

**LOCAL IMPLEMENTATION PLAN
APPENDIX A**

STRATEGIC ENVIRONMENT ASSESSMENT

For

PROPOSED LOCAL IMPLEMENTATION PLAN 2010

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SECTION I: INTRODUCTION

- 1.1 Under the requirements of the Greater London Act 1999, all London Boroughs must prepare a Local Implementation Plan (LIP) that demonstrates how the authority intends to implement the objectives of the Mayor's Transport Strategy in its area. The EU Directive 2001/42/EC requires the Strategic Environment Assessment (SEA) of the *environmental* effects of certain plans and programmes on the environment. Transport for London (TfL) have not directed London Boroughs to prepare an Environmental Report on the LIP; however, Greenwich Council has decided to undertake one in the interests of best practice, and ensuring the environment is fully considered in implementing the LIP. Accordingly, this Environmental Report assesses the effects on the environment of the LIP.
- 1.2 Article 1 of the Directive states that its objective 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' (ODPM 2005).
- 1.3 The overall aim of the SEA process is to ensure that environmental impacts are taken into account at the earliest stages of LIP preparation. Essentially SEA helps to ensure that the Greenwich LIP makes an effective contribution to the pursuit of 'sustainable development', which is widely defined as 'development that meets the needs of the present without compromising the ability of future generations to meet their own needs' (World Commission on Environment and Development, 1987). The UK Government Sustainability Strategy (2005) describes the UK Government's position on sustainable development. The Report details the following five guiding principles to help achieve sustainable development:

Living within environmental limits:	Respecting the limits of the planet's environment, resources and biodiversity – to improve our environment and ensure that the natural resources needed for life are unimpaired and remain so for future generations.
Ensuring a strong, healthy and just society:	Meeting the diverse needs of all people in existing and future communities, promoting personal wellbeing, social cohesion and inclusion, and creating equal opportunity for all.
Achieving a sustainable economy:	Building a strong, stable and sustainable economy which provides prosperity and opportunities for all, and in which environmental and social costs fall on those who impose them (polluter pays), and efficient resource use is incentivised.
Promoting good governance:	Actively promoting effective, participative systems of governance in all levels of society – engaging people's creativity, energy and diversity.
Using sound science responsibly:	Ensuring policy is developed and implemented on the basis of strong scientific evidence, whilst taking into account scientific uncertainty (through the precautionary principle) as well as public attitudes and values.

Objectives and Structure of the SEA Report

I.4 This report encompasses the requirements of the SEA Directive. The report is structured as follows:

Section 1 has provided background information on the preparation of the LIP, the purpose of an SEA Report and the supporting legislative requirements.

Section 2 – Greenwich Local Implementation Plan provides an overview of the LIP prepared in response to the Mayor’s Transport Strategy.

Section 3 – SEA Methodology describes the Strategic Environment Assessment process, consultation conducted, and the difficulties encountered.

Section 4 – Characterisation and SEA framework provides an overview of the character of Greenwich Borough and describes the process for developing the SEA objectives against which the LIP was assessed.

Section 5 – Appraisal of the LIP is the most noteworthy section of this report. The LIP vision is assessed for compatibility against the SEA objectives set out in the framework section. Following this, the LIP as a whole is assessed against SEA objectives. The assessment involves considering the following:

- National, regional, and local level guidance and policy;
- Baseline conditions, existing issues, and likely evolution without the Plan;
- Likely significant effects of implementing the LIP as a whole, taking into account mitigation; and
- Recommendations for monitoring significant effects.

Section 6 – Summary and Conclusions provides a summary of the LIP, the predicted significant environmental effects, and an overview concluding analysis of the main issues of concern in the LIP.

SECTION 2: GREENWICH LOCAL IMPLEMENTATION PLAN

- 2.1 The Local Implementation Plan (LIP) covers the same period as the revised Mayor's Transport Strategy (MTS) and contains specific delivery proposals for the period 2011/12 – 2013/14. The MTS was published in May 2010 and covers the period to 2031. The MTS contains six London wide goals:
1. Supporting economic development and population growth;
 2. Enhancing the quality of life for all Londoners;
 3. Improving the safety and security of all Londoners;
 4. Improving transport opportunities for all Londoners;
 5. Reducing transport's contribution to climate change and improving its resilience; and
 6. Supporting the delivery of the 2012 Olympic and Paralympic Games and their legacy.
- 2.2 The LIP sets out how the Borough proposes to tackle the regional and local transport challenges while ensuring the Borough's assets are protected. The Local Implementation Plan sets out the mid-term objectives and longer term aspirations for delivery of an effective and efficient transportation system in Greenwich. It is based on the social, economic and environmental objectives of the Greenwich Strategy together with other relevant plans, programmes and strategies all of which have implications for transport delivery in the Borough. This is the Second Local Implementation Plan for the Borough (the first covered the period 2006 to 2011).
- 2.3 Accordingly, the draft LIP sets out the current geographic, economic, social and environmental situation in the Borough and the transportation challenges that need to be addressed; and a proposed approach for addressing these challenges.
- 2.4 The objectives of the draft LIP are:
1. Increase sustainable travel capacity and opportunities for trips to and from key growth and employment centres within the Borough
 2. Improve the condition of principal roads (to sit within the top quartile of London roads).
 3. Improve the health of residents by promoting Active Travel – increasing walking and cycling
 4. Increase walking, cycling and public transport access by reducing crime, fear of crime and antisocial behaviour through design and public realm improvements.
 5. Reduce the number of people killed and seriously injured on the Borough's roads, and reduce the overall number of pedestrian and cycle casualties.
 6. Ensure the network enables all residents and visitors to access health, education (including 16+ establishments), employment, social and leisure facilities within the Borough (this includes improving links to Olympic sites and the legacy this provides for the Borough).
 7. Improve transport provision and the quality of the transport environment particularly in areas that show high indices of multiple deprivation.
 8. Reduce Greenwich's contribution to climate change and work to improve the Borough's air quality. (Reduce transport related CO2 emissions, tackle congestion, smooth traffic flow and increase the proportion of trips made by sustainable modes.)
 9. Implement Crossrail complementary measures to allow better access to already committed infrastructure.

10. Continue to promote and support a package of Thames River Crossings (including Crossrail) to improve access to key employment areas and address severance in the East of the Borough.
11. Work towards the implementation of express bus routes both in and beyond the Borough to improve orbital links and journey times for public transport users in the Borough.
12. Improve North/South public transport links within the Borough.

SECTION 3: SEA METHODOLOGY

- 3.1 The European Directive 2001/42/EC (SEA) requires that Plans be subject to a strategic environmental assessment. The purpose of the SEA is to consider the likely significant effects of the Plan on the environment including issues such as population, human health, biodiversity, soil, flora, fauna, water, air, climatic factors, material assets, cultural heritage (including archaeological and built heritage) and landscape.
- 3.2 The purpose of the SEA is not to identify the best option. It is to inform the decision making process, by highlighting the potential implications of pursuing a particular strategy or policy response. Therefore, the findings of this SEA will feed into the adopted LIP thereby making an effective contribution to the provision of ‘sustainable development’.
- 3.3 This report has been both produced and published for consultation alongside the Draft LIP to provide public and statutory bodies with an opportunity to comment on the SEA Report and use it as a reference point in commenting on the Draft LIP.
- 3.4 Table I below outlines the process of producing a SEA report. All of Stage A and Tasks B1 and B2 of Stage B (Scoping Report) have been completed previously. This SEA Report addresses the remaining Tasks in Stage B and Stage C.

Table I: SEA process and outputs

STAGES OF THE SEA REPORT	Outcome
<p>SEA Stage A: Setting the context and objectives, establishing the baseline and deciding on the scope</p> <ul style="list-style-type: none"> ▪ Task A1: Identifying other relevant policies, plans and programmes and sustainability objectives ▪ Task A2: Collecting baseline information ▪ Task A3: Identifying sustainability information ▪ Task A4: Developing the SEA framework ▪ Task A5: Consulting on the scope of the SEA 	Scoping Report
<p>SEA Stage B: Developing and refining options and assessing effects</p> <ul style="list-style-type: none"> ▪ Task B1: Testing the LIP objectives against the SEA objectives ▪ Task B2: Developing the LIP options ▪ Task B3: Predicting the effects of the LIP ▪ Task B4: Evaluating the effects of the LIP ▪ Task B5: Considering ways of mitigating adverse effects and maximising beneficial effects ▪ Task B6: Proposing measures to monitor the significant effects of implementing the LIP 	Strategic Environmental Assessment Report
<p>SEA Stage C: Preparing the Environmental Report</p> <ul style="list-style-type: none"> ▪ Task C1: Preparing the SEA Report 	Strategic Environmental Assessment Report
<p>SEA Stage D: Consulting on the reasonable alternatives of the LIP and SEA Report</p> <ul style="list-style-type: none"> ▪ Task D1: Public participation on the LIP and the SEA Report ▪ Task D2: Appraising significant changes including those resulting from representations ▪ Task D3: Making decisions and providing information 	Further changes to the proposed LIP
<p>SEA Stage E: Monitoring the significant effects of implementing the LIP</p> <ul style="list-style-type: none"> ▪ Task E1: Finalising aims and methods for monitoring ▪ Task E2: Responding to adverse effects 	Annual Monitoring Report

3.5 Table 2 below sets out the requirements of the SEA Directive and where they are covered in the SEA Report on the LIP.

Table 2: Checklist of SEA requirements contained in the Environmental Report

Environmental Report requirements	Section of this Report
a) an outline of the contents, main objectives of the plan or programme and relationship with other relevant plans and programmes;	Sections 2, 5* and Scoping Report (see Appendix 1)
b) the relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme;	Section 5*
c) the environmental characteristics of areas likely to be significantly affected;	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 (The Birds Directive) and 92/43/EEC (The Habitats Directive);	Section 5*
e) the environmental protection objectives, established at international, Community or Member State 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;	Section 5*
f) the likely significant effects on the environment, including on 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;	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;	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 5*
i) a description of the measures envisaged concerning monitoring in accordance with Article 10;	Section 5*
j) a non-technical summary of the information provided under the above headings.	Non-technical Summary (separate report)

* These requirements are met for each SEA Objective topic within Section 5.

Consultation and Approach and Influence of SEA to date

3.6 The Scoping Report was published for consultation over a five-week period from 16 November 2010 and provided a summary of the current environmental, social and economic conditions in Greenwich. This baseline information of the Scoping Report assisted in the development of the SEA Objectives.

3.7 This SEA of the Draft LIP has also been carried out 'in house' by the Strategic Development team of the Council. This team contributes to the strategic development of the boroughs physical, social and economic strategic development with specific focus to regeneration and sustainability. For reasons of impartiality and independence it was considered appropriate for someone outside of the transport planning team to undertake the SEA.

Assumptions and Difficulties encountered

- 3.8 The principal source of difficulty undertaking the SEA is the reliance on the judgement of predicting and assessing effects. However, the SEA has been undertaken by a professional with experience in town planning and sustainability issues, who also produced the Sustainability Appraisal and the Habitats Regulations Assessment (HRA) for the draft Core Strategy. The screening assessment as part of the HRA process on the draft Core Strategy with Development Management Policies did not identify any likely significant adverse effects or impacts on the integrity of any European Sites. It is considered that this is sufficient for the purposes of the LIP.
- 3.9 A further difficulty was the identification of *significant* effects, in particular with reference to those sustainability objectives that result from a very broad range of interacting factors (for example health and health inequalities). Timing and resourcing has been a significant challenge throughout the SEA process.

Next Steps

- 3.10 Both the Draft LIP and this SEA Report are available for public consultation for a period of 6 weeks. Notification of the availability of these documents will be sent to authorities, organisations and individuals likely to have an interest in commenting on the documents. Similarly, a public noticed will appear in the Greenwich Time and on the Greenwich Council website promulgating the availability of documents for public comment. The two documents, along with information on how to comment, will also be available in all libraries of the Borough.

SECTION 4: CHARACTERISATION AND SEA OBJECTIVES

- 4.1 Greenwich has a land area of 5,044 hectares and is the twelfth largest Borough in London. The Borough of Greenwich is located in what was historically south-east London but is now in the east London sub region. It is close to central London and has extensive river frontage (13 kilometres) onto the River Thames. It is part of the East London regeneration area and close to Docklands and the City Airport.
- 4.2 The population of the Borough in 2008 was 236,030. By 2026 the Greater London Authority predicts it will have risen to 281,200 (a 19% increase). The wards seeing the greatest increase in population are West Greenwich, Greenwich East, Peninsula and Thamesmead Moorings and this is a reflection of the amount of proposed developments in the Waterfront area.
- 4.3 Woolwich and Eltham are designated as Major Centres within the London Plan and Greenwich West, Plumstead and Thamesmead are designated District Centres. Greenwich ranks as the 41st most deprived local authority in England and the 10th most deprived in London in terms of the 'extent' of deprivation (Indices of Deprivation, 2007).
- 4.4 The Borough is one of contrasting land uses. Housing comprises the largest use of land; however the Borough also benefits from almost a quarter of its total area being some kind of open space. The southern and eastern parts of Greenwich feature large tracts of the South East London Green Chain. This contrasts with industrial land in the north of the Borough at Thamesmead, at Charlton, and in parts of Greenwich. This contrasts again with the nearby O2 Arena in Greenwich Peninsula which is regarded as one of the most popular indoor entertainment venues in the world. The Borough also has an important historic environment at Greenwich, which is a World Heritage Site, as well as 20 Conservation Areas, nearly 1000 listed buildings, 7 scheduled ancient monuments, a Royal Park and 12 identified local views. Conversely, the Borough also contains areas of poor urban environment and older industrial and commercial areas with environmental problems.
- 4.5 The London Borough of Greenwich has many locational advantages being close to Central London and having an extensive river frontage. It is part of the East London regeneration area and close to Docklands and the City Airport, as well as being on the route between central London and the Channel Tunnel and Channel Ports. The borough has a key location on the navigations and terminals that comprise the Port of London. City Airport and the Channel Tunnel are specifically opening up new international/ pan European markets, which should be advantageous for the borough in attracting inward investment. This will of course, depend to a large extent on continuing investment in transport infrastructure such as Crossrail and new river crossings.
- 4.6 On the whole, Greenwich is poorly provided for in terms of Underground services. Prior to the completion of the Jubilee Line extension and station at North Greenwich, access to the Underground was not directly possible from within the Borough itself. Even with the North Greenwich station, the vast majority of public transport within the Borough is reliant on the provision of buses and trains which are not able to offer the equivalent level of service offered by an Underground Line.
- 4.7 The diverse character of the Borough has given rise to a number of complex spatial issues. Table 3 below summarises what are considered to be the key environmental issues for Greenwich.

Table 3: Key Environmental Issues for the Greenwich Borough

Key Environmental Issues	Source
CLIMATE CHANGE & ENVIRONMENT	
<p>Air Quality The entire Borough of Greenwich has been designated as an air quality management area, with the Greenwich Peninsula also being designated as the first Low Emission Zone in the UK. The Mayor has implemented a Low Emission Zone for London</p> <p>Whilst this is the case, Greenwich still has some areas of concern, which principally occur adjacent to main roads within the Borough.</p>	Greenwich Council Air Quality Action Plan (2002)
<p>Emissions & Excessive Pollution Typically Greenwich's emission output is slightly below that of London.</p> <p>The Climate Change Act commits the UK to reductions in CO₂ emissions of at least 26% by 2020 and a long term goal of an 80% reduction by 2050. It became law in November 2008. Under the Kyoto Protocol, from 2008 to 2012 the UK must reduce its emissions of six major greenhouse gases by 12.5 per cent from 1990 levels.</p> <p>Accordingly the continuing reduction of pollution and emissions is a key environmental issue for Greenwich.</p>	<p>National Atmospheric Emissions inventory</p> <p>SEA Environmental report, Local implementation Plan, Greenwich Borough Council, July 2005.</p>
<p>Renewable Energy Greenwich has a contract to supply 100,000 tonnes of waste to the SELCHP facility in Lewisham. As much of our waste is recycled, we sell parts of this contract to allow other boroughs to dispose of their waste to SELCHP</p> <p>Renewable energy use is increasing across the nation although greater advancements need to be made to improve overall energy efficiency and environmental.</p> <p>To improve renewable energy within Greenwich the Council will be searching for sites to locate new waste management facility that will possibly contribute to renewable energy targets.</p>	Environment Agency position statement on renewable energy
<p>Flood Risk Large tracts of land adjacent to the River Thames are considered susceptible to 1 in 100 year floods with a significant proportion of land adjacent to the Thames being contained within a floodplain.</p> <p>In addition to this the south-west of the Borough in areas such as Kidbrooke and Eltham, are also contained in the Ravensbourne Catchment where additional runoff occurs.</p> <p>The area is protected for 1 in 1000 year flood events by the Thames Barrier and associated defences.</p> <p>This is an environmental issue for the Borough, albeit one in which there is limited control over. However, sustainable urban drainage systems help to restrict runoff.</p>	Greenwich UDP – Adopted July 2006
<p>Waste Management Greenwich has an effective waste management and recycling system that continually outperforms regional and national standards.</p> <p>With a growing population waste management is becoming an ever increasing environmental issue that needs to be considered.</p>	<p>www.defra.gov.uk</p> <p>Greenwich Corporate Performance Plan 2005</p>

<p>Whilst the Council has been at the forefront of sustainable waste management, there are still opportunities to improve the practices and further reduce the Borough's carbon footprint.</p> <p>Part of this progression will be the identification of a number of new locally based waste management sites.</p>	
<p>Water Quality The biological and chemical quality of local water resources within Greenwich has been consistently above the London average since 2000. London's water quality has been slowly declining over the last decade and with continued growth it is becoming a key environmental issue given the potential environmental impacts that could be suffered as a result.</p> <p>A strong emphasis therefore needs to be placed on developmental impacts on local water resources to ensure high standards are maintained and improved where possible.</p>	<p>www.defra.gov.uk/environment/statistics</p>
BIODIVERSITY, OPEN SPACE & RECREATION	
<p>Designated & Wildlife sites For a London Borough, Greenwich has a fairly extensive open space network that incorporates 55 designated sites of importance for nature conservation and two Sites of Special Scientific Interest (SSSI). Whilst this is the case, some areas of the Borough are still identified as lacking accessibility to wildlife sites, namely around Woolwich, north of Kidbrooke and New Eltham.</p> <p>The continued protection of these areas is an environmental issue for the Borough, particularly from any pressures or potential adverse affects caused by growth and development.</p>	<p>Greenwich UDP – Adopted July 2006</p>
<p>Open Space Open space constitutes almost a quarter of the Borough's total land area and incorporates a variety of different types of spaces from local woodlands to large formal parks and commons. There is a major swathe of Metropolitan Open Land stretching through the central, eastern and southern parts of the Borough and forming part of an area known as the 'Green Chain'.</p> <p>In terms of average open space provision there is no deficiency within the Borough. However, the geographical distribution of open spaces means that there are some accessibility issues within certain parts of the Borough such as areas of Eltham, Woolwich and Thamesmead.</p>	<p>Greenwich UDP – Adopted July 2006</p>
<p>Walkways & Cycling Whilst the existing network is fairly comprehensive with the likes of the Green Chain network, there are still issues with connectivity, quality of pathways and overall safety.</p> <p>Many of the current walk/cycleway connections in the Borough run along highly trafficked roads increasing potential conflicts with other transport modes and higher possibilities of accidents and fatalities.</p> <p>There is a lack of walk/cycleways within the open space network, improvements can particularly be made along the north-south axis, connecting Eltham and Kidbrooke to Woolwich, Thamesmead and the river. Upgrades are also required along the Thames Path to improve access and connectivity along the entire river front.</p> <p>Quality and safety upgrades to existing paths are also required in some areas. Improved paving, lighting and signage are of particular priority.</p>	<p>Greenwich UDP, Adopted July 2006</p>
CULTURAL HERITAGE & CHARACTER	
<p>Riverfront & Maritime Environment</p>	<p>Greenwich UDP – Adopted</p>

<p>Greenwich's frontage to the River Thames is a unique feature that plays a big part in the Borough's identity. The riverfront exhibits a variety of significant natural and historical attributes including the Maritime Greenwich World Heritage Site, spaces such as Greenwich Park, the O² Arena and the banks of the Thames.</p> <p>In addition to this the river frontage also has some more functional uses including the existing wharfs and a number of industrial establishments that rely on the river to operate their business successfully. There is also a successful river ferry service serving North Greenwich and Woolwich with the north bank of the Thames and Central London.</p> <p>In some areas accessibility and usability of the river frontage is sub standard at present also. The condition of the river frontage, the number and quality of access points, and the perception of safety, is not entirely conducive to promoting regular pedestrian use.</p> <p>A key challenge facing Greenwich is deciding upon how to maximise the use of the river to best serve the local community whilst not compromising its integrity or usability.</p>	<p>July 2006</p>
HEALTH & WELL BEING	
<p>Deprivation Greenwich's deprivation score rankings suggest that the Borough deprivation situation improved since 2000. Whilst this is the case the Borough is still considered to be the 10th most deprived Local Authority in Greater London.</p> <p>Deprivation directly relates to the quality of life of residents and thus represents a key environmental issue for consideration. Improved access to transport can assist in giving residents access to employment and reducing deprivation.</p>	<p>Office of National Statistics The English Indices of Deprivation (2000, 2004)</p>
<p>Disabled Access Many public transport facilities cater for the disabled but efforts still need be made to ensure this access is maintained and improved. A particular issue is access to buses by disabled persons where the bus has a number of unfolded prams/buggies on board. Drivers are sometimes reluctant to stop to pick up disabled persons.</p>	<p>Greenwich LIP 2007</p>
<p>Crime The number of notifiable offences reported in Greenwich in 2005 equated to 1 offence for 6.9% of the population, which is above the respective London average of 6.07%.</p> <p>Whilst overall crime rates reported in 2001 were significantly lower, it is apparent that the situation has declined in recent years and improvements need to be made with regard to crime in Greenwich.</p> <p>People's perception of transport related crime is a key issue for Greenwich and part of improving the Boroughs overall image as a clean and safe place to come and visit and reside within.</p>	<p>Crimes in England and Wales 2001/02. Home Office. www.neighbourhood.statistics.gov.uk</p>
<p>Traffic Accidents The number of Killed and Seriously Injured persons is a key consideration in the LIP.</p>	<p>Greenwich Road Safety Plan.</p>
POPULATION AND GROWTH	
<p>Population Greenwich is forecast to experience growth over and above the London average up to the year 2016. The population of the Borough was 228,100 in 2005 and is expected to increase to 241,047 in 2011 and 246,616 by 2016.</p>	<p>www.neighbourhood.statistics.gov.uk Greater London Authority 2003 population projections</p>

<p>With such significant growth expected over the coming years, increased pressure will be placed on transport facilities in Greenwich</p> <p>Population growth linked to additional housing will be a key consideration in developing transport plans within the LIP.</p>	
<p>Public Transport</p> <p>The main areas of public transport deficiency are the limited cross river services and links between the north and south of the Borough.</p> <p>The only cross river facilities for non-car owners are the foot tunnels, the Woolwich Ferry and the bus service through the Blackwall Tunnel. The situation has been improved recently with extensions to the Jubilee Tube and DLR services but improvements still need to be made.</p> <p>Public transport connectivity along the north south axis of the Borough also appear to be problematic with less extensive services running in this general direction, (i.e. in comparison to services running on the east west axis).</p> <p>Transport along the east west axis is considered to be fair with reasonable rail and bus connections but with overcrowding as a significant issue. The introduction of Crossrail will help alleviate this problem.</p>	<p>www.neighbourhood.statistics.gov.uk</p> <p>transport statistics for London</p>
ECONOMIC PROSPERITY	
<p>Employment</p> <p>The employment characteristics of Greenwich are generally consistent with that of London with some minor exceptions.</p> <p>Greenwich has a higher unemployment rate than London largely due to the greater proportion of people who are in situations where employment is not a viable option (i.e. students, people who are permanently sick/disabled, retirees etc).</p> <p>The Borough's employment base typically has a lower proportion of people in the upper socio-economic classification such as people filling the managerial or professional occupations. In turn, the area exhibits a higher proportion of people working in the lower supervisory, technical and routing occupations. These statistics suggest a close relationship between GVA and the employment base.</p> <p>The key environmental issue here is not solely associated with employment and socio economic levels, but stems back to the skills and training of local residents and their ability to be able to positively contribute and/or improve the employment base.</p>	<p>www.neighbourhood.statistics.gov.uk</p>

SEA Objectives

4.8 The Scoping Report identified the following environmental Sustainability Objectives and performance indicators as outlined in Table 4 for use in the SEA on the LIP.

Table 4: Sustainability Objectives for use in the SEA

No.	SEA Objectives	SEA Topic Area	Performance Indicators
1	Improve condition and services that engender good health and reduce health inequalities	Population and Human health, Air quality	Number and severity of road casualties
2	Reduce and prevent crime and fear of crime	Population and Human Health	Local crime statistics
3	To encourage the use of more sustainable modes of transport (public transport/cycling/walking), reduce the need to travel and reduce congestion	Population and Human Health	Mode share information
4	Protect and enhance biodiversity, landscapes and the open space network while improving appropriate access to these areas	Biodiversity, Flora and Fauna, Landscape	% of SSSI's in good condition; Length of footpath through open space e.g. Green Chain Walk
5	Protect and enhance water quality and encourage water conservation	Water	Chemical and biological quality of local water systems.
6	To reduce water run off to reduce fluvial and surface water flood risk	Water	Flood zone maps
7	Reduce contamination and safeguard soil quality and quantity	Soil	Number of contaminated sites
8	To improve air quality and reduce levels of transport generated pollution in the form of greenhouse gases, particulates and noise	Air quality	Transport share of greenhouse gas emissions
9	Address climate change by encouraging energy conservation, reducing greenhouse gas emissions, and improving the Boroughs ability to adapt to climate change	Climatic Factors	Percentage of energy from renewable sources.
10	Improve quality of life within the urban environment by providing accessible, well maintained and sustainable transport infrastructure	Material Assets	Road condition indicators
11	Create places, spaces and buildings that are well designed, integrate effectively with one another, respect identified views and vistas, and enhance the diversity and distinctiveness of the local character, including historic, architectural and archaeological features.	Cultural Heritage, Landscape and townscape	Number of town centre improvement schemes; No. of listed buildings, conservation areas and areas of archaeological priority effected detrimentally by transport schemes.

SECTION 5: LIKELY SIGNIFICANT EFFECTS OF THE PROPOSED LIP

5.1 This section sets out the significant effects, identified in the appraisal work on the Draft LIP objectives, and key delivery plan actions. The findings start with an appraisal of the Draft LIP objectives, followed by an appraisal of the key delivery plan actions to the identified issues.

5.2 The SEA Directive states:

‘an environmental report shall be prepared in which the likely significant effects on the environment of implementing the plan or programme, and reasonable alternatives taking into account the objectives and the geographical scope of the plan or programme, are identified, described and evaluated’ (Article 5(1)).

Assessing significance

5.3 The guidance on SEA by the ODPM (2005) states that the significance of environmental effects is a matter for professional judgement. Annex II of the Directive provides a list of criteria that can be used to judge whether an environmental effect is significant. This includes:

‘Characteristics of the effects and of the area likely to be affected, having regard, in particular, to

- *The probability, duration, frequency and reversibility of the effects*
- *The cumulative nature of the effects*
- *The transboundary nature of the effects*
- *The risks to human health or the environment*
- *The magnitude and spatial extent of the effects (geographical area and size of the population likely to be affected)*
- *The value and vulnerability of the area likely to be affected due to:*
 - *Special natural characteristics or cultural heritage*
 - *Exceeded environmental quality standards or limit values*
 - *Intensive land-use*
- *The effects on areas or landscapes which have a recognised national, community or internal protection status.*

Draft LIP Objectives Appraisal

5.4 The strategic objectives of the LIP set out how the Council’s vision for the future of transportation in the Borough will be delivered. These strategic objectives underpin the more detailed local issues and key delivery plan actions; therefore it is necessary to appraise the LIP objectives for compatibility with the SEA objectives. Assessing the relationship between SEA objectives and the high level strategic objectives will help identify whether the transportation vision for Greenwich is in accordance with sustainability principles. The results of the assessment are presented in Table 5 (next page).

Table 5: Compatibility of Draft LIP Objectives and SEA Objectives

SEA Objectives		Draft LIP Objectives										
		A (sustainable travel capacity)	B (condition of roads)	C (active travel)	D (reduce crime, increase walking)	E (people killed and seriously injured)	F (access to facilities)	G (quality of transport)	H (Climate change and air quality)	I (Crossrail)	J (Thames River Crossing)	K (express bus routes)
1 (health)	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
2 (crime)	Not related	Not related	Compatible	Compatible	Compatible	Compatible	Compatible	Not related	Not related	Compatible	Not related	Not related
3 (sustainable modes of transport)	Compatible	Compatible	Compatible	Compatible	Uncertain (1)	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
4 (biodiversity)	Uncertain (2)	Not related	Compatible	Compatible	Not related	Uncertain (3)	Uncertain (4)	Compatible	Uncertain (5)	Uncertain (6)	Not related	Not related
5 (water quality)	Not related	Uncertain (7)	Not related	Not related	Not related	Uncertain (8)	Not related	Compatible	Uncertain (9)	Not related	Not related	Not related
6 (Run off)	Not related	Uncertain (10)	Not related	Not related	Not related	Uncertain (11)	Not related	Not related	Uncertain (12)	Not related	Not related	Not related
7 (soil)	Not related	Uncertain (13)	Not related	Not related	Not related	Uncertain (14)	Not related	Not related	Uncertain (15)	Not related	Not related	Not related
8 (air quality)	Compatible	Uncertain (16)	Compatible	Compatible	Not related	Not related	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
9 (climate change)	Compatible	Not related	Compatible	Compatible	Not related	Not related	Compatible	Compatible	Compatible	Compatible/uncertain	Compatible	Compatible
10 (material assets)	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible
11 (townscape)	Compatible/ Uncertain (17)	Compatible	Compatible	Compatible	Compatible	Compatible/ Uncertain (18)	Compatible	Compatible	Compatible	Compatible	Compatible	Compatible

5.5 Table 5 shows that in general the objectives underpinning the proposed LIP are either compatible or have no relation to the SEA framework (sustainability objectives). Uncertainties arise mostly in relation to the provision of transport infrastructure and its potential impact on the natural environment (water quality, run-off, soil quality and quantity, biodiversity and the open space network). Their impact on environmental sustainability will be dependent on implementation and approaches that seek to avoid or mitigate impacts. The notes below explain the uncertainties:

1: Walking and cycling routes must be carefully designed, controlled and managed to ensure pedestrian and cycle safety. A holistic transport planning approach will likely be required to achieve safe and efficient travel for all transport users.

2-6: The provision of increased sustainable travel capacity such as walking and cycling routes must demonstrate due consideration to biodiversity and the landscape network. Increased walking and cycling in open spaces, and associated activities such as recreation and dog walking can have significant adverse effects on species and habitat if not carefully managed. Specific areas may necessitate restricted access to avoid adverse effects on ecology. Essentially, the provision of transport infrastructure proposed in the LIP should not be at the expense of biodiversity, landscape and the open space network.

7-15: Similar to the analysis above; in providing transport infrastructure improvements, due consideration should be afforded to their impact on water quality, surface water run-off and soil quality and quantity. Adverse impacts should be avoided, remedied or mitigated.

16: Potential conflicts may arise from improving the condition of principal roads and achieving improved air quality and reduced levels of transport generated pollution. There is a risk that improved roads may inadvertently influence people to travel by private vehicle (although it is noted that the LIP contains significant emphasis on increasing walking and cycling in the Borough).

17-18: While the LIP does largely have good compatibility with the townscape sustainability objective; some uncertainty arises with respect to archaeological and historic resources, which could be adversely impacts upon by the transport network. For example, to protect historic settings, it may be appropriate to limit vehicle access in close proximity.

Recommendation:

5.6 Given compatibility of a number of LIP objectives to the sustainability objectives is dependent on the nature of implementation; it is recommended that the LIP contains an objective directed at protecting and enhancing key environmental and cultural resources. This would ensure that resources such as water, soil, biodiversity, open spaces and cultural heritage are protected in the provision of all transport related infrastructure. The LIP objective could read as follows:

‘To ensure that transport provision protects and enhances Greenwich’s natural and built resources, including ecosystems, soil, water, air, land and cultural heritage.’

Key Delivery Plan Assessment

- 5.7 A common approach to Strategic Environment Assessments is to assess components (such as policies, actions) individually against each of the SEA objectives, usually in a matrix format. The approach to this SEA is to assess the LIP as a whole. In terms of assessment; this was considered the most appropriate method as it would be misleading to conclude that an individual key action would have a negative impact on an SEA objective when another key action in the LIP has been included to ensure such a negative impact is avoided.
- 5.8 To assist the SEA process on the LIP, it was necessary to first broadly screen the issues and key delivery plan examples (actions) against the SEA objectives to determine whether each was capable of having any significant effect (either positive or negative) on the attainment of any of the SEA objectives. This judgment was based on the subject matter of the issue and action. This screening process identifies which actions to focus on when appraising the effect of the LIP on each of the SEA objectives. The results of the screening exercise are shown in Table 6 and indicate that the achievement of the SEA objectives will largely depend on the sustainability and implementation of a variety of actions, and that most actions interact with a number of objectives.
- 5.9 In accordance with the requirements of the SEA Directive, the appraisal is structured under the following sub-headings:
- Relevant policy objectives (international, national, regional and local).
 - Baseline conditions, existing issues and their likely evolution with the plan.
 - Likely significant effects of implementing the LIP as a whole, taking into account mitigation.
 - Consideration of alternatives.
 - Recommendations for monitoring likely significant effects.
- 5.10 Where appropriate, recommendations to improve the sustainability performance of key delivery plan examples have been proposed. A list of all recommendations made is outlined in Table 11 of Section 6 – Summary and Conclusions.
- 5.11 The assessment of significant effects of the LIP on an SEA objective includes expected magnitude and spatial extent, the timescale over which they will have an effect, their likelihood, the impact of cumulative effects and whether the effect will be temporary or permanent. Taking into account the Plan period (up to 2014) the following approach as been adopted for the timescales:
- Short term: 1 – 2 years
 Medium term: 2 to 3 years
 Long term: More than 3 years
- 5.12 Table 7 summarises the symbols that have been used in the assessment of the LIP to show the significance of likely effects arising from the LIP.

Table 7: Key symbols used in the assessment

Symbol	Meaning
++	Significant positive effect on sustainability objective (normally direct)
+	Minor positive effect on sustainability objective
0	Neutral effect on sustainability objective
-	Minor negative effect on sustainability objective
--	Significant negative effect on sustainability objective (normally direct)
?	Uncertain effect on sustainability objective

Table 6: Screening of LIP issues and actions for potential to impact SEA objectives

		SEA Objectives										
		1 health	2 crime	3 sust travel	4 bio diversity	5 water	6 flood	7 soil	8 air	9 climate	10 material	11 townscape
LIP Issues and Key Delivery Plan Examples	1											
	2											
	3											
	4											
	5											
	6											
	7											
	8											
	9											
	10											
	11											
	12											
	13											
	14											
	15											
	16											
	17											
	18											
	19											
	20											

5.13 Overall, it is considered that nearly all identified LIP issues and key delivery plan actions broadly relate, in some way to health, sustainable travel, improved quality of life, material assets and improved townscape. This contrasts with crime, where only three LIP actions are considered to directly relate to addressing crime and fear of crime. In the middle of these two extremes are actions relating to water, soil and biodiversity. The above table shows that there are fewer LIP actions likely to impact either positively or negatively on the natural environment than the more social objectives such as health, material assets and townscape. However the LIP contains many actions that are likely to have an impact on air quality and climate change. The following sections explore these trends in more detail.

5.1 HEALTH

5.1.1 This section of the SEA relates to the sustainability performance of the LIP against:

- Objective 1: Improve conditions and services that engender good health and reduce health inequalities

5.1.2 To achieve objective 1 the LIP should encourage healthy lifestyles, including the provision of transport choice, encourage walking and cycling as modes of transport reduce the number and severity of road casualties; and promote equal access to community services and facilities that underpin quality of life.

Relevant policy objectives

International Level

Health effects of Transport Related Air Pollution, World Health Organisation 2005 focuses on air pollution related to road transport (mostly from urban and suburban passenger and freight transport) and the risks it presents to human health.

National Level

5.1.3 *Planning Policy Statement 1 Delivering Sustainable Development 2005* promotes developments that deliver safe, health and attractive places to live; address accessibility to health facilities; and support the promotion of health and well-being by making provision for physical activity.

Regional Level

5.1.4 The *draft London Plan 2009* contains several policies on health and transport. In brief, some relevant examples include encouraging patterns of development that reduce the need to travel, improve capacity and accessibility of public transport, walking and cycling; ensuring the potential impact of development proposals on health inequalities it taken into account and promote London as a healthy place for all.

The *Mayors Transport Strategy 2010* seeks to improve health impacts of transport through active travel by the uptake of physically active modes of transport will promoted through information campaigns, travel planning, training and improved infrastructure including cycle hire schemes and Cycle Superhighways. The Mayor also aims to ensure that new developments are planned in such a way as to increase the attractiveness of walking and cycling is also important.

Baseline conditions and existing issues

5.1.5 Greenwich residents face significant challenges in terms of poor health. Some communities in the Borough experience better health than others, highlighting that inequality does exist. Greenwich ranks as the 41st most deprived local authority in England and the 10th most deprived borough in London. Several of the Borough's 17 wards, primarily in the north of the Borough are in the most deprived 10% of wards in England. These areas of the Borough tend to have higher levels of serious illnesses like coronary heart disease, stroke, cancer, mental health problems and child poverty. Just 8.7% of adults in Greenwich are physically active (as defined by NHS), compared to the England average of 11.6% (NHS, 2007).

5.1.6 Greenwich has a high percentage of homeless households with the number of occurrences being approximately 30% higher than London's average and double that of the national average. Greenwich also has a higher proportion of children who live in a household dependent on a means-tested benefit.

- 5.1.7 While the resident age profile is generally similar to that of the rest of London; it appears that Greenwich has more people in the young (16 years and less) and older (65 years and more) age groups. These groups are predicted to increase in the future, and can increase in retirees and young people within the Borough which will have an effect on the demand for local facilities and services.

Likely future evolution without the Plan

- 5.1.8 The upcoming Core Strategy contains various policies that seek to improve people's health in the borough, by encouraging walking and cycling and promoting development in areas accessible to transport hubs and sustainable modes of travel. Nonetheless health is a complex issue that involves multiple lifestyle and socio-economic factors, including many other organisations (e.g. NHS, PCT). Therefore, although the LIP provides significant opportunity to improve the health of Greenwich residents; it is likely that health would be otherwise improved in the absence of the LIP.

Assessment of Actions

Likely significant effects of implementing the proposed LIP actions as a whole, taking into account mitigation

- 5.1.9 It is considered that almost all the key delivery plan examples presented in the LIP have some sort of relationship or impact on health.
- 5.1.10 Several key delivery plan actions seek to improve access to public transport, access to services and access to employment in the Borough. For example, additional river crossing for vehicles (although delivery of one is unexpected in this LIP period) will likely offer positive mental health benefits in terms of accessibility to other areas of London for employment. However, equally, an additional river crossing may increase the number of vehicles on the road, both from residents and those from outside of the Borough, and this would have a negative effect on air quality, and therefore health of people in the Borough, particularly those living along main arterial routes. Currently the transport network in Greenwich is extremely sensitive to the operation of the Blackwall Tunnel. Greenwich has little resilience if disruption occurs, causing severe congestion across the entire network. Accordingly, should an additional river crossing be delivered; while this may increase the number of vehicles on the road, effects of this need to be weighed against the positive effects (including efficiency and reduced PM10 emissions) arising from reduced congestion and increased public transport provision.
- 5.1.11 Improvements to bus provision should include consideration of specialised public transport, such as kneeling buses or raised kerbs for disabled and elderly passengers, especially in deprived areas. Overcrowding on buses and other public transport can also result in increased stress, contributing to poorer health conditions and affect uptake of public transport use as can increased fares. Similarly, lack of public transport can also create feelings of social isolation and physical inaccessibility. This is particularly relevant in terms of north/south connections, and if disregarded in the redevelopment of Charlton Riverside, will likely result in significant adverse effects in health and equality over the long-term for residents. It is recommended that review of bus provisions address overcrowding and accessibility, in particular provision for public transport in the waterfront area.
- 5.1.12 The LIP contains effective actions to help improve air quality in the Borough. Such actions include the promotion of smarter travel and achieving modal shift from single occupancy vehicle journeys, marketing of sustainable travel in schools, cycle training, delivery/freight plans for developments as part of their planning approval, provision for on-street electric

vehicle charging points, and the expansion of car clubs. It is recommended that car clubs are encouraged and incentivised to use hybrid, low carbon or electric vehicles as technology advances.

- 5.1.13 Noise can have a considerable impact on people's health. The LIP seeks to minimise such adverse effects by discouraging private vehicle use, encouraging walking, cycling and use of modern vehicles, and reducing congestion. Low noise road surfacing and well-maintained and designed road infrastructure also contribute to reducing noise impacts. It may be appropriate for the Council to encourage home owners of main arterial routes to install triple glazing windows as a measure to reduce noise from road traffic.
- 5.1.14 Maximising to full effect the health benefits of walking and cycling; the LIP, in partnership with the Primary Care Trust, propose to fund a travel planner post to promote smarter and active travel, and tackle obesity, with a particular focus on children. This has potential to have significant positive effects on the health of residents and children of the borough.
- 5.1.15 It is well documented that access to, and use of open spaces has significant mental, spiritual and physical health benefits. Therefore, creating walk and cycle ways in, and connecting to, open spaces will likely result in significant positive effects on people. However, adverse effects on biodiversity, soil and water will need to be carefully considered and mitigated.
- 5.1.16 Reducing the need to travel, 20mph zones, traffic calming measures and discouraging use of private vehicles, all seek to improve road safety and minimise killed or seriously injured casualties, providing conditions that engender good health and result in significant positive health effects.
- 5.1.17 Actions that seek to improve streetscape, the public realm and improve accessibility are also likely to have indirect positive effects on health by facilitating an environment in which people are more likely to walk. Secondary effects also result in reducing crime and fear of crime. In delivering improved accessibility, it is recommended that due consideration is given to how people walk and use footpaths, rather than how planners would like them to move and walk. For example, it is recommended that wayfinding in the Borough is improved to limit use of physical fences/barriers which in reality people often disregard, which in turn can put people at risk of injury. Other mechanisms such as reduced vehicle speeds may be more appropriate.

Alternatives

Alternative interventions identified in the Scoping Report include:

- Local congestion charge;
- Use of 'Community Speedwatch Volunteers' to help reduce speeds; and
- Do nothing

Imposing a local congestion charge may reduce the number of vehicles on the road, which in turn may reduce the number of people killed and seriously injured. However, compared to proposed actions such as increased use of sustainable forms of transport and 20mph zones; it is considered that a local congestion charge is not as effective in achieving SEA Objective I. Use of Community Speedwatch Volunteers may provide some positive effects, and prove a useful tool; however it is considered that such a scheme may be unreliable, and the same effect would be better achieved through design measures, police enforcement and technology such as speed cameras.

To do nothing is not considered a viable alternative to achieving SEA Objective I.

Summary of Actions

5.1.18 Overall, and taking into account the criteria outlined in the Scoping Report of the SEA objectives, it is likely that the LIP will have a positive effect on the existing baseline and in improving conditions and services that engender good health and reduce health inequalities.

Assessment of effects of the Core Strategy on SA objective	Score (without recommendations/mitigation)	Score (with recommendations/mitigation)	Justification of Score	Timescale and probability Short: 1-2 years Med: 2-3 years Long: > 3 years	Permanent or temporary
Improve conditions and services that engender good health and reduce health inequalities	+	++	Health is influenced by a wide range of factors, many of which are beyond the remit of a LIP. However, to the extent that transport can play a part, it is considered that overall the proposed LIP will have significant positive effects on the health objective and existing baseline conditions, in particular addressing accessibility, obesity and improved air quality. However, to achieve a real improvement in numbers of people walking in the Borough, it is considered that wayfinding and the behavioural aspects on how people actually walk, cycle and move must be taken into account.	In terms of the LIP, it is considered that positive effects will be evident in the short term, with regards to initiating behavioural change in schools and workplaces through travel plans. Improvements in walking and cycle routes are currently underway, and given 2011 is the Year of Walking it is considered that further improvements and benefits to residents' health will be evident during that year. Improved accessibility in terms of river crossings for vehicles and additional waterfront transport is unlikely in the short to medium term, but funding and lobbying for such necessary transport is underway and likely to continue until there is commitment from TfL.	Physical improvements are likely to be permanent and ongoing; continued behavioural changes in terms of sustainable travel is more uncertain and dependent on maintained infrastructure, safety and costs with respect of public transport.

Recommendations for monitoring likely significant effects

5.1.19 It is recommended that the following indicators are used to monitor the effects of the LIP identified in the SEA:

- Life expectancy
- Number of people who regularly use walking and cycling as their mode of transport
- Air quality in the Borough
- Number of Killed or Seriously Injured in the Borough

5.2 CRIME

This section of the SEA relates to the sustainability performance of the LIP against:

- Objective 2: Reduce and prevent crime and fear of crime

5.2.1 The causes of crime and vandalism are complex but it is widely accepted that environmental factors can play a part. The transport system can be instrumental in producing attractive and well-managed environments that can influence the level of criminal activity, anti-social behaviour and perception of crime. To achieve Objective 2 the LIP should reduce crime and fear of crime on and around public transport hubs and minimise opportunities for graffiti and vandalism.

Relevant policy objectives

National Level

5.2.2 The *Crime and Disorder Act 1998* imposes a duty on the Council to have regard to the crime and disorder implications of its decisions and the need to do all it reasonably can to prevent crime and disorder in its area.

5.2.3 '*Safer Places - The Planning System & Crime Prevention*' 2004 is a guide that encourages greater attention to the principles of crime prevention and to the attributes of safer places.

5.2.4 *Planning Policy Statement 1: Delivering Sustainable Development 2005*- encourages robust policies on design and access including the creation of safe and accessible environments where crime and disorder or fear of crime does not undermine quality of life or community cohesion.

Regional Level

5.2.5 The *draft London Plan 2009* encourages development consistent with the principles of 'Secured by Design', 'Designing out Crime', and 'Safer Places'.

The *Mayor's Transport Strategy 2010* proposes that the mayor and TfL will work with police to implement an integrated reporting system for anti-social behaviour, crime and disorder on the transport network. Visibility and availability of police in the right places will help to reduce crime and fear of crime, as will designing out crime and improving road safety.

Baseline conditions and existing issues

5.2.6 Overall, average crime rates within Greenwich are significantly higher than both the England and London averages. Therefore this needs to be addressed, and regeneration in the Borough including new transport infrastructure provides good opportunity to reduce crime and fear of crime.

5.2.7 While notifiable offences recorded by police decreased in the year 2008-09 on the 2007-08 year figure; crime in Greenwich per 1000 population remains higher than the London average as Table 8 below illustrates.

Table 8: Recorded offences in Greenwich compared to wider London

Offence	% change 07/08 - 08/09	Number of offences per 1000 population - Greenwich	Number of offences per 1000 population - wider London
Violence against the person	-7%	30	23
Robbery	-17%	5	4
Burglary in a dwelling	-3%	9	8
Theft of a motor vehicle	-20%	5	4
Theft from a vehicle	0%	14	10

Likely future evolution without the plan

5.2.8 People's perception of crime is a key issue for Greenwich and significant effort need to be made toward improving the Boroughs overall image as a clean and safe place to come to visit and reside within. Crime is a complex issue that involves multiple lifestyle ad socio-economic factors. Addressing these is the target of other organisations, most notably the police and education sectors. Therefore, crime rates will likely be addressed without the LIP.

Assessment of Actions

Likely significant effects of implementing the draft LIP actions as a whole, taking into account mitigation

5.2.9 The main key delivery plan actions relevant to the achievement of SEA Objective 2 are those associated with the following Issues in the LIP:

- Issue 8 – Improving journey experience
- Issue 13 – Poor lighting, visibility and security
- Issue 15 – Perception of crime on transport network

5.2.10 In so far as it can, it is considered that the LIP does incorporate measures to reduce crime and fear of crime around public transport interchanges and hubs and on the transport system itself. Such measures include physical 'designing out crime' techniques, and behavioural social marketing for consideration of others when travelling. Improved lighting, design, and secure storage for bicycles are all measures that are likely to result in significant positive effects on reducing crime and fear of crime at transport hubs. It is recommended that transport hubs and interchanges are appropriately maintained to reduce graffiti and associated secondary effects causing fear of crime. Indeed materials should be used to mitigate the likelihood of graffiti occurring. Appropriate positioning of CCTV is also recommended. It is considered that the introduction of a 'dispersal zone order' as enforced at the Woolwich Town Centre may also be effective in achieving SEA Objective 2. A street lighting programme should ensure safe night-time walking and cycling routes while avoiding excessive light pollution. In open space areas, vegetation and lighting management may be necessary to ensure visibility, while reducing adverse impacts on biodiversity and the landscape. The programme should also include sensors that use less power (street lighting) and increased use of LED lighting at minimal wattage necessary to minimise carbon emissions.

5.2.11 It is also considered that increasing activity and movement across the Borough through walking and cycling, and passive surveillance through improved town centre activity, also contributes to reducing crime and fear of crime. However, it is recommended that a key delivery plan example should be included that commits the Council working with Metropolitan Police and other relevant stakeholders to provide information on various security options for cyclists, such as watermarking, good lock techniques, choice of locks and secure cycle storage in housing estates.

Alternatives

Alternative interventions identified in the Scoping Report include:

- Increased CCTV installation; and
- Do nothing.

It is considered that increased and well positioned CCTV installation is an effective method in conjunction with designing out crime measures, and would likely result in reduced crime and, in particular, fear of crime.

To do nothing is not considered a viable or sustainable option in achieving SEA Objective 2.

Summary of Actions

5.2.12 Overall, it is likely that the LIP key delivery plan actions will have a positive effect on the existing baseline and in reducing and preventing crime and fear of crime in and around transport hubs.

Assessment of effects of the Core Strategy on SA objective	Score (without recommendations/mitigation)	Score (with recommendations/mitigation)	Justification of Score	Timescale and probability Short: 1-2 years Med: 2-3 years Long: > 3 years	Permanent or temporary
Reduce and prevent crime and fear of crime	+	++	<p>Crime is influenced by a wide range of factors, many of which are beyond the remit of a LIP. However, to the extent that the LIP can play a part, it is considered that overall the proposed LIP will have significant positive effects on crime both in and around transport infrastructure. This is because of the design controls for transport developments (such as Secured by Design, Designing out Crime and Safer Places), rejuvenation and encouragement of activity in town centres, provision of secure bicycle storage, and improved lighting. It is recommended that in planning transport provision, the Council works closely with Metropolitan Police, in particular for ways to educate cyclists on safer and more secure storage of the bicycles. Similarly, it is recommended that the introduction of 'dispersal zone orders' should be explored for their use at public transport hubs.</p>	<p>Crime prevention through environmental design is a well recognised and effective planning tool for addressing crime prevalence and opportunity. Therefore, in so far as transport planning can control, it is likely that there will be reduced crime, and fear of crime as a result of appropriate design measures being incorporated into transport developments as they occur. The majority of positive effects are likely to be evident in the medium to long term; as funding is secured for physical improvement measures, although some changes may already be evident with the redevelopment of Woolwich and Greenwich town centres and their transport interchanges.</p>	Permanent and requiring ongoing maintenance.

Recommendations for monitoring likely significant effects

5.2.13 It is recommended that the following indicators are used to monitor the effects of the LIP identified in the SEA:

- Number of crimes reported in and around transport hubs
- Number of CCTV installed in and around transport hubs
- Number of cycle thefts in the Borough

5.3 SUSTAINABLE MODES OF TRAVEL/REDUCED NEED TO TRAVEL

This section of the SEA relates to the sustainability performance of the LIP against:

- Objective 3: To encourage the use of more sustainable modes of transport (public transport/cycling/walking), reduce the need to travel and reduce congestion.

5.3.1 To achieve objective 3, the LIP should encourage healthy lifestyles, including the provision of transport choice and encourage walking and cycling as modes of transport.

Relevant policy objectives

National Level

5.3.2 *Planning Policy Statement 1 – Delivering Sustainable Development (2005)* contains a number of references on reducing the need to travel. Development should be focused in existing centres and around public transport interchanges to reduce the need to travel by private vehicle. Accessible public transport provision should also be encouraged.

Regional Level

5.3.3 The strategic approach of integrating transport and development in the *draft London Plan (2009)* is to encourage patterns of development that reduce the need to travel, especially by car. Improved capacity and accessibility to public transport, and walking and cycling paths should be encouraged. Policy 6.2 requires boroughs to ensure the provision of sufficient land, suitably located, for the development of an expanded transport system to serve London's needs. Policy 6.3D states that boroughs should facilitate opportunities to integrate major transport proposals with development in a way that supports London Plan priorities.

The *Mayor's Transport Strategy 2010* contains a number of measures to encourage sustainable modes of travel and reduce the need to travel. These include enhancing the rail network by committing to Crossrail and better integration of suburban rail with TfL services; delivering a cycling revolution by improving infrastructure (such as more secure cycle parking and special cycle routes), providing better information and training and by using the Mayor's planning powers to make cycling an easier and more attractive option. Coverage of the Mayor's Cycle Hire Scheme may be extended in the future. The Mayor also proposes to improve the quality and provision of information and resources to facilitate more walking journeys, and to improve the urban realm to create safer, more comfortable and attractive conditions.

Baseline conditions and existing issues

5.3.4 The Borough is reasonably well connected radially to central London and Kent by mainline trains and locally by buses. The north of the Borough has fair transport links and benefits from connections to the London Underground, Docklands Light Railway (DLR) and river transport services, although the south of the Borough needs improved links to employment areas. Also, the lack of river crossings for vehicles causes severance between the Borough and areas to the north of the Thames. The Borough also gets a lot of through traffic, where journeys start and end outside of the Borough.

5.3.5 Nearly 25% of travel to work by Greenwich residents is by train, and just over a third (34%) travel by car or van to work. Proportionally, the Underground is not used by Greenwich residents as much as it is elsewhere in London. This is because there is only one Underground station serving the Borough – North Greenwich. Alternatively, a higher proportion of people in the Borough travel to work by bus compared to the London average.

- 5.3.6 People in Greenwich tend to travel considerable distances to get their workplaces. Thirty percent of residents travel between 10km – 20km, compared with twenty percent for the London average.
- 5.3.7 Nearly half of all households in the Borough (49%) do not have access to private motor transport and therefore public transport is an essential form of travel for a large proportion of residents. The main areas of public transport deficiency are the limited cross river service, links between north and south in the Borough, and Thamesmead. Until recently, the only cross river facilities for non car owners were the foot tunnels, the Woolwich Ferry and the bus service through the Blackwall Tunnel. The situation has improved by the completion of the Jubilee Line extension to North Greenwich and the DLR extensions to Greenwich, Lewisham and Woolwich Arsenal.

Likely evolution without the Plan

- 5.3.8 Without the LIP it is considered that future transport projects necessary to the Borough (such as additional vehicle river crossing and improved public transport in the waterfront area) will be at increased risk of being totally relinquished despite demand for the infrastructure. In terms of other modes of transport, it is considered that walking and cycling may become more popular through promotion by other organisations and programmes such as the NHS, Year of Walking 2011, possible expansion of the Barclays cycle hire scheme, and increased fuel and public transport costs in times of increased economic hardship. The Council’s draft Core Strategy contains robust policies to ensure patterns of development enable reduced need to travel, for example, higher densities should be located around existing public transport hubs.

Assessment of Actions

Likely significant effects of implementing the draft LIP actions as a whole, taking into account mitigation

- 5.3.9 It is considered that most key delivery plan actions outlined in the LIP are relevant to the achievement of SEA Objective 3. The emphasis of the LIP is on increasing use of sustainable modes of travel, in particular walking, cycling and use of public transport. There are a number of actions that aim to achieve this, including new and improved walking and cycling routes, improved streetscape and safety, increased bus capacity and improved links to Queen Elizabeth Hospital, provision of cycle parking and storage, subsidies for the fast ferry Woolwich extension, pedestrianisation of part of Greenwich town centre, preparation of travel plans, and cycle training for children and adults. Essentially the LIP seeks to facilitate an environment and transport infrastructure that favours active travel as viable alternatives to private vehicle use.
- 5.3.10 It is considered that the provisions within the LIP are likely to result in significant positive effects on achieving SEA Objective 3; however, it is recommended that in designing new walk and cycle ways, and in improving streetscape, due consideration is given to how people walk and find their way. It may be that the more traditional methods of transport planning with respect to pedestrians and cyclists are no longer appropriate or effective (for example, use of physical barriers keeping people away from roads and use of traffic calming measures. Unrestricted pedestrian movement, reduced through traffic, and 20mph speed limits may be more effective mechanisms). Excessive use of railings can result in complicated and cluttered spaces that frustrate pedestrians, to the point where railings may be ignored and personal safety is put at risk.

- 5.3.11 In order to more efficiently reduce congestion in the Borough; an additional river crossing for vehicles is considered necessary, especially given most vehicle journeys originate and terminate outside of the Borough. There is no confirmed funding or commitment from TfL or the Mayor of London. Therefore, it is important that the Council continues to lobby for additional connectivity with the North of the Thames which will likely result in significant positive social and economic effects for the Borough. Reducing congestion in the Borough (that inevitably results through delays in the Blackwall Tunnel) will result in improved air quality, and amenity of residential areas, and reduce noise and surface water run-off pollution emanating from exhausts of occupied stationary vehicles.
- 5.3.12 Imposing 20mph zones allows for the safe mixing of motorised and non-motorised modes of transport and makes it easier for pedestrians and cyclists to enjoy the same direct and safe routes for their journeys as motorists. There is evidence from Europe that lower speed limits encourage walking and cycling (Atkins 2001). Therefore, it is recommended that the use and extent of proposed 20mph zones in the Borough is reassessed to maximise the likelihood and attractiveness of walking and cycling as modes of transport for all people to use.
- 5.3.13 The LIP explicitly states there is a maintenance programme for the roading network, but it is unclear whether walk and cycle ways will be maintained to the same extent. Smooth, clean pavements contribute to creating an environment people want to walk in, and intend to keep walking in. Therefore, it is recommended that the LIP makes appropriate provision for the continued maintenance and improvement of walking and cycling routes. It is also recommended that where possible, materials for road maintenance, and walking and cycling paths incorporate use of local sourced and/or recycled resources.
- 5.3.14 Improvements to the town centres and squares of Greenwich and Woolwich are likely to result in significant positive effects on the uptake of walking.
- 5.3.15 Charlton Riverside is identified in the draft London Plan as an Opportunity Area. Accordingly, the Council's preferred spatial strategy of the draft Core Strategy for the Borough is to allocate approximately 6,000 new dwellings in this area, which is also earmarked for mixed use development. However, the area is not well connected to public transport infrastructure and there is no confirmed funding or commitment for additional transport by TfL or the Mayor of London. Spatially, Charlton Riverside is well positioned in its potential for accessibility and connectivity to Greenwich Peninsula and North Greenwich London Underground station to the east, and Woolwich town centre to the west. Should this development go ahead and without adequate provision of public transport servicing the waterfront area; due to this poor accessibility there is a very real risk the area will become isolated and fragmented from community services and facilities offered in the Borough. It is likely that significant adverse effects will result from increased use of private vehicle use. Thus, it would be unlikely there would be a reduced need to travel, and little likelihood that those in Charlton Riverside would be able to easily use sustainable modes of transport.

Alternatives

Alternative interventions identified in the Scoping Report include:

- Commuter parking charges;
- Control of parking supply;
- Peak hour contra flows; and
- Do nothing.

It is considered that the proposed interventions as outlined for action in the LIP more appropriately encourage use of sustainable modes of transport and reduce congestion.

Increasing parking charges and limiting the number of car-parks are considered disincentives and while these may assist in reducing the number of vehicles on the road; it is considered that this is not a positive or effective way of achieving SEA Objective 3 long-term. Promoting walking and cycling is a more likely long-term approach to changing travel behaviour, with the added benefit of improving health and well-being.
To do nothing is not considered a viable alternative.

Summary of Actions

5.3.16 Overall, it is likely that the LIP key delivery plan actions will have a positive effect on the existing baseline and in increased use of sustainable modes of transport, reduced need to travel and reduced congestion.

Assessment of effects of the Core Strategy on SA objective	Score (without recommendations/mitigation)	Score (with recommendations/mitigation)	Justification of Score	Timescale and probability Short: 1-2 years Med: 2-3 years Long: > 3 years	Permanent or temporary
To encourage the use of more sustainable modes of transport (public transport/cycling/Walking), reduce the need to travel and reduce congestion.	+/?	++/?	The emphasis of the LIP is on promoting sustainable forms of travel, in particular encouraging more walking and cycling in the Borough. Public transport use is proposed to be made more attractive, through actions seeking to tackle crime and fear of crime around and on public transport infrastructure. The LIP also seeks to make walking and cycling safer through improved lighting, design of path and cycleways, and availability of secure storage for cycles at transport stations. However, uncertainty lies in the delivery of additional public transport infrastructure in the waterfront area, and an additional vehicle river crossing. Localised significant adverse effects on air quality, accessibility, social inclusion, and health are likely to arise from lack of public transport infrastructure servicing Charlton Riverside, once redeveloped for mixed	The delivery of an additional river crossing for vehicles and public transport infrastructure is unlikely in short to medium term; however it is expected that during this time the Council will continue to lobby for these infrastructure. In the case of Charlton Riverside; as development proceeds, infrastructure delivery may become more likely. Nonetheless both forms are dependent on funding, and given the public sector cuts and current recession, the outlook for delivery remains depressed until at least the long term. Conversely, it is considered likely that walking and cycling should increase in the Borough, as budgets allow for	Effects emanating from the lack of delivery of river crossings and infrastructure in Charlton Riverside are uncertain in their timescale as they depend upon external commitment and funding to deliver the projects. Positive effects regarding walking and cycling are expected to be permanent, although there may be some temporary adverse environmental effects related to their construction.

			use development. Until an additional river crossing is provided, it is unlikely that congestion resulting from delays in the Blackwall Tunnel will be minimised, given most is through traffic.	enhancements and training for cyclists from 2009/10 to 2013/14 and there are various walking improvement projects assigned for each year to 2013/14. However, behavioural changes may not occur until the medium term (dependent on implementation).	
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Recommendations for monitoring likely significant effects

5.3.17 It is recommended that the following indicators are used to monitor the effects of the LIP identified in the SEA:

- Number of people using public transport in the Borough
- Number of people participating in walk to work and work to school schemes
- Number of regular cyclists and walkers to destinations.

5.4 BIODIVERSITY AND LANDSCAPES

This section of the SEA relates to the sustainability performance of the LIP against:

Objective 4: Protect, restore and enhance biodiversity, landscapes and the open space network while improving appropriate access to these areas.

- 5.4.1 To achieve this objective, key delivery plan actions should protect habitats and species, particularly those considered to be important and provide opportunities for the creation of new habitats and links between existing habitats. LIP actions should therefore reduce habitat fragmentation. The integrity and quality of European Sites should not be compromised by the LIP or transport development in the Borough.
- 5.4.2 Specifically designated wildlife sites, sites of special scientific interest, local and metropolitan open spaces and the green chain should be protected.

Relevant policy objectives

International Level

- 5.4.3 The *Directive 92/43/EEC* on the Conservation of Natural Habitats and Wild Flora and Fauna – the ‘Habitats Directive’ provides legal protection for habitats and species of European importance. It requires the maintenance or restoration of habitats and species of interest to the EU in a favourable condition.

National Level

- 5.4.4 *Working with the grain of nature: a biodiversity strategy for England (2002)* sets out the Government’s vision for conserving and enhancing biological diversity in England, together with a programme of work to achieve it. It includes the broad aim that planning, construction, development and regeneration should have minimal impacts on biodiversity and enhance it wherever possible.
- 5.4.5 *Planning Policy Statement 9 – Biodiversity and Geological Conservation (2005)* states that planning policies should aim to maintain, and enhance, restore and add to biodiversity and geological interests. Plan policies on the form and location of development should take a strategic approach to the conservation, enhancement and restoration of biodiversity and geology, and recognise the contributions that sites, areas and features, both individually and in combination, make to conserving these resources.
- 5.4.6 *Planning Policy Statement 1 - Delivering Sustainable Development (2005)* states that a high level of protection should be given to the most valued landscapes, and requires development plan policies to take account of the impact of development on landscape quality.

Regional Level

- 5.4.7 Policy 7.19 of the *draft London Plan (2009)* covers Biodiversity and access to nature. The policy seeks development make a positive contribution to the protection, promotion and management of biodiversity, including enhancement of London BAP habitat targets and improving access to wildlife sites.

Local Level

- 5.4.8 The aim of the *Greenwich Biodiversity Action Plan (2010)* is to secure the conservation, enhancement and public appreciation of the biodiversity in the London Borough of Greenwich. Six priority habitats and six priority species have been identified for the Borough: acid grassland and heathland; wasteland; water’s edge, river, ponds and wetland;

woodland; gardens; parks and green spaces; bat; black poplar; black restart; hedgehog; stab beetle; and water vole. The forthcoming draft Core Strategy contains a number of policies that seek to protect and enhance biodiversity, green corridors and wildlife habitats.

Baseline conditions and existing issues

5.4.9 Greenwich has a wealth of open spaces with over 1,400 hectares of parks, ancient woodland, Thames side paths and sports pitches, representing 30% of the Borough's total area. There is a major swathe of open spaces stretching through the central, eastern and southern parts of the Borough forming part of an area of Metropolitan Open Land known as the 'Green Chain'. The Green Chain stretches through five of the South East London Boroughs of Bexley, Bromley, Greenwich, Lewisham and Southwark and fulfils a variety of functions including recreational, ecological, historical, amenity and physical break in the urban landscape.

5.4.10 However, while there is limited public open space deficiency in Greenwich; there are still small areas that are more than 1km from an accessible wildlife site. The areas surrounding Kidbrooke, Woolwich and New Eltham primarily have low accessibility to wildlife sites.

5.4.11 There are 55 Sites of Importance for Nature Conservation (SINC) in the Borough, of which two are Sites of Special Scientific Importance. Forty per cent (2008/09) of these sites are in active management, ensuring the protection and enhancement of those areas. There has been no change to SINC designations since 2006/07 and no land with a SINC has been lost to permitted or completed development in 2007/2008.

Likely evolution without the Plan

5.4.12 It is likely that biodiversity will improve in the absence of the LIP. This is because the current UDP and forthcoming Core Strategy contain provisions to take into account the presence of protected or priority species and their habitats in planning applications. They also contain policy protecting designated Sites of Nature Conservation Importance. International, National and Regional policies seek to protect sites, and habitats and species of importance at the international, national and regional scales. Council plans, strategies and development proposals also need to have regard to the Greenwich Biodiversity Action Plan, which seeks to protect and enhance priority habitats and species to the Borough.

Assessment of Actions

Likely significant effects of implementing the proposed LIP as a whole, taking into account mitigation

5.4.13 The main key delivery plan actions relevant to the achievement of SEA Objective 4 are those associated with the following Issues in the LIP:

- Issue 3 - river crossing
- Issue 10 – air quality
- Issue 12 – health
- Issue 17 – access
- Issue 18 – CO₂
- Issue 19 – climate change
- Issue 20 – Olympic legacy

- 5.4.14 While it is considered that in the long term the LIP will have an overall positive effect on the achievement of SEA Objective 4; there are areas of concern that should be taken into account in implementing the LIP. First, while it is commendable that the LIP promotes a modal shift to increased walking and cycling; it is considered that in 'providing the environment' for these alternatives and 'ensuring there is a local transport network which facilitates movement', due consideration must be given to biodiversity and the open space network. Fragmentation of habitats, green corridors and removal or damage of existing vegetation should be avoided in creating cycle and walking paths. Creation of new cycle and footways should be sensitive to the surrounding natural environment, and where possible should take opportunity for habitat creation and enhancements. Public realm improvements (such as street tree planting) should be selected for their merits in contributing to biodiversity (and be adaptable to climate change), and where possible designed in a way that creates new green networks. Construction of such new foot and cycle-ways may result in slight adverse effects in the short-term; however long-term indirect positive effects on biodiversity should result from reduced private vehicle use (cleaner air) and green enhancements of the public realm.
- 5.4.15 Indirect positive effects on biodiversity are also likely to result from LIP actions that seek to reduce the number of private vehicle journeys and encourage electric car and public transport use, by reducing levels of particulates and chemicals from the road surface entering the water system by run-off. Conversely, the LIP seeks to maintain and improve the road network, which may potentially encourage private vehicle use. However, it is considered that adverse effects from this are likely to be outweighed by the positive effects arising from the sustainable transport measures.
- 5.4.16 Uncertain effects on biodiversity may arise from changes in road drainage and surfacing materials in response to addressing expected climate change. It is recommended that in determining drainage and materials under the road maintenance programme, that impacts on the natural environment, including water, biodiversity and soil, are carefully considered to avoid or mitigate significant adverse effects. Similarly, while cross river actions in this LIP seem limited to lobbying and it is unlikely a new river crossing for vehicles will be constructed in the timeframe of this LIP; in the event of any such commitment and initial design, it is recommended that adverse impacts on biodiversity and the open space network are minimised and mitigated.
- 5.4.17 It is recommended that actions in response to issue 17 should include movement from residential areas to open space and wildlife sites. In particular, implementation of this should focus on those areas (Kidbrooke, New Eltham and Woolwich) that have been identified as having low accessibility to wildlife sites and is also a key sustainability issue for the Borough. However, construction of any such cycle and walking paths must be sensitive to the local natural environment. For example, it may be necessary to restrict dog-walking and other activities that could disturb wildlife, and barriers may be appropriate to protect certain habitats and species. It is recommended that the LIP adopts a 'no net loss' approach to biodiversity and open spaces.
- 5.4.18 To support the proposed natural environment objective as recommended previously; it is considered that a further issue and set of key delivery plan examples that encapsulates the above recommendations should be included under MTS Challenge 5: Enhancing the built and natural environment.

Alternatives

No relevant alternatives identified.

Summary

5.4.19 Overall, and taking into account the criteria outlined in the Scoping Report of the SEA objectives, it is likely that overall the LIP will have a positive effect on the existing baseline and in protecting and enhancing biodiversity, landscape and the open space network.

Assessment of effects of the LIP on SEA objective	Score (without recommendations/mitigation)	Score (with recommendations/mitigation)	Justification of Score	Timescale and probability Short: 1-2 years Med: 2-3 years Long: > 3 years	Permanent or temporary
Protect and enhance biodiversity, landscapes and the open space network while improving appropriate access to these areas	-/?	+	The LIP seeks to improve air quality, reduce private vehicle travel and encourage increased walking, cycling and use of public transport. However, in creating additional walk and cycle ways, due consideration on the effect on biodiversity and open space is necessary to avoid and mitigate adverse effects. By incorporating a LIP objective that seeks to protect and enhance Greenwich's natural environment and adopting a 'no net loss' approach; it is more likely that adverse effects on the attainment of SEA Objective 4 are avoided or mitigated.	Planning policy protects designated sites and open space networks such as the green chain, proving certainty for these areas in both short and long-term. In creating foot and cycle ways they may be slight adverse effects in the short term; however positive effects on SEA Objective 4 are expected in the long-term.	Other than possible temporary short-term effects associated with foot and cycleway creation; positive long terms effects on biodiversity and the open space network will be permanent.

5.5 and 6 WATER QUALITY

This section of the SEA relates to the sustainability performance of the LIP against:

Objective 5: Protect and enhance water quality and encourage water conservation; and

Objective 6: To reduce water run off to reduce fluvial and surface water flood risk

- 5.5.1 To achieve these objectives, the LIP should aim to improve water quality of rivers and groundwater supplies; consider highway drainage discharge rates into drains and watercourses and decrease the likelihood of pollutants being discharged into water systems.

Relevant policy objectives

International Level

- 5.5.2 *European legislation on water* including the *Water Directive Framework* aim to achieve 'good' status for all ground and surface water bodies, including coastal waters, by 2027. A useful summary of this legislation is provided in PPS23 Annex I.

National Level

- 5.5.3 *Planning Policy Statement 23 Annex 1* – sets out government priorities and tools for regulating and protecting water quality. The PPS highlights the difficulty in managing diffuse water pollution, and requires planning authorities to take into account potential for such pollution arising from a proposed development. It also provides support for encouraging developers to incorporate sustainable drainage measures.
- 5.5.4 *Planning Policy Statement 1 – Delivering Sustainable Development (2005)* states local authorities should promote the sustainable use of water resources and the use of sustainable drainage systems in the management of run-off.
- 5.5.5 *Planning Policy Statement 25: Development and Flood Risk (2010)* aims to ensure that flood risk is taken into account at all stages in the planning process to avoid inappropriate development in areas at risk of flooding, and to direct development away from areas at highest risk. Where new development is, exceptionally, necessary in such areas, policy aims to make it safe without increasing flood risk elsewhere and where possible, reducing flood risk overall. The sequential risk-based approach to determining the suitability of land for development in flood risk areas is central to the policy statement and should be applied at all levels of the planning process.

Regional Level

- 5.5.6 The *draft London Plan (2009)* states that proposals that would result in a reduction in water quality in the Blue Ribbon Network should be refused. The Plan also addresses flood risk management (policy 5.12). The policy requires flood risk assessment and management requirements as set out in PPS 25, and have regard to TE2100 and catchment management plans. Developments subject to the exceptions test will need to address flood resilient design and emergency planning.
- 5.5.7 *Thames Estuary 2100 (TE2100)* is a long term flood risk management plan for London and the Thames estuary. It sets out the strategic direction for managing flood risk in discrete policy areas across the estuary, and contains recommendations on what actions the Environment Agency and others will need to take in the short (next 25 years), medium (the following 40 years) and long term (to the end of the century). Two policy units for Greenwich have been identified – Greenwich Peninsula and Thamesmead.

5.5.8 In December 2008, Defra announced their plans to have Local Planning Authorities lead on the management and coordination of Surface Water Management Plans. This announcement followed on from the recommendations of Sir Michael Pitt in his independent review into the Summer 2007 flood events (Recommendations 14 & 18). The approach allows for a measured risk-based approach to sustainable growth as required by Planning Policy Statement 25 (PPS25) as well as Section 39 of the Planning Compulsory Purchase Act of 2004. Greenwich Council is currently preparing a Surface Water Management Plan for the Borough.

Baseline conditions and existing issues

5.5.9 Under the Water Framework Directive (WFD), three watercourses in Greenwich Borough have been classified – these fall within 3 river water bodies: the River Quaggy, Marsh Dykes and the Shuttle River. The overall ecological status for the Marsh Dykes has been classified as moderate, and the Quaggy and Shuttle are poor ecological status. Under WFD, these need to achieve good status by 2027.

5.5.10 A programme of measures to improve the status is being developed. The Water Framework Directive (WFD) will introduce a series of measures to address urban diffuse pollution in some parts of London, in order to achieve the ‘good’ ecological status required for the Directive.

5.5.11 There are no watercourses in Greenwich designated under the General Quality Assessment scheme. There has been a reduction in the GQA network over the last few years. The River Quaggy from the Little Quaggy to the River Ravensbourne was previously designated. This reach historically had good water quality, achieving a grade B since 1998. This was an improvement from a grade C (fairly good quality), which the stretch achieved prior to 1998.

5.5.12 The dominant water body in Greenwich is the Thames Estuary. The reaches forming the northern Borough boundary are affected by combined sewer overflows in wet weather, when dissolved oxygen concentrations regularly fall to levels unsuitable for fish. The very large sewage treatment works at Beckton and Crossness affect the Greenwich reaches of the estuary, and effluent quality from these discharges will improve considerably as large capital schemes are completed by 2014.

5.5.13 There was one major (category 1) pollution incident to water in the Borough between 2005 and 2009. This incident occurred in 2007 and was due to authorised activity at a pumping station when it was overloaded during a storm. This resulted in sewage and urban surface runoff being discharged. There were four significant (category 2) incidents between 2005 and 2009. In three of these cases the pollutant was sewage materials, in the fourth case, which was attributed to natural causes, the pollutant was not identified.

5.5.14 There have been 26 minor (category 3) incidents between 2005 and 2009, with an average of five incidents a year. The cause of these incidents has varied between authorised and unauthorised activity, control and containment failures, natural causes and fires.

5.5.15 London has reasonable high levels of rainfall, but the density of population means that water usage is also going to be increasingly important in the future. The south east is an area of serious water stress and water efficiency measures will be essential to support new growth in the Borough. Greenwich is within the Thames Water Resource Zone. Average water use in this zone (excluding supply pipe leakage) was 155 litres per person per day in 2007/08; an

increase of one litre per person per day from 2006/07, but still significantly lower than the 2005/06 level.

- 5.5.16 Greenwich has some land within flood zones 2 and 3. Flood zone 2 represents the 1 in 1000 year probability of flooding, and flood zone 3 represents the 1 in 100 year probability of flooding. Approximately 23% of the land is in flood zone 3. The area of land within flood zone 3 is predominately in the north of the borough around the tidal River Thames. Other areas include the land around the River Quaggy in the south west of the Borough.
- 5.5.17 Surface water flooding does not appear to be problematic in the majority of Greenwich but areas such as Abbey Wood have experienced problems in the past, including during the recent heavy rainfall events of July 2007.

Likely evolution without the Plan

- 5.5.18 The Environment Agency regulates water quality and flood risk. Given international and national obligations; it is likely that water quality and flood risk will continue to be managed in a way to seeks to improve the environment.

Assessment of Actions

Likely effects of implementing the proposed LIP as a whole, taking into account mitigation

- 5.5.19 The main key delivery plan actions relevant to the achievement of SEA Objectives 5 and 6 are those associated with the following Issues in the LIP:
- Issue 7 – investment in road network
 - Issue 12 – health
 - Issue 14 – road safety
 - Issue 17 – access to services
 - Issue 19 – climate change
- 5.5.20 Proposed action to address Issue 7 includes the maintenance programme and investigation into other, innovative, funding models to maintain and improve the asset. Proposed actions for Issue 19 are changes to road drainage and surfacing materials that are able to withstand extreme heat and quantities of rainfall. Possible significant adverse effects on water quality may result if surface water run-off is not carefully considered in determining materials and early design of channelling. This has particular relevance for road pollutant chemicals from tyres and brake fluids, as well as use of gritting salt in winter. Innovative management of this may include incorporation of sustainable urban drainage systems in the road drainage design to manage and treat runoff. Alternatively, porous surfacing for transport infrastructure should be used, and roads and surfacing should be designed to have minimal impact of receiving waters. In any case it is recommended that maintenance and improvement of the road asset aims to actively reduce surface water runoff into drains and watercourses to mitigate adverse water quality affects.
- 5.5.21 The delivery plan examples to address Issues 12 and 14 include the promotion of walking and cycling. As outlined above, to achieve SEA Objectives 5 and 6 effectively, recommended mitigation may include foot and cycle paths that are designed in a way that minimises surface water runoff and filters or otherwise controls surface road pollutants from entering water courses. Overall, and given the above mitigation; it is considered unlikely that the LIP will generate significant adverse effects on water quality.

Alternatives

5.5.22 No relevant alternatives identified.

Summary

5.5.23 Overall, and taking into account the criteria outlined in the Scoping Report of the SEA objectives, it is unlikely that the LIP will have significant adverse effects on the existing baseline and in protecting and enhancing water quality and encourage water conservation and reducing surface water flood risk.

Assessment of effects of the LIP on SEA objective	Score (without recommendations/mitigation)	Score (with recommendations/mitigation)	Justification of Score	Timescale and probability Short: 1-2 years Med: 2-3 years Long: > 3 years	Permanent or temporary
<p>Protect and enhance water quality and encourage water conservation; and</p> <p>To reduce water run-off to reduce fluvial and surface water flood risk</p>	-	+	<p>The LIP seeks to improve air quality, reduce private vehicle travel and encourage increased walking, cycling and use of public transport. However, in creating additional walk and cycle ways, due consideration on the effect on water quality and quantity is necessary to avoid and mitigate adverse effects. Sustainable urban drainage systems should be incorporated into LIP actions where possible. By incorporating a LIP objective that seeks to protect and enhance Greenwich's natural environment; it is more likely that adverse effects on the attainment of SEA Objectives 5 and 6 are avoided or mitigated.</p>	<p>In creating foot and cycle ways they may be slight adverse effects in the short term associated with construction; however long-term positive effects on SEA Objective 5 and 6 are expected provided effective sustainable urban drainage systems and use of porous materials are adopted.</p>	<p>Other than possible temporary short-term effects associated with foot and cycleway creation; beneficial long term effects on water quality will be permanent should surface water run-off be a key consideration in applicable LIP actions.</p>

5.7 SOIL

This section of the SEA relates to the sustainability performance of the LIP against:

Objective 7: Reduce contamination and safeguard soil quality and quantity.

- 5.7.1 To achieve this objective, the LIP should seek to protect soil quality by restricting schemes that may result in contamination of land.

Relevant policy objectives

National Level

- 5.7.2 *Planning Policy Statement 23 – Planning and Pollution Control (2004)* advises that the quality of land, air or water and potential impacts arising from development, possibly leading to impacts on health, is capable of being a material planning consideration, in so far as it arises from or may affect any land use. It also states that the planning system plays a key role in determining the location of development which may give rise to pollution, either directly or indirectly, and in ensuring that other uses and development are not, as far as possible, affected by major existing or potential sources of pollution.

Regional Level

- 5.7.3 The *draft London Plan (2009)* states that remediation of contaminated sites is encouraged.

Local Level

- 5.7.4 *Land Contamination Strategy (2002)* - The Council's contaminated land strategy deals with contamination of land in the Borough. The strategy sets out how the Council will identify land that justifies detailed inspection and the arrangements and procedures in place for this inspection. The strategy includes an introduction to the context of contaminated land in Greenwich, gives information on legislation, the definition of contaminated land and the duties of Greenwich Council, in the context of land use and development.

Baseline conditions and existing issues

- 5.7.5 Land contamination can take a variety of forms of chemical or biological pollution. In Greenwich it is predominantly chemical in nature from industrial use in the past. Its impacts range from toxic effects on humans or livestock, inhibition of plant growth, or destructive or explosive properties which may damage buildings. Not all the contamination will cause *risk* problems and some will only be of concern if the land is used for a particular purpose. Foot and cycle paths in open space (for example Green Chain) may increase erosion and affect soil compaction if not carefully managed.

Likely evolution without the Plan

- 5.7.6 Other plans and policies govern land contamination, therefore development associated with LIP actions will be assessed against these land-use planning documents (for example the forthcoming LDF).

Assessment of Actions

Likely effects of implementing the proposed LIP as a whole, taking into account mitigation

- 5.7.7 The main key delivery plan actions relevant to the achievement of SEA Objective 7 are those associated with the following Issues in the LIP:

- Issue 12 – health

- Issue 14 – road safety
- Issue 17 – access to services
- Issue 20 – Olympic legacy

5.7.8 Key delivery plan actions for Issues 12, 14, 17 and 20 focus on the development of cycle and walking routes. Routes are earmarked for open space areas, including the Green Chain, and Thames riverside. The negative effects of cycle and walking paths in open spaces relate to the marginal impact they could have on soil compaction and erosion rates. Design of such cycle and walking paths should be well considered to avoid the future creation of ‘desire lines’ by members of the public. Therefore, it is recommended that appropriate surveys and consideration is afforded to impacts on soil and the natural environment (including water, biodiversity and potential loss of open space) in general when implementing LIP actions. This is particularly relevant where greenfield land is taken for pedestrian and cycling routes.

Alternatives

5.7.9 No relevant alternatives identified.

Summary

5.7.10 On balance, and taking into account the criteria outlined in the Scoping Report of the SEA objectives, it is considered unlikely that the LIP will have significant adverse effects on the existing baseline and on SEA Objective 7.

Assessment of effects of the LIP on SEA objective	Score (without recommendations/mitigation)	Score (with recommendations/mitigation)	Justification of Score	Timescale and probability Short: 1-2 years Med: 2-3 years Long: > 3 years	Permanent or temporary
Reduce contamination and safeguard soil quality and quantity.	-	+	The LIP seeks to improve air quality, reduce private vehicle travel and encourage increased walking, cycling and use of public transport. However, in creating additional walk and cycle ways, due consideration on the effect on soil quality and quantity is necessary to avoid and mitigate possible adverse effects. Cycle and walking routes should be carefully considered at their inception stage to minimise adverse effects related compaction, trampling and erosion and to ‘desire lines’ that may be inadvertently created in future. By incorporating a LIP objective that seeks to protect and enhance Greenwich’s natural environment; it is more likely that adverse effects on the attainment of SEA Objective 7 are avoided or mitigated.	In creating foot and cycle ways they may be slight adverse effects in the short term associated with construction; however long-term slight positive effects on SEA Objective 7 are likely provided due consideration to soil is afforded at initial design stage of development.	Construction related effects – temporary. Permanent slight positive effects expected provided any future ‘desire lines’ are avoided.

5.8 & 9 AIR QUALITY and CLIMATE CHANGE

This section of the SEA relates to the sustainability performance of the LIP against:

Objective 8: To improve air quality and reduce levels of transport generated pollution in the form of greenhouse gases, particulates and noise; and

Objective 9: Address climate change by encouraging energy conservation, reducing greenhouse gas emissions and improving the Boroughs ability to adapt to climate change.

- 5.8.1 To achieve these objectives, the LIP should seek to reduce overall CO₂ emissions, improve public transport accessibility and efficiency, minimise dependence on the private motor vehicle, reduce ambient noise from traffic, promote the use of renewable energy and use road surface materials which are more resistant to high temperatures.

Relevant policy objectives

International Level

- 5.8.2 The *Renewable Energy Directs 2009/28/EC* sets ambitious targets for all Member States, such that the EU will reach a 20% share of energy from renewable sources by 2020 and a 10% share of renewable energy specifically in the transport sector.
- 5.8.3 The *Air Quality Framework Directive 2008/50/EC* address air quality by providing ambitious but realistic standards for fine particle PM_{2.5} pollution in the European Union. Under the Directive Member States are required to reduce exposure to PM_{2.5} in urban areas by an average of 20% by 2020 based on 2010 levels. It obliges them to bring exposure levels below 20 micrograms/m³ by 2015 in these areas. Throughout their territory Member States will need to respect the PM_{2.5} limit value set at 25 micrograms/m³. This value must be achieved by 2015 or, where possible, already by 2010.

National Level

- 5.8.4 *Planning Policy Statement 23 – Planning and Pollution Control (2004)* advises that the quality of land, air or water and potential impacts arising from development, possibly leading to impacts on health, is capable of being a material planning consideration, in so far as it arises from or may affect any land use. It also states that the planning system plays a key role in determining the location of development which may give rise to pollution, either directly or indirectly, and in ensuring that other uses and development are not, as far as possible, affected by major existing or potential sources of pollution.
- 5.8.5 *Planning Policy Statement 22 – Renewable Energy* requires local development documents to encourage rather than restrict the development of renewable energy resources. It also establishes that local planning authorities may require a percentage of the energy consumption in new developments to come from on-site renewable sources.
- 5.8.6 The *Air Quality Strategy (2007)* for England, Scotland, Wales and Northern Ireland provides a baseline of air quality and sets critical emissions levels not to be exceeded.

Regional Level

- 5.8.7 The *draft London Plan (2009)* states that proposals should aim to be 'air quality neutral' and not lead to further deterioration of existing poor air quality. The Mayor seeks to increase the proportion of energy generated from renewable sources, and expects that the minimum targets for installed renewable energy outlined in the London Plan are met.

- 5.8.8 The *Mayor's draft Air Quality Strategy (2010)* aims to reduce emissions from transport by encouraging smarter choices and sustainable travel behaviour, promoting technology change and cleaner vehicles, reducing emissions from the public transport and public transport fleets, and using emissions control schemes to reduce emissions from private vehicles.
- 5.8.9 The *Mayor's Transport Strategy 2010* seeks to improve air quality by improving the emissions performance of buses, taxis and vehicles operated by the GLA family. The Mayor will promote the uptake of cleaner vehicles, particularly electric vehicles, and additional measures to improve air quality 'hotspots' should be considered. Improved management of the road network, 25,000 new electric vehicle charging points, school and workplace travel plans and the planting of trees all seek to improve air quality and address climate change.

Local Level

- 5.8.10 The whole Borough is within an Air Quality Protection Area. The purpose of the Council's Air Quality Action Plan is to ensure that air quality is considered corporately and to seek to reduce air pollution within the Borough, in pursuit of the Government's air quality objectives.

Baseline conditions and existing issues

- 5.8.11 As a Beacon authority the Council is recognised as taking a leading role in improving air quality. Greenwich was the first Council in the country to declare a Low Emission Zone (LEZ) at Greenwich Peninsula. In general terms the background annual mean concentrations of both nitrogen dioxide and particulates measured at Eltham and Woolwich Road Flyover appear to be declining although some other measuring stations have recorded fairly static or increased levels of concentrations (Greener Greenwich, 2010).
- 5.8.12 Greenwich's total carbon dioxide (CO₂) emissions were 1,182 kilotonnes in 2007 according to the Department of Energy and Climate Change. Emissions were made up from the industry and commercial sector (35%), domestic sector (39%), and transport (26%). Overall, total borough CO₂ emissions decreased by 2.5% between 2006 and 2007.
- 5.8.13 The Council has established the largest automatic monitoring network run by any local authority in the UK. These stations mainly monitor Nitrogen Dioxide and PM10, although, depending on location, may also include PM2.5, 1,3-butadiene, Sulphur Dioxide, Carbon Monoxide and Ozone. This system is backed up by 58 passive Nitrogen Dioxide diffusion tubes and 15 benzene tubes.

Likely evolution without the Plan

- 5.8.14 While there are other higher levels plans and strategies that seek to improve air quality; it is considered that in the local context, the absence of the LIP will likely result in either static or deteriorated air quality due to transport related emissions.

Assessment of Actions

Likely effects of implementing the proposed LIP as a whole, taking into account mitigation

- 5.8.15 The main key delivery plan actions relevant to the achievement of SEA Objectives 8 and 9 are those associated with the following Issues in the LIP:

- Issue 2 – public transport links
- Issue 5 – links to transport hubs
- Issue 7 – investment in road network

- Issue 8 – positive whole journey experience
 - Issue 9 – improved built and natural environment
 - Issue 10- air quality
 - Issue 11 – noise
 - Issue 12 – health
 - Issue 13 - reducing crime*
 - Issue 14 – road safety
 - Issue 15 – improving public transport safety*
 - Issue 17 – access to services
 - Issue 18 – reducing CO₂ emissions
 - Issue 19 – climate change
 - Issue 20 – Olympic legacy
- * applicable to Objective 9 only.

5.8.16 Overall it is considered that the LIP will likely result in significant positive effects on air quality in the borough. This is because the LIP seeks to reduce private car use, encourage modal shift from single occupancy vehicle journeys, increase walking and cycling in safe and enjoyable environments, use public transport and travels plans, improve the public realm to encourage walking, provide provision of electric vehicle charging points and cycle stations, and the expansion of car clubs. It is considered that easing congestion and increasing use of public transport will significantly contribute to improved air quality in Greenwich, in particular for NO_x and PM10 levels.

5.8.17 However, it is noted that additional public transport is necessary in the waterfront area, linking North Greenwich and Woolwich. This will be especially important once mixed use developments (residential, commercial, and retail) are constructed in the Charlton Riverside (identified Opportunity Area) as provided for under the draft London Plan and Greenwich draft Core Strategy. The Sustainability Appraisal of the draft Core Strategy concluded the following with respect to improved waterfront public transport:

‘...to more effectively and efficiently mitigate adverse effects related to emissions and accessibility, improved public transport is necessary in the waterfront area, in particular maximising the strategic location of Charlton Riverside by providing connections to, through and outside the Borough. It is considered that the preferred strategy has a great reliance on the delivery of a public transport system in the waterfront area, in order to attract investors and residents, maximise efficient use of land in the Borough, maximise accessibility, and actively mitigate or avoid significant adverse air quality effects associated to development in the area. This places a pressure on the Council to work with partners and deliver an efficient transport system between North Greenwich, through Charlton Riverside to Woolwich and beyond. There is currently no funding for such transport in either the Mayors Transport Strategy (2010) or TfL’s current Business Plan to 2018. The uncertainty of the waterfront transport is considered a significant risk...

... If 6,000 homes are built but no public transport infrastructure is provided there could be significant adverse effects environmentally, socially, and economically. Residents and businesses at Charlton Riverside would become isolated and fragmented from the rest of the Borough.

5.8.18 Therefore, localised adverse air quality effects are likely in the waterfront area should additional public transport infrastructure not be provided with the redevelopment of Charlton Riverside. Actions in the LIP involve continued lobbying with TfL for commitment to improved transport links and additional river crossings for vehicles. Positively, the draft Core Strategy supports sustainable patterns of urban development that reduce the need to travel.

5.8.19 Issue 19 addresses adaptation to climate change by delivering road drainage and surfacing materials in a way that withstands expected hotter temperatures and wetter winters. Future climate change is also expected to involve increased frequencies of extreme weather events. It is recommended that Issue 19 is rewritten as follows:

‘Climate change is expected to result in more extreme weather events and a wetter warmer climate with road surfaces having to deal with additional high temperatures and surface water.’

- 5.8.20 Accordingly, it is recommended that the Road Maintenance plan should also ensure there are adequate and accessible salt/gritting supplies to enable a continuously moving transport network through extreme snow events. In terms of the noise aspect of SEA Objective 8; it is recommended that where compatible, low noise road surfacing should be incorporated for use in the road maintenance management plan. In addition, and with respect to public transport, it is recommended that the Council commence lobbying and working with transport authorities on providing customers with comfortable internal temperatures on public transport. The risk of neglecting internal temperatures on public transport is that in future people may avoid public transport in favour of the comfort of their private vehicles. Accordingly, this is considered an important issue for this LIP to address as the issue is capable of undermining the core premise of the LIP (modal shift and sustainable travel). It is also recommended that any streetscape improvements, in particular trees, are selected for both their tolerance to future climate change and enhancement of local biodiversity and any shading and shelter gains. Similarly, these should be planted in locations that benefit public transport users, for example, around bus shelters/stops.
- 5.8.21 Issue 17 seeks to provide access to services and opportunities to help tackle deprivation and facilitate regeneration. It is recommended the delivery plan action is amended to ‘ensure that there is a local **public** transport network...’ Similarly, it is recommended that the Council advocates a preference for electric vehicle car clubs. This is equally applicable and an appropriate key delivery plan example in response to Issue 18. It is further recommended that the Council encourages the use of electric or other low or zero carbon vehicles, and use of sustainable biofuels. It is recommended that the Council provide incentives for the use of zero or low carbon vehicles, such as differential parking charges, whereby low carbon vehicles pay a reduced rate for parking charges and penalties.
- 5.8.22 The LIP also aims to continue the investment, maintenance and improvement of the Highway asset to ensure it remains to a state that is fit for purpose. Improving road conditions may potentially encourage private car use, however, it is considered that adverse effects arising from this are outweighed by the positive effects emanating from the actions delivering and encouraging more sustainable transport measures.
- 5.8.23 Issues 13 and 15 seek to address crime, and include actions to improve street lighting. To help encourage energy conservation and reduce greenhouse gas emissions; use of LED lighting is recommended. It is noted and commended that in the Funding Plan, money is allocated for the use of Solar Powered Signs.

Alternatives

Alternative interventions identified in the Scoping Report include:

- Local congestion charging; and
- Do nothing.

It is considered that local congestion charging is not an appropriate tool to rely upon in seeking to reduce Greenwich’s contribution to climate change. Congestion charging may be used in addition to the proposed measures (promoting walking and cycling, cleaner fuel vehicles, provision of electric vehicle charging points, and travel plans); but as a measure on it’s own, is inadequate.

To do nothing is not considered a sustainable or viable option in achieving SEA Objectives 8 or 9.

Summary

5.8.24 On balance, and taking into account the criteria outlined in the Scoping Report for the SEA objectives, it is considered that the LIP will likely result in significant positive effects in improving air quality in the Borough.

Assessment of effects of the LIP on SEA objective	Score (without recommendations/mitigation)	Score (with recommendations/mitigation)	Justification of Score	Timescale and probability Short: 1-2 years Med: 2-3 years Long: > 3 years	Permanent or temporary
<p>To improve air quality and reduce levels of transport generated pollution in the form of greenhouse gases, particulates and noise; and</p> <p>Address climate change by encouraging energy conservation, reducing greenhouse gas emissions, and improving the Boroughs ability to adapt to climate change.</p>	+	++	<p>The LIP contains effective measures and actions to improve air quality and reduce pollution such as greenhouse gases, particulates and noise from transport. These include improved public transport, including access and both current and future travel proposals such as bus provision, Crossrail and lobbying with TfL for additional waterfront transport and river crossings for vehicles; encouragement and facilitation of an environment conducive to walking and cycling including improved safety, training and introduction of sustainable travel plans and programmes; provision of electric vehicle charging points; and expansion of car clubs. SEA analysis has highlighted that the Council should advocate preference for car club expansions that utilise electric vehicles where appropriate; encourage general use of low carbon vehicles and sustainable biofuels; road surfacing materials and streetscape improvements able withstand extreme weather conditions while reducing noise from the road; and ensuring that there is a public transport network which facilitates movement between residential and other activities and services. While it is commended that there is provision for solar powered signs; LED lighting is also considered necessary to more effectively achieve SEA Objective 9.</p>	<p>Improved air quality is expected in the medium to long-term as behavioural changes towards sustainable travel become more apparent.</p> <p>The Funding Plan makes provision for the use of solar powered signs from 2009/10.</p>	Permanent

Recommendations for monitoring significant effects

5.2.25 It is recommended that the following indicators are used to monitor the effects of the LIP identified in the SEA:

- Proportion of LED lighting used
- Proportion of solar powered signs
- Pollutant levels measured at Air Monitoring Stations in the Borough
- Number of car clubs that use electric or low carbon vehicles
- Take up and use of electric vehicle charging points
- Transport CO₂ emissions.

5.10 MATERIAL ASSETS

This section of the SEA relates to the sustainability performance of the LIP against:

Objective 10: Improve quality of life within the urban environment by providing accessible, well maintained and sustainable transport infrastructure.

- 5.10.1 To achieve this objective, the LIP should seek to maintain and enhance the quality of the public realm including improved road, walking and cycling conditions.

Relevant policy objectives

National Level

- 5.10.2 *Planning Policy Statement 1 Delivering Sustainable Development (2005)* states that planning authorities should plan positively for the achievement of high quality and inclusive design for all development.

- 5.10.3 *Planning Policy Guidance 13 Transport (2001)* seeks to promote more sustainable transport choices for both people and moving freight, promote accessibility to jobs, shopping, leisure facilities, and services by the public, and reduce the need to travel, especially by car.

Regional Level

- 5.10.4 The *draft London Plan (2009)* contains a strategic approach to transport and development and includes, for example, encouraging patterns of development that reduce the need to travel, improve capacity and accessibility of public transport, walking and cycling, and promoting walking by ensuring an improved urban realm.

- 5.10.5 The *Mayor's Transport Strategy 2010* provide an accessible transport system that is integrated with city planning, and targets transport investment to support regeneration. The Mayor seeks to improve the travel experience by raising standards of cleanliness, facilities, and staffing levels of public transport, cooling the Tube network where feasible and affordable, improving the provision of information and providing attractive and safe walking and cycling routes.

Baseline conditions and existing issues

- 5.10.6 Table 9 below shows the modes of transport used in the Borough since 2005.

Table 9: Percentage of residents using various transport modes as their main method of travel in the Borough

Period	Rail	Underground/DLR	Bus/Tram	Taxi/Other Public	Car/Motorcycle	Cycle	Walking
2005/08	5%	3%	18%	1%	45%	1%	26%
2006/09	5%	3%	17%	1%	46%	1%	27%

- 5.10.7 The Woolwich DLR opened in January 2009. In the first year of its operation Woolwich DLR saw 5 million passenger journeys to or from the station, more than doubling DLR's forecasts. The main areas of public transport deficiency are the limited cross river services and links between the north and south of the Borough.

- 5.10.8 The only cross river facilities for non-car owners are the foot tunnels, the Woolwich Ferry and the bus service through the Blackwall Tunnel. The situation has been improved recently with extensions to the Jubilee Tube and DLR services but improvements still need to be made.

- 5.10.9 Public transport is the main mode when travelling in the north of the Borough, but the car is the most significant mode in the south as a consequence of public transport constraints. Public transport connectivity along the north south axis of the Borough also appear to be problematic with less extensive services running in this general direction (i.e. in comparison to services running on the east west axis).
- 5.10.10 Transport along the east west axis is considered to be fair with reasonable rail and bus connections but with overcrowding as a significant issue. The introduction of Crossrail should help alleviate this problem.

Likely evolution without the Plan

- 5.10.11 The LIP is the Plan that seeks to address in practical ways transport accessibility in the Borough. Without the LIP, the likelihood of a modal shift to sustainable transport is reduced. Similarly, the likelihood of bus reviews and improved routes and accessibility will be reduced, or at least take a longer time frame.

Assessment of Actions

Likely effects of implementing the proposed LIP as a whole, taking into account mitigation

- 5.10.12 It is considered that all key delivery plan examples outlined in the LIP are relevant to the achievement of SEA Objective 10.
- 5.10.13 An analysis of each of the 20 Issues identified in the LIP and their key delivery plan actions shows that the actions are likely to result in significant positive effects for improving quality of life within the urban environment by providing accessible, well maintained and sustainable transport infrastructure. Such actions include advocating for additional river crossings for vehicles and Crossrail, increasing bus provision, improving bus access to Queen Elizabeth Hospital, providing and enhancing walking and cycling measures, maintaining and improving the road assets, 20mph zones, making provision for electric vehicles, continued subsidisation of the fast ferry Woolwich extension and designing out crime and improvement to the public realm and streetscape, including trees and lighting. A recommendation to ensure the most favourable urban transport environment would be to ensure sympathetically designed public realm and streetscape improvements. The recommendation made in the appraisal against SEA Objectives 8 and 9 in response to issue 17 delivery plan example to ‘ensure that there is a local public transport network...’ is further endorsed in the appraisal against SEA Objective 10.
- 5.10.14 A potential difficulty of the LIP to effective achievement of SEA Objective 10 may be evident in the medium to long-term as mixed use development occurs in the Charlton Riverside area. Without additional public transport infrastructure servicing the waterfront area and providing connections to Woolwich in the east and North Greenwich to the west, it is likely that quality of life and accessibility for residents and workers of Charlton Riverside will be limited, uncertain and unsatisfactory. It is recommended that the Council continues lobbying for this additional transport link, despite it being absent in the Mayors Transport Strategy.

Alternatives

Alternative interventions identified in the Scoping Report include:

- Place weight/size limits on stretches of road to limit damage;
- Provide additional car parking; and
- Do nothing.

It is considered that placing weight and size limits is not a viable approach as compared with regular maintenance of the road network. Providing additional car parking is considered to be in direct conflict with LIP objectives that seek to reduce use of private vehicles, and encourage more walking and cycling as modes of transport.

To do nothing is not considered a viable approach to achieving SEA Objective 10.

Summary

- 5.10.15 On balance, and taking into account the criteria outlined in the Scoping Report for the SEA objectives, it is considered that the LIP will likely result in significant positive effects in improving material assets in the Borough.

Assessment of effects of the LIP on SEA objective	Score (without recommendations/mitigation)	Score (with recommendations/mitigation)	Justification of Score	Timescale and probability Short: 1-2 years Med: 2-3 years Long: > 3 years	Permanent or temporary
Improve quality of life within the urban environment by providing accessible, well maintained and sustainable transport infrastructure.	+/?	++/?	The Greenwich LIP seeks to facilitate a modal shift to public transport use, and increased walking and cycling in the Borough. The LIP seeks to reduce private vehicle journeys, reduce congestion, increase and improve accessibility to various services and facilities, provide an environment conducive to walking and cycling, and promote use of electric vehicles by providing charging points in streets. However, there is currently uncertainty on the delivery of additional public transport in the waterfront area to serve future residents and businesses of Charlton Riverside.	Changing travel behaviour from private vehicles to public transport, walking or cycling will likely be evident in the medium to long-term. For some areas of the Borough this will also depend upon bus provision improvements. Transport links in the waterfront area are unlikely in the short and medium terms.	Permanent

Recommendations for monitoring significant effects

- 5.10.16 It is recommended that the following indicators are used to monitor the effects of the lip identified in the SEA:
- Number of people using public transport for most of their journeys
 - Number of people who walk for most of their journeys
 - Number of people who cycle for most of their journeys
 - Number of people who drive for most of their journeys
 - Proportion of households who own a vehicle.

5.11 LANDSCAPE AND TOWNSCAPE

This section of the SEA relates to the sustainability performance of the LIP against:

Objective 11: Create places, spaces and buildings that are well designed, integrate effectively with one another, respect identified views and vistas, and enhance the diversity and distinctiveness of the local character including historic, architectural and archaeological features.

- 5.11.1 To achieve this objective, the LIP should encourage an analysis of local distinctiveness, promote innovative development and seek to improve town centres of the Borough.

Relevant policy objectives

National Level

- 5.11.2 *Planning Policy Statement 1 Delivering Sustainable Development (2005)* states that planning authorities should plan positively for the achievement of high quality and inclusive design for all development, including individual buildings, public and private spaces and wider area development schemes. Good design should contribute positively to making places better for people.
- 5.11.3 *Planning Policy Statement 12: Local Spatial Planning (2008)* sets out the Government's policy on local spatial planning, which plays a central role in the overall task of place shaping and in the delivery of land uses and associated activities.
- 5.11.4 *Planning Policy Guidance 13 Transport (2001)* seeks to promote more sustainable transport choices for both people and moving freight, promote accessibility to jobs, shopping, leisure facilities, and services by the public, and reduce the need to travel, especially by car.

Regional Level

- 5.11.5 Policies 7.1 – 7.6 of the *draft London Plan 2009* seek to provide for place-shaping including building neighbourhoods and communities in a safe and inclusive manner, appreciated local character and creating a public realm that is secure, accessible and easy to understand.
- 5.11.6 The *Mayor's Transport Strategy 2010* states that a well designed built environment can bring people and communities together, encourage physical activity and recreation, restore sense of pride and attract businesses and jobs. The Mayor seeks to protect and enhance the urban realm with a series of 'better streets' in London town centres that encourage pedestrians and vehicles to interact in a new and balanced way, negotiating with one another rather than being dictated by signs, railings and traffic infrastructure that can create unnecessary severance.

Baseline conditions and existing issues

- 5.11.7 The Borough is one of contrasting land uses. Housing comprises the largest use of land; however the Borough also benefits from almost a quarter of its total area being some kind of open space. The southern and eastern parts of Greenwich feature large tracts of the South Eastern London Green Chain.
- 5.11.8 This contrasts with industrial land in the north of the Borough at Thamesmead, as does Charlton, and parts of Greenwich. This contrasts again with the nearby O2 Arena in Greenwich Peninsula which is regarded as one of the most popular indoor entertainment venues in the world.

- 5.11.9 The Borough also has an important historic environment at Greenwich, which is a World Heritage Site, as well as 20 conservation areas, nearly 1000 listed buildings, 7 scheduled ancient monuments, a royal park and 12 identified local views. Additionally, the Borough also has views of strategic importance to St Paul's Cathedral from both Greenwich Park and Blackheath Point, and of the World Heritage Site from Island Gardens.
- 5.11.10 Greenwich is currently undergoing a major transformation with one of the largest regeneration agendas in the UK. There is huge opportunity to shape places, spaces and buildings in the Borough.
- 5.11.11 The Boroughs' main town centres are Eltham, Woolwich and Greenwich. Woolwich and Eltham are designated Major Centres and the Borough's largest and second largest shopping and office employment areas respectively. Greenwich, a district centre, is regarded as a vital asset in terms of heritage and tourism to the borough, London wide.
- 5.11.12 Woolwich has experienced significant development and investment. It has the potential for continued residential, commercial and retail growth over the next decade. Interest in the area has been revived by the regeneration of the historic Woolwich Arsenal and the extension of the DLR to the area. While these changes have dramatically improved Woolwich, it is constrained to the north by the River Thames and access to the Royal Arsenal, Riverside Walk and Riverside Park is hampered by the busy A206. However, Woolwich has grown in importance as a transport hub and offers greater regenerative potential with the proposed arrival of Crossrail in 2018.
- 5.11.13 Eltham is a significant employment and retail centre, with Eltham Palace, the Tudor Barn and Well Hall Pleasaunce also placing the town as a key tourist attraction. Eltham is a key residential area and the completion of a number of proposed developments will further boost its potential as an improved town centre. However, its modest size makes it vulnerable to competition from larger centres outside of the borough. Proposals are currently in place for the local Primary Care Trust to build a new community hospital in the heart of the town centre. However, transport links must be improved. Therefore, continued investment is required to address the challenges the area faces.
- 5.11.14 Greenwich is recognised as the most significant of the Borough's District Centres, being a visitor destination of international status. Part of the town centre falls within the inscribed Greenwich Maritime World Heritage Site, with most of the remainder of the town centre area falling within either the West Greenwich or Greenwich Park Conservation Areas. The historic Greenwich Market and a wide range of pubs and restaurants further complement the architectural and cultural attractions.
- 5.11.15 Improving streetscape and public realm may increase visitor numbers to the Borough, who may come by private vehicle; therefore it may be appropriate to restrict road traffic in close proximity to sites, supply sympathetic furniture, trees and bins etc as necessary, and create walk and cycle paths in keeping with surrounding local character, and historic and archaeological features.
- Likely evolution without the Plan**
- 5.11.16 In terms of historic and archaeological assets, other legislation, plans and organisations are responsible for ensuring the maintenance, protection and enhancement of these features. Therefore, in the absence of the LIP, it is unlikely these resources will be significantly impacted upon. With regards to townscapes, places and spaces, it is considered likely that improved access and transport may increase economic growth of town centres, although

given the current economic climate, absence of the LIP is unlikely to have a significant impact. In summary, the absence of the LIP on townscape will likely result in a static trend.

Assessment of Actions

Likely effects of implementing the proposed LIP as a whole, taking into account mitigation

- 5.11.17 Like SEA Objective 10 – Material Assets, it is considered that all key delivery plan examples outlined in the LIP are also relevant to the achievement of SEA Objective 11.
- 5.11.18 Overall, it is considered that generally significant positive effects will likely result on townscape, archaeological, historic and local character of the Borough. Actions such as pedestrianisation of Greenwich town centre, providing walkable and cyclable environments, inclusion of 20mph zones, designing out crime, and improving the public realm/streetscape will all seek to positively attain SEA Objective 11. However, it is recommended that such public realm improvements, including lighting, furniture, signs, cycle storage and paving is sympathetic to the immediate surrounding environment, for example local character and heritage.
- 5.11.19 Actions such as reviewing bus provision and improving access to public transport are also likely to result in significant positive effects in terms of creating a borough that is well designed and integrated. Designing walk and cycle ways will require careful consideration to optimise way finding and reduce adverse effects associated with ‘desire lines’ generated by the public.
- 5.11.20 However, while improving connectivity of sustainable transport networks, and maintaining the road asset to ensure it is fit for purpose does offer benefits to the local character; such actions may also inadvertently have some negative impact on heritage, archaeological and open space assets, through increased visitor numbers to these sensitive environments. Visitors may or may not travel by sustainable modes of transport. Where appropriate, traffic could be restricted in order to protect character and heritage.
- 5.11.21 Limited river crossings restrict ease of vehicle movement outside of the Borough, and also create congestion within the Borough. The lack of river crossings limits effective integration of Greenwich with other areas of London (with secondary effects impacting on economic growth and employment). In terms of SEA Objective 11, it is considered crucial that the Council continues to lobby for funding and a commitment by TfL for an additional river crossing. An additional river crossing will improve radial connectivity, alleviate congestion in the Blackwall Tunnel, and will likely improve air quality and quality of life in the immediate surrounding area. It is recognised that Crossrail will provide a sustainable form of inter-borough connectivity.
- 5.11.22 Within the Borough there are some areas with poor connections and links. Improving these connections will likely result in overall positive effects on land and townscape. Of particular importance for future regeneration and redevelopment in the Borough is the commitment and funding by TfL to provide additional public transport in the waterfront area from North Greenwich to Woolwich, via Charlton Riverside, an area earmarked for significant mixed use development. It is considered that should such public transport not serve the Charlton Riverside area; the area will become isolated and fragmented from the rest of the Borough, with increasing reliance on private vehicles for transport and therefore SEA Objective 11 would not be met in this localised area. Accordingly, it is recommended that the Council continues rallying TfL for the additional transport and explicitly demonstrates the expected

adverse effects that will occur should additional public transport in this area not be delivered.

5.11.23 As identified in the assessment against SEA Objective 9; it is considered important for the achievement of SEA 11 that adequate supplies of grit are stored and accessible for use during snow events to ensure that places and spaces integrate effectively and there is movement on the transport network.

Alternatives
 Alternative interventions identified in the Scoping Report include:

- Provide additional car parking; and
- Do nothing

Providing additional car parking is considered to be in direct conflict with LIP objectives that seek to reduce use of private vehicles, and encourage more walking and cycling as modes of transport.
 To do nothing is not considered a viable approach to achieving SEA Objective 11.

Summary

5.11.24 On balance, and taking into account the criteria outlined in the Scoping Report for the SEA objectives, it is considered that the LIP will likely result in significant positive effects in improving townscape and landscape in the Borough.

Assessment of effects of the LIP on SEA objective	Score (without recommendations/mitigation)	Score (with recommendations/mitigation)	Justification of Score	Timescale and probability Short: 1-2 years Med: 2-3 years Long: > 3 years	Permanent or temporary
Create places, spaces and buildings that are well designed, integrate effectively with one another, respect identified views and vistas, and enhance the diversity and distinctiveness of the local character, including historic, architectural and archaeological features.	+/?	++/?	The LIP contains good key actions such as provision for public realm improvements, creating walkable and cyclable environments and 20mph zones, to enhance town and landscapes in Greenwich. Therefore, overall, it is considered that the LIP has potential to result in significant positive effects in terms of SEA Objective 11, provided critical new infrastructure is delivered. However, there is currently uncertainty on the delivery of such additional transport networks. Should additional public transport infrastructure not serve Charlton Riverside, there are likely to be significant adverse effects in terms of townscape, inequalities, and air quality.	Additional public transport in the waterfront area and new river crossings are unlikely until the long-term given these do not feature in current TfL Business Plans. However, in the short term the Council can press on with its case for the necessity of such transport infrastructure. Additional walking and cycling paths are likely in the short-medium term, as are improvements to the public realm; in particular given the Borough is hosting Olympic events.	Permanent

Recommendations for monitoring significant effects

5.11.25 It is recommended that the following indicators are used to monitor the effects of the LIP identified in the SEA:

- Use of walking and cycling paths
- Number of 20mph zones
- Means of travel by visitors to the Borough

6 SUMMARY AND CONCLUSIONS

The LIP

- 6.1 The Second Local Implementation Plan for the London Borough of Greenwich sets out how the Borough proposes to tackle the regional and local transport challenges while ensuring the Borough's assets are protected. Greenwich's LIP has been prepared in line with the Mayor's revised Transport Strategy. The LIP is a statutory document, prepared under section 145 of the Greater London Authority Act 1999.
- 6.2 In brief, the LIP seeks to increase the mode share of walking and cycling in the Borough, achieve a modal shift from single occupancy journeys, encourage electric or low carbon vehicles, reduce CO₂ emissions and provide a well maintained transport infrastructure.

Sustainability Effects

- 6.3 Overall, it is considered that the proposed LIP will generally result in positive effects for the Borough but uncertainty in deliverability of additional waterfront public transport and river crossing for vehicles are a concern. Table 10 shows the sustainability effects for each SEA Objective.

Table 10: Summary of SEA scores

SEA OBJECTIVE	SEA SCORE without recommendations/ mitigation	SEA SCORE with recommendations/ mitigation
1. Improve conditions and services that engender good health and reduce health inequalities	+	++
2. Reduce and prevent crime and fear of crime	+	++
3. To encourage the use of more sustainable modes of transport (public transport/cycling/walking), reduce the need to travel and reduce congestion.	+/?	++/?
4. Protect and enhance biodiversity, landscapes and the open space network while improving appropriate access to these areas	-/?	+
5. Protect and enhance water quality and encourage water conservation; and 6. To reduce water run-off to reduce fluvial and surface water flood risk	-	+
7. Reduce contamination and safeguard soil quality and quantity	-	+
8. To improve air quality and reduce levels of transport generated pollution in the form of greenhouse gases, particulates and noise; and 9. Address climate change by encouraging energy conservation, reducing greenhouse gas emissions, and improving the Boroughs ability to adapt to climate change.	+	++
10. Improve quality of life within the urban environment by providing accessible, well maintained and sustainable transport infrastructure	+/?	++/?
11. Create places, spaces and buildings that are well designed, integrate effectively with one another, respect identified views and vistas, and enhance the diversity and distinctiveness of the local character, including historic, architectural and archaeological features.	+/?	++/?

6.4 As indicated above, the LIP is likely to achieve significant positive effects with respect to health, crime, use of more sustainable forms of transport, improved air quality and consideration of climate change, and accessible, well maintained transport infrastructure that respects local character and townscape including historic, archaeological and architectural features. The key uncertainties relate to the commitment, funding and deliverability of critical transport infrastructure in the waterfront area, and an additional river crossing for vehicles.

Recommendations

6.5 Thirty recommendations have been made in this SEA. Recommendations have been made, where appropriate, that aim to improve the sustainability effects of the proposed LIP. A list of the recommendations is provided in Table I below. The key recommendation to the LIP is the inclusion of an additional strategic objective that will ensure LIP actions recognise and provide for natural and cultural resources. The inclusion of this objective, and recommended mitigation actions has largely resulted in a change from minor negative effects to minor positive effects regarding the environmental sustainability objectives.

6.6 It is important to note judgements were made on scores and the extent to which a LIP can play a part at attaining an SEA Objective. For example, the effects of the proposed LIP on SEA Objective 1 – improving conditions and services that engender good health and reduce health inequalities – was assessed to result in significant positive effects to the Borough. Obviously health is influenced by a number of other, more direct factors and organisations, such as the establishment of hospitals and the operation of NHS; but it was considered that the extent to which the LIP can play a role in attaining SEA Objective, led to significant positive effects.

Table I: SEA Recommendations to improve the LIP

No.	SEA Objective	Recommendation
1	1	That the review of bus provisions addresses overcrowding and accessibility, and in particular provision for public transport in the waterfront area.
2	1	That car clubs are encouraged and incentivised to use hybrid, zero or low carbon or electric vehicles as technology advances.
3	1	It may be appropriate for the Council to encourage home owners of main arterial routes to install triple glazing windows as a measure to reduce noise from road traffic.
4	1	That due consideration is given to how people walk and use footpaths, rather than how planners would like them to move and walk.
5	2	That transport hubs and interchanges are appropriately maintained to reduce graffiti and associated secondary effects causing fear of crime.
6	2	Appropriate positioning of CCTV is recommended.
7	2	It is considered that the introduction of a ‘dispersal zone order’ as enforced at the Woolwich Town Centre, may also be effective in achieving SEA Objective 2.
8	2	A street lighting programme should ensure safe night-time walking and cycling routes while avoiding excessive light pollution. The programme should also include sensors that use less power and increased use of LED lighting of minimum wattage necessary to minimise carbon emissions.
9	2	That a key delivery plan action is included that commits the Council to working with Metropolitan Police and other relevant stakeholders to provide information on various security options for cyclists, such as watermarking, good lock techniques, choice of locks and secure cycle storage in housing estates.
10	3	That in designing new walk and cycle ways, and in improving streetscape, due consideration is given to how people walk and find their way (including desire lines).
11	3	That the use and extent of proposed 20mph zones in the Borough is reassessed to maximise the likelihood and attractiveness of walking and cycling as modes of transport for all people to use.

12	3	That the LIP makes appropriate provision for the continued maintenance and improvement of walking and cycling routes. Where possible, materials for road maintenance, and walking and cycling paths incorporate use of local sourced and/or recycled resources.
13	4	That in determining drainage and materials under the road maintenance programme; impacts on the natural environment, including water, biodiversity and soil, are carefully considered to avoid or mitigate significant adverse effects.
14	4	In the event of any such commitment and initial design for an additional river crossing, it is recommended that adverse impacts on biodiversity and the open space network are minimised and mitigated.
15	4	That action in response to Issue 17 should include movement from residential areas to open space and wildlife sites.
16	4	That the LIP adopts a 'no net loss' approach to biodiversity and open spaces.
17	4	To support the proposed natural environment objective as recommended previously; it is considered that a further issue and set of key delivery plan examples that encapsulates the above recommendations (see SEA Objective 4 analysis) should be included under MTS Challenge 5: Enhancing the built and natural environment.
18	5 & 6	That maintenance and improvement of the road asset aims to actively reduce surface water runoff into drains and watercourses to mitigate adverse water quality affects.
19	7	That appropriate surveys and consideration is afforded to impacts on soil and the natural environment (including water, biodiversity and potential loss of open space) in general when implementing LIP actions.
20	8 & 9	It is recommended that Issue 19 is rewritten as follows: 'Climate change is expected to result in more extreme weather events and a wetter warmer climate with road surfaces having to deal with additional high temperatures and surface water.'
21	8 & 9	That the Road Maintenance Plan also ensures there are adequate and accessible salt/gritting supplies to enable a continuously moving transport network through extreme snow events.
22	8 & 9	In terms of the noise aspect of SEA Objective 8; it is recommended that where compatible, low noise road surfacing should be incorporated for use in the Road Maintenance Management Plan.
23	8 & 9	That the LIP contains provision for the Council to lobby and work with transport authorities on providing customers with comfortable internal temperatures on public transport.
24	8 & 9	That any streetscape improvements, in particular trees, are selected for their tolerance to future climate change, enhancement of local biodiversity and any shading and shelter gains. Similarly, these should be planted in locations that benefit public transport users, for example, around bus shelters/stops.
25	8 & 9	That delivery plan action of Issue 17 is amended to 'ensure that there is a local public transport network...'
26	8 & 9	That the Council encourages the use of electric or other low or zero carbon vehicles, and use of sustainable biofuels.
27	8 & 9	That the Council provide incentives for the use of zero or low carbon vehicles, such as differential parking charges, whereby low carbon vehicles pay a reduced rate for parking charges and penalties.
28	8 & 9	To help encourage energy conservation and reduce greenhouse gas emissions; use of LED lighting is recommended as is use of solar powered signs.
29	10	To ensure the most favourable urban transport environment is delivered including sympathetically designed public realm and streetscape improvements. Such public realm improvements, including lighting, furniture, signs, cycle storage and paving should be sympathetic to the immediate surrounding environment, for example local character and heritage.
30	10	That the Council continues lobbying for additional public transport in the waterfront, despite it being absent in the Mayors Transport Strategy.

6.7 Taking into account the findings and recommendations of the SEA, it is considered that the proposed LIP sets out an overall positive framework for future transport infrastructure in the Borough.