (GLA) Environment team's study into *Areas of Deficiency and access to nature in London*.⁵⁶ English Nature also suggests that access to green space protects and promotes both physical and mental health and this is⁵⁷ acknowledged in LP.

The Plan specifies the distance which Londoners should travel in order to access each size of open space (table 3D.1) and sets a target of 'no net loss of open space,' which should go some way to rectifying equitable access to green space. Chapter 6 has also been updated to indicate that demand for land from housing, waste facilities and schools should be met through controlled reduction in industrial land, higher density of development and the regular redevelopment that produces available development land (6.32).

In addition, a report by GLA Economics *Valuing Greenness* concluded that wards with a large percentage of green space indicates better overall educational performance. It also identified a plausible correlation between green spaces and indices of multiple deprivation, and that the proportion of green space in wards is the fifth most significant indicator in explaining the variation in average house prices.⁵⁸ The London Development Agency (LDA) is developing a policy on biodiversity which builds on the considerable evidence that a good quality external environment helps improve people's quality of life.

⁵³ *London Plan Annual Monitoring Report 2* February 2006 Mayor of London

⁵⁴ *Valuing Greenness*, GLA Economics June 2003

⁵⁵ *London Health Commission. Health impact assessment: draft biodiversity strategy*. London Health Commission and the Environment Committee of the Assembly, M. Cameron and B. Cave (2001)
http://www.london.gov.uk/approot/mayor/health_commission/health_index.jsp#hia

⁵⁶ *Areas of Deficiency and access to nature in London*, Greater London Authority, draft

⁵⁷ *Nature and psychological wellbeing No.533* (2001), Seymour, L. English Nature Research Reports

⁵⁸ *Valuing Greenness*, GLA Economics June 2003

The draft targets for restoration and re-creation of priority habitats (table 3D.2) will help strengthen implementation of the objectives in protecting and enhancing open space and biodiversity within GLA.

The emphasis in the Further Alterations is on accessibility and enhancing habitat and green space for example existing policy 3D.11 encourages this with the supporting statement “wherever appropriate, new development should include new or enhanced habitat, or design (such as green roofs) and landscaping that promotes biodiversity, and provision for their management”, (3.260) and a new policy 4A.2i encourages major developments to incorporate living roofs and walls with supporting information (4.52) on living roofs. This will help to reduce run-off and therefore the risk and extent of flooding.

The following potential mitigation measures are proposed:

- *The 1st bullet under Policy 2A.1 “taking account of the impact that development will have” needs to avoid or minimise adverse impacts of development.*
- *Ensure clarity on what is meant by general statements such as 3C.14 Thames Xing “high environmental standards” e.g. commit to avoiding indirect adverse impacts on designated conservation sites further downstream (Thames Estuary & Marshes).*
- *Phrases such as “The planning of new development and regeneration should have regard to nature conservation & biodiversity” (3D.12 Biodiversity and nature) should ultimately seek to conserve and enhance sites of biodiversity interest, as is also the case under 5D.1 Strategic priorities and 5F.1 Strategic priorities.*
- *The likelihood of increasing environmental benefits arising from the Green Belt 3D.8 could be brought about by specifying enhancement of biodiversity through taking opportunities to increase the ecological continuity of the greenbelt with the Green Grid and EU designated sites.*

5.10 Ownership and participation

The Statement of Intent makes limited reference to revising policies on ownership and participation which should encompass not only formal decision-making, but also broad community engagement that indirectly impacts on aspects such as crime and local entrepreneurialism. Only in connection with London’s suburbs is there a stated intention to take a more proactive approach to identifying the needs of residents and businesses. However some revisions have been made. The new policy 2A.6 on supporting sustainable communities outlines that stakeholders should take a proactive approach that engages the community, which is positive.

5.10.1 Public health

The text supporting policy 2A.9 places a clear emphasis on building capacity for communities to take the lead in addressing their own needs. This ties in with the findings of the influential, Treasury sponsored, Wanless review of long-term population health⁵⁹ which shows that if public health is to improve, and the demands on the health service are to be contained, people must take responsibility for their own health. People need to be *fully engaged*: ‘levels of public engagement in relation

⁵⁹ *Securing our future health: taking a long-term view*. Health Trends Review team at HM Treasury, Final Report, 2002. D. Wanless. <http://www.hm-treasury.gov.uk/wanless>

to their health are high: life expectancy increases go beyond current forecasts, health status improves dramatically and people are confident in the health system and demand high quality care.' This of course, is complemented by wider determinants of healthy lifestyles e.g. nutrition, exercise, air quality and so on.

5.10.2 The 2012 Games

Policy 5D.2 states the legacy aims for the 2012 Olympics Paralympics games for North-East London while policy 3D.5 looks at the wider legacy from the games. These provide all sorts of opportunities for Londoners from employment to physical activity. There is ample evidence from other Olympic & Paralympic cities to suggest that the experience of preparing for, and hosting, the games can be very disruptive for communities living adjacent to the Olympic & Paralympic sites. These adverse effects are likely to be short term. It would be helpful to require short-term effects on local communities to be considered as well as the longer-term legacy effects. An analysis of the approaches taken by three US cities to bidding for, and staging, an 'Olympic mega-event' raises questions about the effects on local populations.⁶⁰ The Mayor of Atlanta stated that the Games would lift people out of poverty. There was, however, neither strategy nor funds for anti-poverty programmes. Los Angeles and Salt Lake City made no provisions for the inclusion of non-elite interests in their bids. The challenge is to ensure that community interests include the needs of local residents and local public spaces and are not limited to professional sports teams, their owners, developers, and hotel and leisure industry operators.

5.11 Health and well-being

It has been noted throughout the report how health and well-being are cross-cutting issues. This is both an opportunity and a challenge for the London Plan. Many of the targets of the London Plan pick up on wider determinants of health and the high-level indicators proposed by the London Health Commission are included. The Plan now includes an objective on health inequalities and this comes with indicators attached. The SA team recommend additional indicators including one on the self-rated health of people living in London.

Health improvement and health gain of existing populations tend to demonstrate a lagged effect. In part, because of the significant changes or improvements in terms of land use, infrastructure improvements will require implementation through Local Development Frameworks involving planning, community consultation and possibly land assembly and acquisition. There will be short-to medium-term improvements, particularly in psychological health, from the incremental changes which address the immediate social context of London.

A briefing paper for health stakeholders, an evidence base and notes from the health stakeholder workshop are available on the London Health commission website www.londonhealth.gov.uk.

Long-term improvements in social and economic well-being such as education, employment and the creation of a stable economy will ensure that individuals and communities experience social mobility and reduction of income and health inequalities.

In relation to the above, new policy 3A.14 includes detailed consideration of the requirements of different population groups within London including particular spatial

⁶⁰. Olympic cities: lessons learned from mega-event politics. G. Andranovich, M. Burbank, and C. H. Heying *Journal of Urban Affairs* 23 (2):113-131, 2001

issues which they may face. These include issues relating to the provision of and access to services and issues relating to quality of life. There is an improvement on policy regarding neighbourhoods and sustainable design and construction, which advocate support of Home Zone principles in new development.

It is important to ensure that DPDs continually remain cognisant of the fact that some individuals and some communities have *further to travel* in terms of being able to take up and make use of the opportunities which the London Plan seeks to provide: for example economic growth and its positive effects in terms of providing employment can only be effectively accessed (jobs that enable social mobility, living wage etc) by those who possess the adequate necessary skills and qualifications. In terms of health improvement, those suffering poor health may require a longer time period in which their health will improve as opposed to those who already experience good health and well-being. The Supplementary Planning Guidance for London's diverse communities is important in this respect.⁶¹

The projected expansion of the population for Greater London threatens to place extreme pressure on the wider social infrastructure, including health services. This is recognised in the alterations to the London Plan: para 3.14i describes how social infrastructure is critical to achieving housing targets; the supporting text for Objective 4 of the London Plan has been altered to include specific reference to social infrastructure and to health inequalities; and Policy 3A.23 which refers to Community Strategies now includes mention of *a full range of social infrastructure and community facilities*.

We note that the Social Infrastructure Framework project specifically includes *services* and *facilities* within its definition. It would be helpful for the London Plan to define *social infrastructure*. This is relevant for the Plan as both services and facilities could be funded (in whole or in part) by planning obligations.

The guidelines for planning obligations have been updated and NHS organisations can negotiate funds for facilities and services. Policy 3A.17 refers to health objectives and it has been updated to reflect recent policy changes. The recent changes to the regulations covering planning obligations provide scope for cross-referencing the supporting text of 3A.17 to Policy 6A.4 which covers priorities in planning obligations. The London NHS Healthy Urban Development Unit has developed policy guidance and a spreadsheet model for calculating appropriate developer contributions for health services and facilities.

The explicit mention of health impact assessment in Policy 3A.20 is a positive step and will hopefully remove any ambiguity with the previous wording. This recommendation will have resource implications: the onus must be on the developer to fund the HIA and where environmental assessment is required health and health inequalities should be written into the scope. The Director of Public Health in the local Primary Care Trust should be party to agreeing the scope of environmental assessments of strategic plans and of programmes and projects. It is unlikely that Primary Care Trusts will have the capacity to conduct HIAs in each instance.

⁶¹ Meeting the spatial needs of London's diverse communities' is due to be published in draft in Autumn 2006 and in full in 2007. See www.london.gov.uk/mayor/strategies/sds/spg.jsp for more information

The environmental assessment sector will have greater expertise in the *health protection* elements of HIA. The Best Practice Guidance for public health is very important in this respect.⁶²

5.12 Safety and security

In the Mayor's Statement of Intent he outlines that he "wishes to ensure not only that new development is designed with security as a key consideration, but also that these issues are addressed in the public realm and in the management of public transport". The objectives have been updated to reflect this. He therefore places particular emphasis within the review on promoting public safety through design and safety and security of the transport network.

Specifically the introduction of a new policy on safety, security and fire precaution and protection (4B.5i), which states that boroughs should seek to create safe, secure and accessible environments. The supporting text outlines that boroughs should follow urban design principles and that the Mayor will encourage the use of DCLG and Home Office guidance and that boroughs should consult their Crime Prevention Design Adviser (CPDA). A new policy has also been introduced in chapter 3C that focuses on public transport security (3C.9i). These policies address many of the areas set out in the objectives and represent a step forward in addressing safety and security.

The corrosive effect of crime and fear of crime, combined with economic disadvantage and a poor physical environment have a major impact on the quality of people's lives and their health. As part of this, trust, tolerance and a sense of attachment to the neighbourhood are strongly related to health. This means that although where you live matters for your health it is your social environment that matters most: "for those of low social status, health is made worse by living in a poor area. There is a kind of double jeopardy". A systematic review of public health research on the environmental determinants of physical activity in adults concluded that the most consistent evidence regarding effects of environmental factors on physical activity in adults is observed for accessibility of facilities, opportunities for activity, and aesthetic qualities of the area.

The following potential mitigation measures are proposed:

- *Policy 3A.17 refers to health objectives and it has been updated to reflect recent policy changes. The recent changes to the regulations covering planning obligations provide scope for cross-referencing the supporting text of 3A.17 to Policy 6A.4 which covers priorities in planning obligations.*
- *The development of the subregional frameworks can be improved through application of the recently commissioned consultation tool for London's Voluntary & Community Sector, developed by Planning Aid London, London Civic Forum and London Sustainability Exchange for the GLA. The development of this tool highlighted that the Subregional Development Frameworks were not yet fully owned by the subregional partnerships and wider communities, which if it were fostered, could add significant value to their contribution to sustainable development.*
- *Provide more detail on how safety and security measures will be implemented. It is unclear how much of this will be left up to the boroughs.*

⁶² Best Practice Guidance on health issues: Improving Health through Planning (is available in draft). Final publication due in 2007. See <http://www.london.gov.uk/mayor/strategies/sds/bpg.jsp> for more information

Additional recommendations to support the London (LP)

The following recommendations are actions that would support implementation of the LP in leading to sustainable development, but are outside the scope of the LP.

- To augment 'the ecological matrix', a good strategy would also take into account all other habitat e.g. parks, gardens, roofs, waterbodies, etc which make up a huge proportion of habitat. For example, some species need frequent patches of habitat in order to migrate or forage successfully. This needs to be integrated into implementation for example in park management and the awarding of landscaping contracts for new developments, encouraging useful plant species which provide habitat for insects and therefore birds. Thought will also have to be given how to build in resilience to climate change for both habitats and the biodiversity they support.
- More spatially specific planning tiers will need to avert impacts of renewables schemes such as major wind farms – for instance to ensure that bird flight routes are not affected with regards to SPAs e.g. under 4A.7.
- Acknowledge the affect of parked cars on health and well-being in the Transport Strategy. They obstruct vision and increase social severance making it less attractive to be a pedestrian. A high density of curb parking is associated with increased risk of injury for children.⁶³ London has a high risk of injury accident at 635 per 100,000 population to Paris' 420.⁶⁴
- Children's play territory has been reduced as roads and pavements become more and more dangerous. It also impairs, or at least alters, children's psychological development by curtailing their sense of independence and personal mobility. Motorised transport limits children's autonomy and makes them dependent upon adults. Implementation should support increasing equal sharing of road space between users and be supported in the Transport Strategy.
- Extend responsibility of delivering policy 3A.20 to include TfL and the Highways Agency. Include clearly defined action plan to mitigate any negative side effects emerging from any Health Impact Assessments.

⁶³ odds ratio 8.12, 95% confidence intervals 3.32 to 19.90 in Roberts I *et al* Trends in intentional injury deaths in children and teenagers (1980-1995). Journal of Public Health Medicine 1998;20(4):463-6

⁶⁴ Commission for Integrated Transport. European Best Practice Focus on World Cities. Fact sheets - no.6. 2005. Available at www.cfit.gov.uk

6 Conclusion

In summary, the Sustainability Appraisal shows that the alterations made to the policies and the supporting text of the London Plan have, on the whole, real potential to increase sustainable development in London.

The draft Further Alterations to the London Plan refines the London Plan. It ensures that the spatial development strategy sets the framework within which London's economic, social and environmental conditions continue to move in the right direction.

This will be achieved through a series of policies that prioritise climate change, public transport and accessibility, affordable housing, renewable energy, waste facilities and health. These policies are mutually reinforcing. For instance, by reducing congestion, you reduce air pollution, CO₂ emissions, improve health and reduce the burden to the economy. In addition, the alterations will help avoid many of the adverse impacts on biodiversity, health and wellbeing, equality and diversity, and waste recycling and disposal.

The greatest improvements will be felt in transport and accessibility, the legacy of the 2012 Olympic and Paralympic Games, the built environment, mitigating climate change, and the way in which the Plan is delivered across the sub-regions.

Given the assessment shows that there are no discernable significant negative effects arising from the alterations, the GLA are not required to adopt further mitigation measures. However, we still believe that the Plan can be made more sustainable and therefore have made further suggestions for the GLA to consider. The SA has already resulted in a number of minor amendments in addition to the alterations that will ensure that the Plan is more likely to create sustainable development within London. It will be essential that monitoring of the plan is undertaken to ensure negative effects do not arise and are left unabated during the implementation of the further alterations.