Second Local Implementation Plan (LIP2), Strategic Environmental Assessment (SEA) Environmental Report

July 2011

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1. Non-Technical Summary

1.1 Introduction

This Environmental Report for the London Borough of Richmond 's Local Implementation Plan (LIP) has been prepared in line with regulations issued by the United Kingdom Government and the European Union. The main purpose of this report is to demonstrate how environmental considerations have been integrated into the Local Implementation Plan proposed programmes. Under the Environmental Assessment of plans and programmes Regulations 2004, a 'Strategic Environmental Assessment' (SEA) of the Second Richmond Local Implementation Plan is required. The Environmental Report builds on the SEA Scoping Report produced by Richmond Council in February 2011.

The SEA Directive requires authorities to assess the likely significant effects of their plans and programmes on the environment, including on issues such as biodiversity, population, human health, flora and fauna, soil, water, air, climatic factors, material assets, cultural heritage including architectural heritage, landscape and the interrelationship between these factors.

The main requirements introduced by the SEA Regulations are that:

- the findings of the SEA are published in an Environmental Report, which sets out the significant effects of the draft plan, in this case LIP2;
- consultation is undertaken on the plan and the Environmental Report;
- the results of consultation are taken into account in decision-making relating to the adoption of the plan; and
- information on how the results of the SEA have been taken into account is made available to the public.

It is a systematic process that identifies and predicts the potential significant environmental effects of plans/programmes, informing the decision making process by testing different alternatives or options against environmental sustainability objectives.

1.2 What is the Richmond Local Implementation Plan

A Local Implementation Plan is a statutory document, which sets out how a London Borough proposes to implement the London Mayor's Transport Strategy (MTS) at a local level. The Richmond LIP provides details of the Borough's transport programme and funding requirements. It covers the same period as the second MTS and includes specific delivery proposals for the three year period 2011/12-2013/14 and outlines the Council's framework for the delivery of transport projects, which accord with the five goals set in the second Mayor's Transport Strategy (MTS 2):

- Supporting economic development and population growth.
- Enhancing the quality of life for all Londoners.
- Improving the safety and security of all Londoners.
- Improving transport opportunities for all Londoners.
- Reducing transport's contribution to climate change, and improving its resilience.

It additionally reflects the transport needs and aspirations of the people of Richmond.

1.3   What is a Strategic Environmental Assessment (SEA)?

European Directive 2001/42/EC (known as the 'SEA Directive') on the assessment of the effects of certain plans and programmes on the environment was adopted into UK law in July 2004 through the SEA Regulations. SEA is a process which aims to integrate environmental and sustainability considerations into the preparation and adoption of plans and programmes in order to promote sustainable development.

SEA is a systematic way to examine the likely significant effects of implementing a plan or programme and its reasonable alternatives. It is an iterative process, informing each stage of the development of a plan and feeding back information on how the plan is likely to affect the environment. The stages of the SEA are outlined below:

Stage A – Setting the context and objectives, establishing the baseline and deciding on the Scope.

Stage B – Developing and refining alternatives and assessing effects

Stage C – Preparing the Environmental Report

Stage D – Consulting on the draft plan and the Environmental Report

Stage E – Monitoring the significant effects of implementing the plan or programme on the environment

A key stage of the SEA process is the preparation of the Environmnetal Report (this report) in which the like significant environmental effects of the plan are described. The purpose of this report is to:

- To aide consultation on the LIP by providing consultees with information on the potential environmental effects.
- To assist Richmond Council with decision making on the LIP by highlighting the potential environmental effects of the plan.

1.4   Coverage of the Environmental Report

The following items have been examined during the course of the assessment and are presented in the Environmental Report:

- Background information on Richmond's Second LIP and its four main objectives;
- Relationship of the LIP to other plans and programmes;
- The environmental baseline and key environmental problems
- The SEA Framework of objectives
- The compatibility of LIP objectives with SEA objectives
- Development of alternatives for the LIP
- Assessment of the environmental effect of the LIP and its alternatives
- Proposed mitigation and enhancement measures

- Monitoring measure

1.5 Environmental Context and Baseline

The LIP is influenced by other relevant plans, programmes and strategies at international, national, regional and local levels. At international level, international agreements and EU directives establish requirements and guidance on issues such as sustainable development, climate change, biodiversity, habitats, water and air quality. There are also specific national plans, guidance and strategies on aspects such as transport, planning, climate change, air quality, biodiversity, the historic environment and sustainable development. At the London-wide level, the London Plan and MTS are key policy documents which influence the direction of the LIP. The Mayor also has numerous strategies covering a diverse range of topics, including economic development, water, health inequalities, biodiversity, waste, ambient noise and air quality. At the local level, Richmond's Local Development Framework and Sustainable Community Strategy set a framework for the future development of the Borough.

Key environmental objectives of these various plans and programmes have been considered in the assessment of the Richmond LIP. The SEA Regulations require that the current state of the environment and its likely evolution without the implementation of the LIP are described.

1.6 SEA Framework

A SEA framework of objectives has been devised from the review of plans and programmes, analysis of baseline data and consideration of environmental issues within the Borough. This framework, which includes a series of environmental objectives, is used to access the environmental effects of the second Richmond LIP. The SEA Directive does not specifically require the use of objectives or indicators in the SEA, but objectives can usefully demonstrate how environmental effects can be described, analysed and compared. The following are the SEA objectives which are also the same set of objectives that Richmond has used in its other SEA work such as within our Draft Sustainability Appraisal:

- To promote sustainable waste management, including reducing waste and waste disposal, promoting recovery, reuse and recycling;
- To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality;
- Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves;
- Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure;
- To maintain water quality and reduce the risk of flooding;
- To promote sustainable energy use through improved energy efficiency, reduced energy use and increased use of renewable energy;
- Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites;
- Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors;

- To make best use of previously developed land and existing buildings, encouraging sustainable construction practices;
- to provide sufficient affordable housing that meets local needs;
- to create and maintain safer and more secure communities;
- To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required;
- To increase the vitality and viability of existing town centres, local centres and parades;
- To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth;
- provide appropriate commercial development opportunities to meet the needs of the local and sub-regional economy.

1.7 Considerations of Alternatives for the LIP

A key element of the SEA process is the proactive consideration of alternative ways of delivering the plan so that an assessment can be made of the best environmental options to take forward. In considering alternatives for the LIP, it is important to remember its role in implementing the MTS at a local level and the extent to which this sets a limit on the range of options that can be considered. Alternatives help inform the initial thinking on those transport initiatives that are prioritised within the LIP Delivery Programme. The aim of the exercise is to assess the variety of options available for implementing the draft LIP objectives and the priorities of the MTS. It also assisted decision making on the preferred options to prioritise, taking account of the potential environmental effects of the whole LIP.

1.8 Mitigation

Where significant effects are predicted then the SEA makes recommendation on the measure to prevent, reduce or offset these impacts. Measures may include changes to the Richmond LIP, requirements for further studies, or recommendation for specific measures to particular schemes. Measures to enhance beneficial effects can also be included.

1.9 Monitoring

Monitoring helps to keep track of the actual environmental effects of implementing the Richmond LIP. The Richmond LIP includes a programme to monitor delivery of the transport initiatives, including annual reports on the performance of the LIP against targets. SEA monitoring is also proposed within the Environmental Report based on the SEA framework. These measures are subject to on-going consultation and will be defined in more detail in the run up to publication of the SEA Statement following adoption of the final LIP which is anticipated between April and June 2011.

1.10 Commenting on the SEA Environmental Report

Public consultation is a key element of the SEA process. This must be undertaken with Natural England, English Heritage and the Environment Agency. The SEA Environmental Report is published for consultation alongside the draft LIP. All comments on the SEA will be reviewed and taken into account prior to publication of

the final Richmond LIP and the preparation of the final SEA Statement. Comments relating to the content of the Environmental Report should be sent to:

Ben Fryer
Principle Transport Planner
Civic Centre
44 York Street
Twickenham
TW1 3BZ

Email: ben.fryer@richmond.gov.uk

2.   Introduction

Richmond upon Thames, like all London local authorities, is required under the greater London Authority Act 1999 to produce a Local Implementation Plan (LIP) showing how the authority intends to implement policies, strategies and programmes over the life of the plan to implement the Mayor's Second Transport Strategy (MTS2). The preparation of the LIP should also take into account the objectives set out in other Mayoral Strategies. The LIP2 covers the same period as the MTS2 and includes specific delivery proposals for the first three year period of 2011/12 – 2013/14.

2.1   SEA and the Regulations

Under European Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment, all such authorities must carry out a SEA Assessment of new plans in certain areas, including transport. This is implemented in England through the Environmental Assessment of Plans and Programmes Regulations 2004 (SI 2004 No. 1633). The SEA process for LIPs is designed to integrate with the DfTs New Approach to Appraisal (NATA). Advice on the application of SEA to LIPs has been provided through the association of London Government (ALG) by the Centre for Sustainability.

Article B of the Directive 2001/42/EC requires the Environmental Report and the results of consultation are taken into account in the decision-making process. To be effective, an SEA should be undertaken as an iterative process and should be fully integrated into the plan-making process.

2.2   The Purpose of the SEA

The Strategic Environmental Assessment (SEA) Directive for the assessment of the effects of certain plans and programmes was transposed into English law on the 20th July 2004 in the form of The Environmental Assessment of Plans and Programmes Regulations 2004 (referred to in this report as the 2004 Regulations), and means that the Directive will apply to plans and programmes, and modifications to them, prepared after this date. This resulted in a mandatory requirement to undertake SEA during the preparation of Richmond's LIP2.

The objective of the SEA Directive 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 with a view to promoting sustainable development*".

The vehicle for achieving this aim is by means of the assessment of certain plans and programmes which are likely to have significant effects on the environment, the results of which are presented in an Environmental Report.

In terms of identifying the types of plans and programmes that qualify in terms of the Directive, the Directive states that "an environmental assessment shall be carried out for plans and programmes which are prepared for agriculture, forestry, fisheries, energy, industry, transport, waste management, water management, telecommunications, tourism, town and country planning or land use and which set the

framework for future development consent of project listed in Annexes I and II to Directive 85/337/EEC" (i.e. the EIA Regulations).

Given the long-term, strategic nature of the LIP2 and it slink between current government policy and local transport issues, the LIP2 is recognised as being a type of plan or programme that may have significant effects on the environment. The inclusion of an implementation programme of schemes derived from specific transport objectives also means that the LIP2 may have a direct impact on the framework for future development consent. As a result, it is recognised that LIPs qualify for assessment in terms of the SEA Directive.

The SEA Directive defines 'strategic environmental assessment' as a procedure comprising:

- "Preparing an environmental report on the likely significant effects of the draft LIP2 on the environment;

- Carrying out consultation on the draft LIP2 and the accompanying Environmental Report;

- Taking into account the Environmental report and the results of the consultation in decision making; and

- Provide information when the plan is adopted and showing how the results of the SEA have been taken into account"

It is clear from the above steps; the programme for producing the LIP2 is inextricably linked with that of the SEA.

The Environmental Report is the key output of the SEA. It aims to fully document the details of the SEA process, ensure active and transparent consultation on the draft LIP2 and shows how the SEA regulations have been complied with.

Guidance, prepared by the DfT on how to carry out a SEA for transport in England, is reported in Transport Analysis Guidance (TAG) (Unit 2.11) Strategic Environmental Assessment for Transport Plans and Programmes, issued in December 2004 and not updated since (www.webtag.org.uk). The SEA of Richmond's LIP2 is being carried out in accordance with this guidance.

The Directive's definition of 'environment' includes not only the natural environment and the historic environment, but also some human effects such as health and material assets. It also requires an analysis of a plan's secondary, cumulative and synergistic effects.

2.3   Consultation Responses on the SEA Scoping Report

Table 1 below provides a summary of the consultation responses received on the SEA Scoping Report for the Second Richmond LIP, indicating how specific comments have been taken into account in the preparation of this Environmental Report.

Richmond Council issued a Scoping report in February 2011 which identified the main areas of work required to meet the requirements of the SEA Directive. It set out the following:

- Environmental objectives of other relevant plans and programmes;

- SEA objectives and indicators;

- Key environmental issues in Richmond;

- Methodology for and the remaining stages of the SEA.

The SEA Regulations require that consultation with stakeholders is an integral part of the SEA process, with feedback from these consultations being used to refine the plan and /or programme. A key requirement is that consultation takes place with the three consultation bodies (Natural England, the Environment Agency and English Heritage). All three organisations responded and these are set out in Appendix X of this report.

Table 1 Summary of Statutory Consultee Responses

Response received from	Summary of comments received	How the specific comments have been taken into account
Environment Agency	As part of the SEA, they would like to see considered the likely effects on the environment the following areas: • Climatic factors e.g. climate change • Air quality and human health • Water and soil • Biodiversity, flora and fauna • Material assets e.g. sustainable use of resources and waste	These have been considered and are fully taken account of in the text of both the LIP and the SEA
Natural England	Baseline information should include: • Landscape (and townscape) character and quality including: - reference to the London landscape framework • Biodiversity and geodiversity including: - BAP species and habitats - Location of Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Sites of Special Scientific Interest (SSSIs) • Access including: - Thames Path National Trail (where relevant) - Other access e.g. permissive access - Publis Rights of Way • The natural environment resource of the area including green spaces and the links between them. ***SEA objectives*** We would expect the SEA objectives to cover the following issues relating to the natural environment: • Conserve and enhance landscape and townscape character and quality; and local distinctiveness; • Conserve and enhance biodiversity, including both habitat and species; • Conserve and enhance geodiversity and soils; • Provide and enhance opportunities for	These are reflected in both the LIP2 and the SEA where it is appropriate to include them.

	public access to a good quality rights of way and open space. Consider Habitats Regulation Assessment (HRA). DfT guidance on LTPs outlines the necessity to undertake HRA screening to determine whether the plan is likely to have a significant effect on a European site alone or in combination with other plans and projects. In this respect we would like to draw your attention to the latest consolidation of the Habitats Regulations - the *Conservation of Habitats and Species Regulations 2010.*	
English Heritage	- Local planning authorities should ensure, 1) plans are supported by a robust evidence base, 2) there is a 'positive, proactive strategy for the conservation and enjoyment of the historic environment' and 3) the impact of policies on heritage assets are monitored. - We would advise that the Scoping Report takes account of PPS5, alongside other key national and regional planning policy. - The EH Guidance on SEA, SA and the Historic Environment recommends that scoping reports should make appropriate and proportional reference to the historic environment dependent on the plan in question - National and regional transport policy also requires that transport plans take a proactive approach towards improving the historic environment and public realm within the transport system as part of a holistic approach to streetscape improvement. - Within *Transport and the Historic Environment*, English Heritage recommends a 7 point vision for long-term transport policy, which we would encourage the Borough to integrate within the LIP2 process as fully as possible.	The guidance and advice that English Heritage has referred to are already used by officers when considering schemes. We are also very concerned to preserve as much as the built and natural environment that we have in order to maintain the Borough's present environrment.

3.   Richmond's Second Round Local Implementation Plan (LIP2)

Richmond's' LIP sets out the Council's broad aims and objectives fir transport in the borough and how these relate to the MTS. In addition, the document identifies the transport programme and schemes for implementation in the years 2011/12, 2012/13 and 2013/14, including their funding requirements and prioritisation. Borough progress and revisions to their TfL funding requirements are submitted to TfL annually.

The Richmond LIP initially outlines the socio-economic and demographic context, before examining the current transport network, provision of transport services and the key transport issues for the Borough for the period of the Plan.

3.1   Structure of the LIP2

The Local Implementation Plan is set out in six main sections:

1.   Introduction
2.   Links to other plans and policy influences
3.   Borough overview
4.   Moving transport forward in Richmond
5.   Delivery Plan 2011-2014
6.   Performance monitoring plan

Section one provides an introduction to the Local Implementation Plan and what it aims to achieve and sets out an overview of the Borough both in terms of its socio-economic background and diversity and its transport network. It also discusses those major issues that are on the horizon and will affect the Borough's future.

Section two provides the policy context and framework for LIP2 under the GLA 1999 Act to accord with the six goals set in the MTS2 which are:

1. Supporting economic development and population growth.
2. Enhancing the quality of life for all Londoners.
3. Improving safety and security for all Londoners.
4. Improving transport opportunities for all Londoners.
5. Reducing transport's contribution to climate change and improving its resilience.
6. Supporting delivery of the London 2012 Olympic and Paralympic Games and its legacy

The section sets out the policy context of the LIP and how other layers of national, regional and local policies have influenced it. In particular, how the Mayor of London's key policy documents: the London Plan, the Mayor's Transport Strategy 2, and the Mayor's Economic Strategy have set the context in which the LIP2 has evolved and have been influential.

Section three sets out how the Council will move forward and develop a new decision making process, adopt a new approach in our engagement with the residents and businesses of the Borough, and in particular as a result of its new "All in One" Survey. It outlines the Council's key transport objectives. The key priorities reflect the Mayoral objectives and comprise:

1. To support and maintain the economic vitality of local shops and the Borough's thriving town and local centres
2. To improve the local environment and quality of life for all residents of the Borough.
3. Improving safety for all road users.
4. Enhancing transport choice and reducing congestion.
5. Developing a transport system that is resilient and reflective of local needs and aspirations.
6. Deliver the "Uplift Strategy" for the regeneration of five particular areas of relative deprivation across the Borough

Improve the accessibility, efficiency and attractiveness of transport Borough wide, thus increasing social inclusion.

Section four sets out the Council's Delivery Plan, that will help meet our LIP2 Objectives. It outlines under each Objective what types of schemes will be used to deliver it. It goes on to show how as part of this, encouraging non-car modes, walking, cycling, public transport and future river services will all play an important part.

The sections also sets out how the Authority will achieve it's objectives through investment of the funding received from TfL, contributions from developers (section106 monies) and other funding sources.

Section five sets out the Council's Performance Monitoring Plan, setting out the targets and indicators through which meeting the Council's Objectives will be measured

This LIP2 will be subject to statutory and public consultation before being approved by the Mayor in 2011. Boroughs are required to report on annual spend to TfL replacing the current bi-monthly reporting. At the end of the second LIP period in 2014 boroughs will be required to prepare and publish a three –year Impact Report setting out their expenditure, achievements of LIP programmes and targets and evidence that LIP2 has contributed to wider policy objectives for the borough.

TfL will review these reports and the results may influence the funding formula for the third round of LIPs.

Table 2 Richmond's Sustainability Objectives

Environmental	Social	Economic
1) To promote sustainable waste management, including reducing waste and waste disposal, promoting recovery, reuse and recycling	10) to provide sufficient affordable housing that meets local needs.	13) To increase the vitality and viability of existing town centres, local centres and parades
2) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality	11) to create and maintain safer and more secure communities	14) To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth
3) Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	12) To facilitate the improved health and well-being of the population, including enabling people to	15) provide appropriate commercial development opportunities to meet the needs of the local and

	stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	sub-regional economy
4) Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure		
5) To maintain water quality and reduce the risk of flooding		
6) To promote sustainable energy use through improved energy efficiency, reduced energy use and increased use of renewable energy		
7) Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites		
8) Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors		
9) To make best use of previously developed land and existing buildings, encouraging sustainable construction practices		

Consideration of the above Sustainability Objectives has led to the adoption of the following ten LIP2 SEA Objectives:

1. To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality.
2. Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves.
3. Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure.
4. To maintain water quality and reduce the risk of flooding.
5. Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites.
6. Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors.

7. To create and maintain safer and more secure Communities.
8. To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.
9. To increase the vitality and viability of existing town centres, local centres and parades.
10. To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth.

3.2 Relationship to other Relevant Plans and Programmes

The SEA Directive indicates that the Environmental Report should provide information on the LIP2's relationship with other relevant plans and programmes as well as the environmental protection objectives established at international, European or National level. There is a comprehensive range of international, national, London-wide and local plans and programmes with the aim of environmental protection that the LIP must adhere to. A summary of key plans and programmes are listed as follows:

International
- Kyoto Protocol on Climate Change 1997
- World Summit on Sustainable Development – UN, Johannesburg 2002
- International EU Habitats Directive [Directive 92/43/EC] (European Union 1992)
- International EU Birds Directive [Directive 79/409/EC] (European Union 1979)
- EU Sustainable Development Strategy (2001)
- Air Quality Framework Directive (96/62/EC) & daughter directives (99/30EC);
- (2000/69/EC); (2002/3/EC); (2004/107/EC)
- EU Noise Directive 2002
- EU Water Framework Directive (2000/60/EC), European Union
- EU Floods Directive (2007/60/EC)
- Aarhus Convention, United Nations Economic Commission for Europe (UNECE 1998)

National
- Air Quality Strategy, Defra (2007)
- Climate Change the UK Programme 2006 (DEFRA)
- Climate Change Act (2008) UK
- Securing the Future – Delivering UK Sustainability Development Strategy (2005)
- Sustainable Development Action Plan 2007-08
- Delivering a Sustainable Transport System (DfT 2008)
- Low Carbon Transport: A Greener Future (DfT 2009)
- PPS 1 Delivering Sustainable Development (2005)
- Draft PPS Planning for a Low Carbon Future in a Climate (2010)
- PPS 4 Planning for sustainable economic growth (2009)
- PPS 5 Planning for the Historic Environment and the PPS5 Practical Guide
- PPG15 Planning & the Historic Environment ODPM 1994
- The Historic Environment: A Force for Our Future – DCMS (2001)
- Transport and the Historic Environment, English Heritage (2004)
- The Government's Statement on the Historic Environment for England (2010)
- Strategic Environmental Assessment, Sustainability Appraisal and the Historic
- Environment, English Heritage (2010)
- PPS 9 Biodiversity and Geological Conservation (2004)
- UK Biodiversity Action Plan (1994)

- Natural Environment and Rural Communities Act (2006)
- PPS 12 Local Spatial Planning (2008)
- PPS 23 Planning and Pollution Control (2004)
- PPS6 Planning for Town Centres (consultation draft) ODPM 2003
- PPG13 Transport 2001
- PPG17 Sport, Open Space and Recreation
- PPG24 Planning and Noise (2001)
- PPS25 Development and Flood Risk 2010
- Draft PPS Planning for a Natural and Healthy Environment (2010)
- By Design: Urban Design in the Planning System (2000)
- PPG2 Green Belts (1995 and as amended March 2001)

London-wide
- The Mayor's Transport Strategy (2010)
- Draft Replacement London Plan (2010)
- The Mayor's Spatial Development Strategy (The London Plan) (2008)
- Developing a Sub-regional Transport Plan – Interim Report on Challenges and
- Opportunities – South London (2010)
- The Mayor's Economic Development Strategy (EDS) for London 2010.
- Water Matters – The Mayor's Draft Water Strategy 2007
- Catch up with the bicycle (Mayor of London 2009)
- The Mayor's Draft Health Inequalities Strategy 2010
- The Mayor's Draft London Climate Change Mitigation and Energy Strategy (2010)
- Connecting with London's nature - The Mayor's Biodiversity Strategy (2002)
- The Mayor's Municipal Waste Management Strategy (2003)
- The Mayor's Ambient Noise Strategy
- The Mayor's Air Quality Strategy
- Streets For All: A guide to the Management of London's Streets, English heritage (2000)

The policies above support each other in protecting and enhancing the environment.

3.3 National, London-wide and Local Transport Planning

Richmond LIP has been developed in compliance with National, London-wide and local transport planning. PPG 13 Transport (2001) provides national transport planning guidance. However, the Mayor of London has considerable autonomy in developing transport policy for London. Therefore, top-down guidance for the LIP comes mainly from the Mayor's Transport Strategy (MTS) 2010.

The MTS has the following goals:

- Supporting economic development and population growth
- Enhancing the quality of life for all Londoners
- Improving the safety and security of all Londoners
- Improving transport opportunities for all Londoners
- Reducing transport's contribution to climate change, and improving its resilience
- Supporting delivery of the London 2012 Olympic and Paralympic games and its legacy

Sub-Regional Transport Plans (SRTP) are being developed by TfL for each of the five London sub-regions. The LIP will outline how the Mayor's Strategy as outlined in the MTS and developing South London SRTP, will be implemented at a local level.

Other sector plans and programmes

In addition to environmental policies, and transport policies, the LIP has been developed with reference to and in adherence with other planning documents on a London-wide and Borough scale.

The Mayor's London Plan, for which a draft replacement was published in 2010, provides a framework for land-use management, development and regeneration in London. It outlines a vision for London to excel among global cities in terms of economic opportunities, environmental standards and quality of life. The priorities of the London Plan are as follows:

- Accommodate London's growth within its boundaries without encroaching on open spaces
- Make London a better city for people to live in
- Make London a more prosperous city with strong and diverse economic growth
- Promote social inclusion and tackle deprivation and discrimination
- Improve London's accessibility
- Make London a more attractive, well-designed and green city.

The LIP will make due consideration of the Mayor's London Plan.

In addition to the London Plan, the LIP has been co-ordinated with, and produced in adherence with, local Borough level plans. These include the Sustainable Community Strategy (SCS) and the Local Development Framework (LDF), which includes the Core Strategy, Site Allocations and Development Control Policies Documents.

The LDF will eventually replace the Unitary Development Plan, with the LDF comprising of a series of documents, the most important being the Core Strategy. The Core Strategy sets out the Council's spatial vision, strategic objectives and spatial strategy on how the Borough should develop over the next fifteen years along with core policies and information on monitoring and implementation. All these documents must be in general accordance with the London Plan. When adopted, they will, together with the London Plan, comprise the statutory development plan for the Borough.

The following table sets out the relationship of our four LIP2 Objects and how they related to the MTS Objectives, the Sub Regional Transport Plan Challenges and Richmond Council's Community Plan Priorities

Table 3 Summary Table: Relationship between Mayor's Transport Strategy and Community and Transport Strategies

MTS goals	SRTP Challenges	Borough LIP2 Objectives	Community Plan Priorities
• Supporting economic development and population growth	Challenge One – Reducing Public Transport Crowding Challenge Two – Improve access and movement	To support and maintain the economic vitality of local shops and the Borough's thriving town and local centres	Priority 6: Creating a vibrant and prosperous Richmond upon Thames Priority 4: Growing up

			in Richmond upon Thames
• Enhancing the quality of life for all Londoners	Challenge One – Reducing Public Transport Crowding Challenge Three – Improve connectivity to/from and within the South sub-Region (the „links")	Developing a transport system that is resilient and reflective of local needs and aspirations	Priority 2: Being the greenest borough in London Priority 5: Creating a healthy and caring Richmond upon Thames
• Improving the safety and security of all Londoners	Challenge Four – Manage Highway congestion and make efficient use of the Road Network	Improving safety for all road users	Priority 3: Being the safest London borough for all our communities
• Improving transport opportunities for all Londoners	Challenge Two – Improve access and movement to/from and within key locations (the „Place") Challenge Three – Improve connectivity to/from and within the South sub-Region (the „links") Challenge Four – Manage Highway congestion and make efficient use of the Road Network	Enhancing travel choice and reducing congestion Improve the accessibility, efficiency and attractiveness of transport Borough wide, thus increasing social inclusion.	Priority 1: Tackling disadvantage and inequalities Priority 7: Improving access and participation
• Reducing transport's contribution to climate change, and improving its resilience	Challenge Two – Improve access and movement to/from and within key locations (the „Place") Challenge Four – Manage Highway congestion and make efficient use of the Road Network	To improve the local environment and quality of life for all residents of the Borough.	Priority 2: Being the greenest borough in London

4. Richmond Context and Baseline

4.1 Context

The London Borough of Richmond upon Thames (LBRuT) covers an area of 5,095 hectares (14,591 acres) in southwest London and is the only London borough spanning both sides of the Thames. The Council is committed to protect our environment for future generations against the threats of pollution and global warming.

The main town centre is Richmond; there are four district centres at Twickenham, Teddington, East Sheen and Whitton and many smaller centres. Although the Borough is characterised by expensive private housing, there are significant numbers of people who are less well off and a number of areas which are relatively deprived.

The Borough comprises a group of urban areas based on former villages, divided by the Thames and interspersed by large areas of open space. Within this wider urban form individual places of character emerge due to particular landmarks or distinctive groupings of buildings and open space including historic landscapes such as Richmond and Bushy Parks and the Old Deer Park, the River Thames and the River Crane corridors and other tributaries. The special quality and character of the Borough has led to the designation of 72 Conservation Areas and over 1100 listed buildings.

As a result of the long history of development most of the open land is of historic landscape interest, including important avenues and vistas, and is also of nature conservation importance. Visitors come to major attractors within the Borough such as Kew Botanical Gardens, Hampton Court Palace, Richmond and Bushy Park, Richmond and Twickenham Greens, Richmond and Twickenham Riverside, Ham Lands, Petersham Meadows, the Old Deer Park, Barn Elms, the Wildfowl and Wetland Centre, and the Rugby Football Union at Twickenham and other sporting venues.

The service and retail industries consist mainly of small to medium size enterprises, located in and around Richmond's town centres and towards the south of the borough The borough has above average levels of deprivation, which further affects investment. However, it also has the lowest level of carbon emissions and the use of sustainable modes of transport is high. Richmond is strategically located, bordering on the heart of the City's financial district in the south of the borough, and the Docklands, Thames Gateway and the Olympic zone towards the east. The borough is one of the hosting boroughs of the 2012 London Olympics which will bring about employment opportunities and redevelop the area of Richmond Wick, positively impacting on the rest of the borough.

1.2 Baseline

As well as the information contained within this section, Annex A contains further Baseline data which also appeared in the LIP2 SEA Scoping Report.

Table 4: Population Estimates

Age	Male	Female	Total
0-4	6,021	5,926	11,947
5-14	9,956	9,469	19,425
15-14	9,664	9,804	19,468
25-34	16,214	15,575	31,789

35-44	16,220	16,022	32,242
45-54	11,443	11,830	23,273
55-64	8,741	9,205	17,946
65-74	5,177	5,835	11,012
75+	4,425	7,684	12,109
Total	**87,861**	**91,350**	**179,211**

Source: ONS mid Year Estimates 2003

2001 Census data suggests that compared with Greater London boroughs, Richmond upon Thames now has the eleventh highest proportion of people aged 65 or over, and the seventh highest of people aged 75 and over. The proportion of those aged 65 or over (13.7%) is in line with Outer London (13.8%) and marginally above that for Greater London as a whole (12.4%). However, the proportion of people aged 85 and over in the borough is one of the highest in London.

Ethnicity

Non-white minority ethnic groups
Richmond is one of the least ethnically diverse boroughs in London, with a non-white population similar to the average for England and Wales. Just over 9% of the borough's population is made up of non-white minority ethnic groups, the largest of which is Indian at 2.46%.

Table 5: Ethnicity

	Richmond Borough		London	England & Wales
	numbers	%	%	%
White: British	135,655	78.72	59.8	87.0
White: Irish	4,805	2.79	3.1	1.3
White: Other White	16,325	9.47	8.3	2.7
Mixed: White and Black Caribbean	670	0.39	1.0	0.5
Mixed: White and Black African	443	0.26	0.5	0.2
Mixed: White and Asian	1,530	0.89	0.8	0.4
Mixed: Other Mixed	1,154	0.67	0.9	0.3
Asian or Asian British: Indian	4,232	2.46	6.1	2.1
Asian or Asian British: Pakistani	664	0.39	2.0	1.4
Asian or Asian British: Bangladeshi	622	0.36	2.2	0.6
Asian or Asian British: Other Asian	1,151	0.67	1.9	0.5
Black or Black British: Caribbean	643	0.37	4.8	1.1
Black or Black British: African	829	0.48	5.3	1.0
Black or Black British: Other Black	142	0.08	0.8	0.2
Chinese or other ethnic group: Chinese	1,299	0.75	1.1	0.5
Chinese or other ethnic group: Other Ethnic Group	2,171	1.26	1.6	0.4

Source: Census of Population 2001, Key Statistics for wards, Table KS06 © Crown copyright

Table 6: **Percentage of People in Non-White Ethnic Minority Groups**

Ward	Percentage
Barnes	10.05
East Sheen	7.2
Fulwell and Hampton Hill	7.54

Ham, P'ham and Richmond Riverside	10.11
Hampton	6.81
Hampton North	9.86
Hampton Wick	7.47
Heath field	**16.21**
Kew	8.54
Mortlake & Barnes Common	7.08
North Richmond	10.08
St Margaret's & North Twickenham	8.43
South Richmond	7.97
South Twickenham	6.68
Teddington	6.95
Twickenham Riverside	7.0
West Twickenham	**10.94**
Whitton	**13.6**

Source: 2001 Census, Table KS06 © Crown copyright

Heathfield ward has by far the largest concentration of non-white ethnic minority groups (16.2%) living in the borough. Whitton and West Twickenham are also more ethnically diverse compared to the borough average, whereas Hampton is the least diverse. Further examination of the ethnic mix of Whitton and West Twickenham reveals that the most significant non-white ethnic group is Indian. Approximately a quarter of all Indians in the borough live in these two wards.

White ethnic groups
There is a significant proportion of Irish people living in the borough (2.79% of the population).

Almost 10% of the borough's population falls within the "white - other white" category. The following map shows a distinct contrast between the west & east of the borough. Barnes and South Richmond wards have a large proportion of residents in the "white-white other" category, 16.5% and 18.2% respectively. The group includes white people not classified as either "White British" or "White Irish".

Country of Birth
Country of birth data provides another source of information on diversity in the borough. Of those not born within the United Kingdom, the largest group are those born in Ireland, followed by the United States and India. A number of diplomatic residencies are located in Barnes and East Sheen and both a German School, and a Swedish School are located in the borough as well as the American University on Richmond Hill. Clearly there are significant numbers of people living in the borough who were born in Europe (excluding those born in the UK).

Table 7: Country of Birth Data

Country of birth	largest groups in borough (in terms of numbers)	% of borough residents
Ireland	3,361	2.0
United States	2,181	1.3
India	2,071	1.2
Germany	1,991	1.2
South Africa	1,876	1.1
Australia	1,657	1.0
Continent of birth:		
Europe (not UK)	13, 222	7.7
Western Europe (not UK)	11,299	6.6

Eastern Europe	1,923	1.1
Africa	5,043	2.9
Asia	8,156	4.7
North America	3,448	2.0
South America	804	0.5
Oceania	2,743	1.6

Source: 2001 Census of Population, Univariate Table UV08. © Crown copyright

Ward Level Country of Birth data

The cross tabulation of Country of Birth data with each of the 19 wards produces a complex picture which is difficult to analyse, as in many cases small numbers are involved. Even were a significant agglomeration appears to occur, it is unlikely to make up a significant population of the ward population itself. However, there are a number of trends:

- South Richmond and Barnes ward has the largest proportion of residents born outside of the UK (30.1% and 27.8% respectively) and outside of Europe (18.2% and 15.9%).
- South Richmond has more residents born in Africa than any other ward, almost half of which were born in South Africa. 18% of all residents born in the US are located in South Richmond ward. There is also a concentration of Australians and those born in New Zealand.
- 36% of people born in Sweden residing in the borough live in Barnes ward.
- People born in Ireland, the country with the largest population living in the borough, are well-represented across the borough with no obvious agglomeration in one place.
- A quarter of people born in Germany living in the borough reside in Ham, Petersham & Richmond Riverside and South Richmond ward.
- Whitton & Heathfield – significant numbers on a London wide scale born in Kenya.
- 13% of those born in South Asia live in Heathfield ward, and roughly the same proportion who were born in India.

Table 8: Migration Patterns

Richmond Upon Thames	Total	White	Asian	Black	Mixed	Chinese or Other
Outflows to rest of the UK	**12,818**	11,630	438	183	298	269
Inflows from rest of the UK	**11,812**	10,511	538	166	345	252
Inflows from outside of the UK	**4,078**	3,507	165	46	116	244
No usual address one year ago	**1,647**	1,387	91	38	60	71
Proportions by Ethnic group (%);						
Outflow to UK		90.7	3.4	1.4	2.3	2.1
Inflow from UK		89.0	4.6	1.4	2.9	2.1
Richmond Upon Thames population		91.0	3.9	0.9	2.2	2.0

Source: Office for National Statistics, 2001 Census,
Special Migration Table SMS103. © Crown copyright

The 2001 Census table shows that the population moving into the borough and out from it to the rest of the UK is broadly the same. There is no measure of the flows of population to destinations outside the UK for the same period, and therefore total flows are difficult to establish.

Disability
Greater London Authority analysis of Labour Force survey data for London 2001/2002 (Disabled People and the Labour Market) shows that 8.3% of the borough's working age population are both disabled and economically active.

The 2001 Census data shows that 12.4% of the borough's population has a limiting long term illness, health problem or disability which limited their daily activities or the work they could do (includes problems that are due to old age).

5.25% of the working age population are permanently sick or disabled. The England & Wales average for long term limiting illness is 18.2% and 13.6% for permanently sick or disabled respectively.

Deprivation

The ODPM's Index of Multiple Deprivation 2004 (IMD 2004) takes account of seven factors: income, employment, health deprivation and disability, education, skills and training, barriers to housing & services, and crime and living environment. Using this scoring, 60% of Borough wards were amongst the 25% least deprived wards in the country, however there are also pockets of relative deprivation in parts of Castlenau, Ham, Hampton Nursery Lands, Heathfield and Mortlake.

Housing

The Borough's housing is mainly in owner-occupation (68% according to the 2001 Census), with 15% rented privately, and 12% rented from a housing association. Affordability is a key issue, with house prices considerably higher than the London average. With the exception of the City, Richmond upon Thames has the highest average household income (£47,418, Paycheck 2007 CACI) of any London borough, but the ratio between earnings and house prices is such that first time buyers are unable to afford even the least expensive properties in the Borough. Affordability can have an impact in terms of overcrowding and poor quality housing, and also for the recruitment and retention of key workers, essential for delivering local services. Health

Borough residents have amongst the highest life expectancy at birth in the UK. Health indicators show that Borough residents generally take care of themselves with higher levels of healthy eating and exercise and lower levels of smoking than the national average. Deaths from smoking, heart disease and cancers are lower than the national average. The picture is more mixed in relation to numbers registered with severe mental health problems and the rate of road injuries and deaths, which are above the national average (but the latter is low for London). The five wards with relatively high levels of deprivation (Castlenau, Ham, Hampton Nursery Lands, Heathfield and Mortlake) have the worst health problems. The Borough is served by the West Middlesex Hospital and Kingston Hospital, both located outside the borough. Within the borough there are clinics and 9 day centres. Teddington Memorial Hospital also provides in-patient and out patient services and has a walk in centre for minor injuries.

Education

There are eight maintained secondary schools, 41 Borough primary and two special schools. The standards attained by pupils in LBRUT primary schools are above the national average, but those for the maintained secondary schools are slightly below the national average, with considerable variation within this average.

The secondary schools in LBRUT do not have sixth forms and over 16s generally attend Richmond College or other state post-16 establishments in nearby Esher, Kingston or the private sector. A number of other academic and vocational courses are also provided through Richmond College, Richmond Adult College, St Mary's University and other providers including the provision of training for those in or seeking employment.

There are a very high number of independent schools in LBRUT, which attract many pupils from outside the borough. Demand is very high for places in the Borough's schools, in particular the primary schools which are consistently at the top of the national league tables.

Employment & Commuting

Although there has been a consistent loss of employment land there has been a growth in jobs in the Borough since 2002 to a current level of 66,800 employees. The employment is concentrated in distribution, IT and other business activities, hotel and restaurants, finance, public administration, education and health. Manufacturing has declined and now provides only 4,000 jobs, and the unemployment rate is low at 3.3%. There are approximately 9,000 VAT registered businesses and new VAT registrations remain consistently high with around 100 new businesses a year.

Because of its position on the edge of London and close to Heathrow airport and good communication links, the Borough has high levels of both in and out commuting. In 2001, 62% (55,500 people) of all employed residents commuted out of the Borough to work, 38% (34,000 people) of the resident workforce both lived & worked in the Borough and 50% of the Borough's workforce (34,500 people) commuted into the borough to work. This represents a considerable amount of travel.

There are differences between the characteristics of those who commute into the borough to work and those who commute out. Three quarters of out-commuters are employed in a managerial, professional or technical jobs compared to only 56% of in-commuters. Out-commuters are likely to travel further to work, are more likely to use public transport and work longer hours. In-commuters have different characteristics, they are generally less skilled, more likely to work in the hospitality, retail and construction sectors, and are much more likely to travel to work by car.

There is a considerable amount of out-commuting eastwards towards Westminster and the City, and also westwards to Hounslow. The latter is also the largest supplier of labour to the Borough. Other neighbouring London Boroughs and Surrey districts are also key sources of labour for the Borough. This has implications for both the road and rail networks, the former being subject to heavy congestion along key routes in the morning and evening rush hours.

The Town Centres

Richmond is the largest town centre (defined as a major centre in the London Plan consolidated with alterations since 2004) and has a range of convenience and comparison shopping including a department store, is a major office location and has a well-developed entertainment sector, theatres and cinemas. The town has considerable historic interest, Richmond Green and the Thames side location making it an attractive destination for tourists. Public transport connections are good with both above ground and underground train services.

Twickenham is the next largest centre having a range of shops, offices, educational, community, leisure and entertainment facilities and is well served by public transport, including fast trains to London Waterloo. The shopping centre has a limited range of shops and the environment which is dominated by traffic is in need of some improvement. The presence of Twickenham Rugby ground brings visitors to the town, but can cause traffic disruption on match days. The most significant concentration of new development within the plan period is likely to take place within Twickenham and the surrounding areas to the North and West, including the Post Office Sorting Office, Richmond College, Harlequins, Central Depot, and Twickenham Station.

Teddington's main street stretches away from Teddington lock. It is historic and small scale, with two medium-sized food stores either side of the centre which has a range of smaller specialist non-food shops and restaurants. There is a range of employment, leisure and community facilities, and the proximity of Bushy Park and the Thames as well as good transport links makes Teddington a popular residential location.

East Sheen is a linear centre with one large supermarket and a wide range of non-food shops and restaurants. Mortlake is the nearest station and the Sheen Lane Centre houses a number of services including the library.

Whitton is in the west of the Borough having a medium size food store within the High Street as well as small-scale convenience and non-food shopping. There are community and educational facilities here, but relatively few offices compared to the other centres. The station is in the main street.

There have been improvements to all of the centres to make them more accessible to disabled people, but there still remains the need for further improvements both to the public realm and access to individual shops and services, pavement access and road crossing.

5.   The Aim of the SEA

The aim of the SEA Directive 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… with a view to promoting sustainable development, by ensuring that, in accordance with this Directive, an environmental assessment is carried out of certain plans… which are likely to have significant effects on the environment.' (Article 1)

The aim of the SEA is to identify risks, and make explicit the costs and benefits to the environment that might arise from the proposed strategy, in the interests of enabling the decisions made to take account of the implications for the environment.

5.1   Guidance on the Application of the SEA on the LIP

Guidance, prepared by the DfT on how to carry out a SEA for transport in England, is reported in Transport Analysis Guidance (TAG) (Unit 2.11) Strategic Environmental Assessment for Transport Plans and Programmes, issued in December 2004 and not updated since (www.webtag.org.uk). The SEA of Richmond's LIP2 is being carried out in accordance with this guidance.

The SEA Directive defines 'environmental assessment' as a procedure comprising:

- Preparation of an Environmental Report on the likely significant effects of the draft plan on the environment;

- Consultation on the draft plan and the accompanying Environmental Report;

- Accounting for the Environmental Report and the results of consultation in decision-making; and

- Providing information when the plan is adopted and showing how the results of the SEA have been taken into account.

The Directive's definition of 'environment' includes not only the natural environment and the historic environment, key aspects of the Borough, but also some human effects such as health and material assets. It also requires an analysis of a plan's secondary, cumulative and synergistic effects.

5.2   The Scoping Report

Richmond Council issued a Scoping report in February 2011 which identified the main areas of work required to meet the requirements of the SEA Directive. It set out the following:

- Environmental objectives of other relevant plans and programmes;

- SEA objectives and indicators;

- Key environmental issues in Richmond;

- Methodology for and the remaining stages of the SEA.

The SEA regulations require that consultation with stakeholders is an integral part of the SEA process, with feedback from these consultations being used to refine the plan and/or programme. A key requirement is that consultation takes place with the three consultation bodies (Natural England, the Environment Agency and English Heritage). All three organisations responded and these are set out in Appendix 1 of this report

5.3   Assessment Methods

A criterion-based method of strategic environmental assessment was used to identify and examine the risks to and opportunities for the environment associated with the Plan. The criteria used for the assessment are generic in nature, and relate to topics identified as important for environmental sustainability by policy at many levels and by European and UK law[1]. The criteria provide an analytical framework that enables:

- Assessment of significant risks of adverse environmental impacts and opportunities for beneficial environmental effects. The identification and evaluation of the significant risks and opportunities to which the different elements of the Plan might give rise.

- Assessment of risks of or opportunities for cumulative environmental effects. The identification and evaluation of the risk of the Plan giving rise to cumulative effects on the environment

The DfT's guidance describes a process which is essentially objectives-led and is based on combining and integrating the five stages of the Directive (see above) with DfT's New Approach to Assessment (NATA) framework. NATA is essentially an approach for improving the consistency and transparency with which transport planning decisions are made. It has been developed to present the key economic, environmental and social impacts of decisions in a clear, consistent and balanced way using an Appraisal Summary Table and associated worksheets. NATA is the basis for appraising multi-modal studies, Highways Agency road schemes, Local Transport Plans, major road and public transport schemes, Strategic Rail Authority schemes, seaports, and the Government's airport strategy. Further details of NATA are available in *The Appraisal Process* (TAG Unit 2.5) as well as Unit 2.11.

In line with this guidance, the SEA assessment framework comprises a set of objectives (benchmark intention), indicators (means of measuring progress) and targets (desirable state).

This SEA has been developed alongside the development of both the Draft LIP2 and will continue throughout its development until it becomes the finished LIP2 using the WebTag guidance.

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[1] Directive 2001/42/EC on the assessment of the effects of certain plans and programmes on the environment. Official Journal of the European Communities, L 197, 21/07/ 2001, pp 30-37. The Environmental Assessment of Plans & Programmes Regulations 2004, Statutory Instrument 2004 No. 1633, HM Government, London.

Where plans or programmes go through several successive consultation exercises, it is important to keep the implications for the Environmental Report under review to ensure that it remains consistent with the plan or programme on which opinions are being sought. If significant changes are made from the original proposals, the Responsible Authority will need to consider whether a revised Environmental Report is needed.

The Directive requires the information in the Environmental Report and the responses to consultation to be taken into account during the preparation of the plan or programme and before the final decision is taken to adopt it. Responsible Authorities must produce a summary of how they have taken these findings into account, and how environmental considerations have been integrated into the plan or programme, with enough information to make clear any changes made or alternatives rejected.

Information must also be made available on how monitoring will be carried out during implementation. The Environmental Report will already have documented proposed monitoring measures, and they can now be confirmed or modified in the light of the consultation responses.

The Directive requires the plan or programmes itself, when adopted, to be made available to the public and the consultation bodies, where these have been consulted. The guide assumes that all plans and programmes in the UK which are subject to the Directive are available under existing legal provisions or policies. It is for the responsible authority to ensure that arrangements are in place to inform the public and other consultees that the plan of programme has been adopted, and give them access to it if they are not provided with copies.

5.4   Consideration of the Habitats Regulation Act (HRA)

The Habitats Regulations transpose Council directive 92/43/EEC into UK law. Subsequent amendments to the Regulations require an assessment of the effects of the plans and programmes on European Sites of Nature Conservation prior to being adopted.

The Integrated Impact Assessment prepared for the MTS concluded that the majority of projects set out in the MTS are either already approved, and had been previously subject to HRA, or more appropriately assessed at a lower spatial level. However, it was also noted that it was not possible to conclude that the MTS would have 'no likely significant effects', and recommended that such projects should be more appropriately assessed at a lower tier in the planning process (e.g. at a sub-regional or project level).

There are no proposals in the LIP to develop transport infrastructure in or close to any environmentally sensitive areas such as wetlands such as the Thames river side or protected open landscape, including areas such as Richmond and Bushy Parks. It is also unlikely that the implementation of the LIP would lead to significant increases in noise, visual impacts or air pollution from traffic that would affect any such sites. On this basis, a detailed appropriate assessment of the effects on these and other sensitive sites will not be undertaken as part of this SEA.

5.4.1 Richmond Park

Richmond Park is an internationally important area for wildlife conservation and London's biggest Site of Special Scientific Interest (SSSI). A new conservation plan by the Royal Parks and Natural England is set to improve the park's biodiversity even

further, and give a major boost to progress against London-wide environmental targets.

The park is famous for its ancient trees, herds of deer and colourful gardens. What is less well known is that it has the most extensive area of natural grassland in London, or that the type of grassland – 'acid grassland ' – is a nationally rare habitat. The presence of grassland on acidic soils is one of the chief reasons for Richmond Park's designation as a SSSI.

The new 'Grassland Management Plan' aims to improve the park's acid grassland, which is home to many protected plant, invertebrate and bird species, and wildflowers such as tormentil, heath bedstraw and harebell. As a result of the plan, the percentage of London's SSSIs in 'favourable' or 'recovering' condition has jumped from 76% to 91% (by area), helping Natural England towards its goal of bringing 95% of England's SSSIs into target condition by December 2010.

A consultation is underway with local groups with the aim of an agreed plan taking effect in the autumn 2011.

5.5   Consideration of the Equalities Impact Assessment (EqIA)

With regard to the race, disability and gender regulations, it is a mandatory requirement that Richmond Council carries out an EqIA when drafting new policies. As a result, an EqIA is being completed for the LIP. The objective of the assessment will be to identify whether or not the LIP has a positive or negative impact on a particular equality target group, and to identify mitigation measures for impacts that will lead to any adverse affects.

The EqIA for Richmond's new LIP concluded that no individual population group was adversely impacted by the proposals set out in the new strategy. The finished EqIA is being consulted on alongside the draft strategy and this Environment Report. The results from this parallel assessment will be used to inform the SEA as appropriate.

6.   Assessment of Significant Effects

6.1   SEA Directive Requirements

The SEA Directive states that in the Environmental Report:

> "The likely significant effects on the environment of implementing the plan or programme …. and reasonable alternatives …. are [to be] identified, described and evaluated" (Article 5.1). "The Environmental Report should include information that may 'reasonably be required taking into account current knowledge and methods of assessment, the contents and level of detail in the plan or programme [and] its stage in the decision making process" (Article 5.2).

In addition, the SEA Directive requires the Environmental Report to outline measures to prevent, reduce and as fully as possible to offset any significant adverse effects on the environment of implementing the plan or programme.

6.2   Recent Trends

The following paragraphs summarise the transport trends which have been identified as being of key importance to the borough and have an effect on the environment of Richmond that the SEA seeks to address. These trends have helped inform what schemes and programmes that Richmond has prioritised.

Traffic Growth & Congestion

As with many boroughs, the primary concern is about the capacity of the main road network in relation to demand and the consequent diversion of traffic from the main roads onto less suitable local and residential roads. Noise, pollution and potential safety issues arising from rat running continue to be a matter of concern, even where traffic calming measures have been implemented to mitigate the effects.

As an outer London Borough the transport facilities are reasonably developed, with the A316 (Great Chertsey Road) and A205 (South Circular Road) trunk roads (part of the Transport for London Road network), running through the Borough.

In addition to environmental concerns, congestion on the road network has an adverse impact on economic activity and can make areas less attractive to live in.

Car Ownership

High car ownership within the borough combined with high rates of through-commuting results in congestion on local roads. The 2001 Census suggests that 76% of households in the borough have access to a car. (England & Wales average of 73.2%). Overall, between 1993 and 1997 there has been a 7% increase in vehicle flows on roads in Richmond upon Thames. An air quality management area has been declared for the whole borough.

6.3   Method

Existing SEA guidance recognises that the most familiar form of SEA prediction and evaluation is generally broad-brush and qualitative. It is also recognised that quantitative predictions are not always practicable and broad-based and it is recognised that qualitative predictions can be equally valid and appropriate. Examples of the prediction and evaluation techniques for assessing significance of effects are expert judgement, dialogue with stakeholders and public participation, geographical information systems (GIS), reference to legislation and regulations and environmental capacity.

The evaluation involved forming a judgement on whether or not the predicted effects will have a significant impact on the SEA objectives. The method that has been primarily used to assess the significance of effects in this assessment is a qualitative one based on expert judgement.

The appraisal carried out has indicated that the proposed programme will mainly deliver positive environmental benefits. The assessment has not indicated that any schemes should be removed from the programme on environmental grounds but it has indicated that the delivery of the programme will require care to minimise or where possible, eliminate any adverse effects.

The assessment of significant effects was undertaken for the LIP2 proposals and also addressed the effects resulting in the accumulation of multiple small effects (cumulative effects) arising from the schemes and measures.

6.4   Impact on Baseline Issues

The impacts of the Plan on the baseline issues have been considered in more detail and the most relevant are set out below. The SEA assessment demonstrates that the LIP will have few significant adverse environmental effects. This is largely the continuation of the framework of policies, plans and programmes put in place in Richmond for the first LIP and this will generally bring about more environmental improvements than not.

6.4.1 Air Quality
In air quality terms, the Borough's south west London location means that the prevailing south westerly wind (roughly 75% of the year) brings in relatively fresh air to the Borough, before it blows towards the centre of London. In practice, the wind blows from all points of the compass and includes receiving polluted air blowing out from the centre of London. This explains why the Barnes end of the Borough receives a higher proportion of London air, with consequent higher background pollution levels. The main source of pollution is traffic related. As a result, Richmond Council is keen for air quality to be improved not just in the Borough but also across the whole of London. Some of the Action Plans actions are cross-Borough, with the West London neighbours, or are cross-London initiatives.

6.4.2 Noise
Noise impacts from transport are a problem principally in residential areas where there is a high traffic density, especially on routes where there is a high proportion of heavy

goods traffic. As regards aircraft noise, broadly speaking, residents in the north of the Borough (Barnes, Sheen, Mortlake, Kew, and Richmond) hear the noise of aircraft as they land to the west of them. Whereas residents in Twickenham, Teddington Whitton and the Hamptons, hear the noise of aircraft taking-off from an easterly direction.

Many residents of the Borough are concerned at the relentless expansion of Heathrow, with the attendant air pollution and noise pollution. The new coalition government (2010) has now confirmed that there is no longer a policy for a third runway and BAA have confirmed that they have stopped work on their third runway planning application. However, there may yet be pressure for more night flights and to expand the airport in other ways. The Council is aware that this causes great concern for many residents and is committed to opposing the intensified use of Heathrow.

The exact amount of noise resulting from transport improvements will vary considerably from scheme to scheme. The noise impacts need to be included within the overall assessment of all actions and measures of any scheme. Roads benefiting from traffic access restrictions will experience reductions in noise, as traffic is restricted away from these areas. However new roads may generate extra traffic and so lead increases in noise from traffic. Junction improvements can bring improvements in noise levels by increasing the flow of traffic, by reducing the noise from engine idling caused by congestion.

There is anecdotal evidence to suggest that high levels of noise can impair children's concentration at school and affect their educational performance. Badly maintained roads can lead to increased levels of noise. The gradual introduction of tarmacs that produce quieter surfaces should be focused where there are most benefits to residents.

6.4.3 Climate Change

The Climate Change Act promotes decentralised energy and energy efficiency through the planning process. This is supported by the draft Planning Policy Statement 'Planning for a Low Carbon Future in a Changing Climate', its predecessors, Planning Policy Statement 22 on Renewable Energy and Planning Policy Statement 1 Supplement on planning and climate change, the Energy Act 2008 and the London Plan 2008.

The Council seeks to minimise climate change and reduce a number of harmful environmental impacts such as domestic energy use and car borne emissions within the Borough. The proposed approach will encourage measures for sustainable buildings minimising the use of energy and other resources, taking account the likely impacts of climate change, and promote sustainable travel. Development that incorporates energy efficiency measures, reduce waste, utilises renewable energy, in locations with convenient access to facilities and employment thereby minimising the need to travel, and avoiding those areas liable to flooding, will help to meet climate change.

The costs of immediate action to combat climate change often result in valuable savings. For example improved energy efficiency means fuel savings and lower utility bills, better insulation may result in more comfortable homes, and for businesses, investment in energy efficiency and reducing waste can be offset by lower operating costs.

One impact of climate change is potentially increased flooding, see below.

6.4.4 Air Quality Action Plan

Richmond Council's Air Quality Action Plan (AQAP) was required under Part IV of the Environment Act 1995. The Council decided to declare the whole of the Borough as a single Air Quality Management Area (AQMA). This was declared in a formal notice dated 31st December 2000 following a review and assessment of air quality in the Borough. The Review concluded that the National Air Quality Strategy objectives for 2005 would not be met for two pollutants, NO_2 and PM_{10}.

The purpose of the AQAP is to ensure that the Council can plan and manage appropriate actions to improve air quality within the Borough. It is not a legal requirement to actually achieve the National Air Quality Objectives; however the action must be in pursuit of achieving the objectives.

Under the Act, local authorities that have declared an AQMA are required to undertake a further 'Stage 4' assessment, to refine the detail of the previous assessment and to assist with targeting the action required to improve the air quality. The 'Stage 4' review was completed in May 2002, following a revision of the traffic forecasts and using a new emissions inventory for London.

In February 2007, the Air Quality Standards Regulations 2007 (OPSI, 2007) came into force with objective limits set for 2010. The limits remain the same as the PM_{10} (2004) and NO_2 (2005) limits, so the LBRuT is still obliged to try to meet those objectives.

The 2010 Monitoring Report indicate that the results from monitoring in 2009 show that the concentrations of PM_{10}, CO, SO_2 and benzene were each below their relevant objective limits.

NO_2 concentrations were found to exceed the objective of $40ug/m^3$ at most of the locations monitored. In addition, the borough-wide modelling for 2010 also confirmed these widespread exceedences. Both of these conclusions indicate the continuing need for the LBRuT to remain designated as a borough-wide AQMA for NO_2. This conclusion remains true when façade level corrections are made, indicating that there are still exceedences, when assessed for vulnerable receptors.

PM_{10} monitoring results show that the annual mean PM_{10} and daily mean PM_{10} limits were not exceeded at any site in the Borough during the three years up to 2009. However, the 2010 modelling indicates that we should expect the objectives to be exceeded at a few vulnerable receptor sites. On that basis it is thought best to retain the AQMA designation for PM_{10}, at the time of writing this Report.

6.4.5 Biodiversity, Flora, Fauna and Soil

Richmond has an enormous wealth of wildlife (biodiversity). Maintaining the Borough's high quality environment and unique areas of biodiversity can contribute to quality of life and protect the natural environment. The Richmond Biodiversity Partnership has been established and has developed a Local Biodiversity Action Plan (LBAP), designed to enable the borough to move forward with a clear set of targets and costed actions to conserve its priority habitats and species. Generic issues to be addressed as the LBAP evolves include accessibility, public consultation and problem species.

The key to the success of the Biodiversity Action Plans is their implementation. We are fortunate in having the support of many local groups, individuals, statutory agencies

and land managers who work together to play an important role in the protection and enhancement of the Borough's numerous species and habitats.

Impacts on soil include the loss of productive areas and erosion of soils due to construction activities and maintenance of the transportation infrastructure, as well as contamination from current use of de-icing and other chemical agents, and past contamination from lead in vehicle exhausts and other toxic land uses and processes. Richmond upon Thames's contaminated land strategy sets out our approach to implementing our duties under the Environment Act 1995.

The green open spaces (rural, local and urban), islands and rivers are of great importance as wildlife habitats, and provide a range of both active and passive recreational activities. They also contribute in a major way to the character of the Borough, making it one of the most attractive in London.

6.4.6 Landscape

Richmond upon Thames is exceptionally lucky in supporting a wealth of different habitats and landscapes, several of which are important on an international scale. Public open space covers a third of the Borough and includes the following nature conservation sites:

• Richmond Park (NNR, Site of Special Scientific Interest, SSSI);
• Other Sites of Nature Importance (OSNI);
• Five local Nature Reserves, including Crane Park Avenue, Oak Avenue, Ham Lands, Lonsdale Road Reservoir and Barnes Common;
• Tree Preservation Orders on many trees within the borough;
• 70 Conservation Areas (wherein trees are protected)

Richmond Park is a site of both national and international importance for wildlife conservation. It is London's largest SSSI, a National Nature Reserve and a European candidate Special Area of Conservation. The Park is a foremost UK site for ancient trees, particularly oaks. The trees and associated decaying wood support nationally endangered species of fungi, as well as a remarkable range of nationally scarce invertebrates such as the cardinal click beetle and the stag beetle.

The Borough is particularly fortunate in having such an extensive and attractive riverside. It is the only Borough with land on both sides of the River Thames and in order to strengthen its identify and not detract from its appeal, standard solutions to street scene and public spaces may not be appropriate. Issues relating to the riverside have also include specifically items of street furniture and paving.

Most of the riverside is within conservation areas and many locations contain listed structures. Many key views in the Borough are associated with the riverside. Conservation area studies will indicate detailed proposals and policies and at time of writing most of these have been completed for riverside locations.

6.4.7 Townscape

The Council has a strong commitment to promote good quality new design and preserve the special interest, character and setting of the Borough as a whole. The Borough has nearly 1200 nationally 'Listed Buildings' and many 'Buildings of Townscape Merit' which all contribute to the much loved heritage of the Borough. A significant urban design work programme of Environmental Improvements to the Richmond and Twickenham town centres and along the River Thames, and areas in

Heathfield, Ham, Hampton Nurserylands, Castelnau and Mortlake are being taken forward.

A local independent 'Design Panel' to assist the Council in the assessment of significant or sensitive planning proposals has been running since November 2005. This concept is widely endorsed by Government and professional organisations to raise awareness of good urban design and get the right kind of new buildings which suit the Borough's local context.

Schemes associated with traffic calming and management can adversely affect the character and appearance of historic features and areas through the introduction of poorly designed and sited infrastructure and signage, and the use of inappropriate materials. In the design and implementation of all transport schemes, the underlying aim should be to ensure that the proposed measures are integrated sensitively into the surrounding townscape so that the local character is reinforced, rather than eroded. However, such schemes will reduce the negative impacts of traffic and these need to be balanced against negative impacts on the Borough's townscape.

More generally, it is recommended that the LIP should incorporate overarching design principles. In many cases the cumulative impact of smaller scale projects on the character and appearance of an area can often be as damaging as larger single schemes. In order that all applications for new developments meet minimum design standards, Richmond has produced its Public Space Design Guide.

6.4.8 Historic and Cultural Heritage

Richmond has a rich historic environment which provides a range of cultural, social and economic benefits to the local community and makes a significant contribution to the Borough's local distinctiveness. Transport related interventions and activity can have a range of impacts on the historic environment and where they are identified monitoring will be introduced.

At the level of the LIP programme as a whole, there are no systematic impacts on the Borough's historic and cultural heritage. However, such impacts need to be considered during the development and appraisal of schemes in the programme. As part of the appraisal process all designated historic assets should be considered, including the site and setting of Scheduled Monuments and other important remains, listed buildings (grades I & II), conservation areas, registered parks and gardens of special environmental interest. It is also important that the historic environment is broadly defined, and potential impacts on non-designated features of local historic interest and value are fully considered since these can make an important contribution to creating a sense of place and local identity.

It is anticipated that the LIP programme will have a neutral or positive impact on the physical conditions of the Borough's cultural heritage by reducing air pollution, traffic volumes and vehicle speeds so reducing the erosion of stone works and reducing the impact of traffic on the settings of historic land marks within the Borough. Also improvements in accessibility will be achieved through measures contained within the LIP.

The use of traffic calming measures, street furniture and signage should also be carefully considered to avoid unnecessary negative impacts in sensitive historic and conservation areas.

As a rule officers of Richmond Council are guided in their work by "Planning for the Historic Environment (2010)", "Historic Environmental Planning Practice Guide (2010)" and the Government's "Statement on the Historic Environment (2010)"

6.4.9 Archaeology and Geology

Archaeological remains are intrinsically finite and are non-renewable resources, which once destroyed cannot be created. At the level of the LIP programme as a whole, there are no systematic impacts on Richmond's historic and archaeological heritage. However, any such impacts need to be considered during the appraisal of individual schemes in the programme.

6.4.10 Water Quality, Resources, Flood Risk and Surface Water Drainage

The River Thames flows through the borough past open stretches of woodland and parkland, Victorian industrial waterfront and urban frontages. There is public access to much of the riverbank in the borough either by towpath or riverside open space. Significant areas are already at risk of flooding from the River Thames and the Beverley Brook and this is likely to increase in the future (see later section on climate change).

Other main rivers within the borough include the River Crane, the Longford River and Beverley Brook.

Water quality in the River Thames is vital for the survival of fish, especially in summer months. Storm water can overwhelm the sewers leading to high levels of organic matter discharging into the rivers, oxidised by bacteria. If the river flow is low and the temperatures high the oxygen content is rapidly depleted and fish die. The Rivers Crane and Duke of Northumberland are also of high wildlife value but there is room for improvement in those parts of the borough where the Crane has been channelled into a concrete-lined open conduit.

The Beverley Brook, starts its life at Worcester Park Sewage Treatment Works (STW) and runs besides Wimbledon Common before entering the borough at Richmond Park and thence through Sheen and Barnes. It leaves much to be desired and is officially classified as 'poor' in terms of river water quality. Thames Water Utilities propose to solve this problem by closing the Worcester Park STW, treating all sewage at Hogsmill STW in Kingston, and then piping the treated water back to the Beverley Brook.

There is scientific evidence that run-off from road surfaces carries contamination of oil and other hydrocarbons and metals from tyre rubber, exhausts and catalysts. In some areas run-off from major roads does cause harm to adjacent watercourses. However in Richmond upon Thames run-off from roads is taken into combined sewers to sewage treatment works and then to the Thames. Resulting pollution of the Thames from roadrun off would normally be minimal. During heavy rain episodes storm-water overflows do flow directly into the Thames and road run-off would make up part of the pollution burden.

Policies to reduce flood risk by locating new development in areas of lower risk, encourage sustainable drainage and maintaining flood defences all have a direct positive impact on water sustainability objectives, as do the policies to protect water resources and infrastructure and ensure water and sewage provision.

6.4.11 Environmental Impacts of Vehicles

Precious environmental resources can be wasted, and environmental damage caused, by the use of aging vehicles that operate inefficiently, and depending on how vehicles are disposed of at the end of their useful life. The 'End-of-Life' vehicles directive lays down minimum standards for the disposal of vehicles. However, abandoned vehicles often get set alight or vandalised. Early collection of vehicles nearing the end of their lives can provide a number of benefits, such as:

- Removing older, noisier and more polluting vehicles from the roads
- An opportunity to recover materials from vehicles, which can be reused or recycled
- Helping reduce the number of vehicles abandoned, reducing the visual intrusion, danger and nuisance effects associated with this.

The Council may consider whether the LIP should promote incentives for scrapping older vehicles.

6.4.12 Maintenance and Material Assets

A well maintained highway network with quality materials chosen to be in sympathy with their surroundings will have a positive impact on Richmond's streetscape and the settings of its important buildings and landscapes.

The SEA assessment of Richmond's LIP programme, and alternatives to the LIP, has examined potential adverse impacts of the schemes on Material Assets.

6.4.13 Human Health

The environment that people experience plays a large part in their quality of life, with a poor environment being a significant factor in multiple deprivations. While it is not straightforward to quantify the quality of the environment, looking at factors such as air pollution can be used to help identify areas where populations are at greater risk of social exclusion through poor health and environment. The Human Health component of the SEA looks at a wide range of conditions to measure and establish the baseline. This includes road traffic accidents, health deprivation, and crime and disorder deprivation.

6.5   Positive Effects

A significant majority of the impacts of the LIP are positive. The main areas which benefit from the policies and plans in the new LIP are those relating to townscape, conservation of historic resources, journey ambiance, accidents, wider economic impacts, access to the transport system, transport interchange and the support of land-use and other governmental policies. There are other less significant benefits are also seen in connection with noise, local air quality, biodiversity, reduced visual impacts, physical fitness, security and reducing community severance.

Environmental considerations have informed the chosen option and become fully integrated into the final LIP2 plan.

6.6   Negligible and Negative Effects

Any new transport infrastructure or development on flood plains should incorporate sustainable urban drainage systems (SUDS). Any future development in flood zones without SUDS will exacerbate the risk of flooding, water pollution and water resources issues, which will increase the risk to life and damage property.

Particular care should be taken on design of measures in Conservation Areas, including design and siting bus shelters and associated facilities as these could be detrimental to the setting of historic monuments. New walking and cycling facilities again may have a similar negative effect. New lighting around new developments, particularly again associated with the Olympic and Paralympics games also may cause lighting pollution to rise in surrounding areas. Also new bus infrastructure may also incorporate new lighting.

Schemes, particularly where these involve capacity increases, may make other, less suitable routes, more attractive and so impose higher levels of traffic on previous tranquil and lightly trafficked areas.

7. Environmental Topics and Baseline

7.1 Environmental Topics Covered by the SEA

With regards to determining a plan's likely significant environmental effects the 2004 Regulations require that the following topics be addressed:

- Biodiversity, fauna and flora;

- Population;

- Human health;

- Soil;

- Water;

- Air;

- Climatic factors;

- Material assets;

- Cultural heritage; and

- Landscape.

The Regulations also require that the inter-relationships between these topics are considered as well as any secondary, cumulative and synergistic effects, where appropriate.

It is important that the scope of the SEA for Richmond's LIP2 covers the topics required both by the 2004 Regulations and the NATA Environmental sub-objectives.

7.2 Approach to Baseline Data Collection

The use of baseline environmental data provides the basis for prediction and monitoring of environmental effects, and helps to identify problems and alternative ways of dealing with them.

The level of detail of the environmental baseline data collected for the SEA varies depending on the topic under consideration but has been pitched at a level considered appropriate for considering the strategic environmental effects of the LIP2 during the assessment process. In general, this has been pitched at a county level in order to facilitate the identification of wider environmental problems and opportunities facing the County that may be relevant to the LIP2, and in order to gain an understanding of any future trends.

Other than consulting existing databases within Richmond Council, the key sources of baseline data are provided in Table 4.

Table 9 Key sources of Baseline Data

SEA Topic	Data Source
Population and Human Health	National Office of Statistics
	2001 National Census
Air Quality	DEFRA website
	Environment Agency website
	National Air Quality Strategy
Climatic Factors	
Biodiversity, Fauna and Flora	English Nature
	DEFRA
Landscape	Public Space design Guide
	Sustainable Construction Checklist SPD 2006
Cultural Heritage	English Heritage
	Sites and Monuments Record
Water	Environment Agency
Geology and Soils	
Material Assets	

7.3   SEA Framework

The SEA Directive does not specifically require the use of objectives or indicators in SEA, but objectives can usefully demonstrate how environmental effects can be described, analysed and compared. A plan's performance against objectives can be measured using indicators. The SEA objectives are meant to be separate from LIP objectives, though the two influence each other and may overlap.

For the most part, the application of the NATA Sub-objectives and the 2004 Regulation topics to the LIP2 SEA is relatively straight forward. However, there is some interpretation required in terms of the technical scope for the material assets, population and human health topics.

Table 10: Topics to be addressed by the Richmond LIP2 SEA

NATA Objective	NATA Sub-Objective	2004 Regulation Topics
Environment	Noise	Population, human health
	Local Air quality	Population, human health
	Greenhouse Gases	Climatic factors, material assets
	Landscape/Townscape	Landscape
	Heritage	Cultural Heritage
	Biodiversity	Biodiversity, fauna & flora
	Water Environment	Water, soil
	Physical Fitness	Population, human health
Safety	Accidents	Population, human health
	Security	
Accessibility	Community severance	Population
	Access to transport system	
Economy	Public accounts	Material assets
	Business users and providers	
	Consumer users	

There is much overlap between the NATA and 2004 Regulations topics with regards to population and human health, mainly relating to noise, air quality, physical fitness and safety. These objectives have therefore been considered together during collection of baseline data with Air Quality including climatic factors and Population and Human Health covering noise, physical fitness and safety.

Although material assets are not explicitly covered by NATA, for the purpose of this SEA this has been interpreted as the potential effects on natural resources, property and businesses where an economic impact may be incurred. As a result, the technical scope of this topic includes energy, brownfield land, housing, businesses and employment.

To fulfil the requirements of the SEA Directive, the objectives must cover the SEA topics outlined above. In developing the SEA Objectives for the LIP, the NATA environmental objectives along with other environmental objectives and policies from various Richmond plans and strategies have been adopted.

8   Strategic Alternatives

8.1   SEA Directive Requirements

The SEA Directive (2001/42/EC) states that:

> "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 geographical scope of the plan or programme, are identified, described and evaluated" (Article 5.1)

It also notes that one of the issues that must be covered in the Environmental Report is:

> "an outline of the reasons for selecting the alternatives dealt with." (Annex 1b)

The SEA should consider alternative scenarios for the overall management of transport in Richmond to ensure that the range of likely significant environmental impacts of the LIP2 are addressed during the preparation of the plan. It also assists in explaining to decision makers and consultees why these measures, and no other, are being put forward. DfT guidelines also states that alternatives can be different ways of:

- Achieving the objective of the plan;
- Achieving the aspirations of the local community;
- Dealing with environmental problems; and
- Dealing with transport problems.

One situation which needs to be considered in all SEAs is the likely expected evolution of the environmental baseline conditions without the LIP.

The identification and comparison of alternative strategies is a key aspect of the SEA process. This is seen as being essential to ensure that the likely significant environmental effects are addressed during the preparation of the plan and also to explain why particular strategies and measures are included and why others are not.

The Scoping Report set out a series of Sustainability Objectives which have evolved into the SEA Objectives.

8.2   Alternatives

Alternatives are the range of rational choices open to the plan and programme-makers for delivering plan objectives. The SEA regulations do not create a specific requirement to put forward alternatives, but it is common practice when developing a plan or programmes to propose different ways of fulfilling its objectives. Where this is the case, the SEA regulations do require that the environmental effects of such alternatives be considered. As part of the standard SEA process, the alternatives can be tested against the SEA objectives, to identify better or worse for the environment. Better alternatives are those that have more positive and fewer negative environmental effects (particularly fewer long-term and/or irreversible negative effects). There should also be less uncertainty associated with their implementation.

Unlike many other statutory plans that must undergo SEA, in preparing our LIP, we are more restricted in determining alternatives. Transport for London's LIP guidance specifies that the LIP's must follow the Mayor's Transport Strategy (MTS) and set its objectives and strategy closely in line with this. It is quite specific, aimed at achieving the Mayor's priorities for London.

If we have reasons to eliminate any alternatives; these should be documented (as required by article 9 (1(b)) of the SEA Directive). As the responsible authority, we should also document reasons for not considering seemingly attractive or practicable alternatives. Justification for these choices should be robust, as they may have to be defended in court.

8.3 With the Plan

The transport needs of Richmond have been largely addressed within the Borough's programme of works. These are presented in the LIP2, and will be carried out within the Borough subject to public support and funding.

The proposed works in LIP2 have been addressed in detail in this Environmental Report and are presented in tables 12 to 19 below. It concludes that the vast majority of the schemes will be either beneficial or have no impact on the environment. Where the effect is uncertain, this is due to the lack of detail and data available at this stage of the scheme's development. Where there maybe increased numbers of buses, local residents may suffer higher noise levels, particularly early in the morning and later in the evenings.

8.4 Without the Plan

'Without the plan' is the business-as-usual scenario. It excludes specific LIP transport projects, but includes the other projects and developments which Richmond is implementing as part of its former UDP, or as part of the new LDF. It is important to note that the development of the 'without plan' scenario could lead to significant variations from a more simplistic analysis of national or local trends. Work to develop the 'without the plan' scenario will also provide useful context for identifying potential cumulative effects.

8.5 Predicting the Effects of the Draft Plan

Predicting the effects of the LIP has involved examining each strategy and scheme of the LIP2 programme's measures set out in the Appraisal Tables 12 to 19. This process has included:

- Identifying the changes to conditions in the 'without the plan' scenario which are predicted to rise from the strategies and measures. These were compared with each other and against the 'without the plan' scenario in the relevant assessments.

- Describing these changes can be in terms of their magnitude, their geographical scale, the time period over which they will occur, whether they are permanent or temporary, positive or negative, probable or improbable, frequent or rare, and whether they are secondary, cumulative and/or synergistic effects.

This provides the basis for the evaluation of impact significance.

Predictions do not have to be expressed in quantitative terms, though it is often possible to give quantitative but imprecise answers. Testing the accuracy of predictions is particularly useful where the plan's effects are uncertain, close to a threshold, or cumulative. Where we have qualitative predictions, they should be and we will strive to provide supporting evidence, such as reference to any research, discussions or consultation. Assumptions, for instance about underlying trends or details of implementation should be stated. The Environmental Report documents any identified limitations found or experienced.

Where the LIP2 included individual measures that have been subjected to individual appraisal and accompanying project level environmental impact assessment (EIA), depending on their timing and scale, these will be included and where these are to be provided at a later date during the lifetime of the LIP2 they will be added when prepared as part of the monitoring regime. However, the availability of such information should not dominate the plan-level predictions – the SEA should focus on the plan as a whole, not on individual measures.

The SEA Directive requires an assessment of secondary, cumulative and synergistic effects. These are particularly important in transport planning: one transport measure often relies on other related measures to be effective, many impacts of transport are cumulative (e.g. greenhouse gas emissions), and transport measures can have indirect impacts (e.g. traffic generation by new roads). Where a measure or scheme is subject to significant cumulative effects it may be necessary to revisit the LIP2 to identify ways of reducing these effects.

It has been important to assess the distribution of effects: who wins and loses under each strategy. The environmental effects upon communities may be presented in terms of effects upon different groups which may be categorised by where they live, or by other attributes to do with age, car ownership and so on.

8.6 Cumulative Effects

Many of the proposals in the LIP2 programme have a number of inter-related effects. An example of this is where we reduce traffic congestion along a road or over a wider area, can induce demand as speeds along the clearer roads becomes faster. This then has the effect of increasing air pollution over all from the additional traffic, though possibly decrease air pollution in a specific locality.

All schemes which improve road safety improve human health by reducing accident levels. At such locations, more people tend to walk and cycle more thereby also improving human health. As speeds slow down and drivers' journeys are smoother, fewer pollutants are emitted and noise and community severance is also reduced.

Slower traffic speeds across the network improve human health as accident numbers reduce. However, where congestion is associated with the slower traffic, air pollution can increase as can community severance. Areas with low volumes can also act as an inducement to increase traffic levels thereby increasing air pollution.

Making people more aware of the biodiversity, fauna and flora tends to increase how much they care about these issues. However large visitor numbers can also destroy such environments and therefore increasing visitor numbers need to be managed carefully. In addition, when schemes are introduced in such locations, materials will be

used which are sensitive to the environment and so will provide greater protection for some species. Where necessary, materials will be changed and schemes revised to minimise the cumulative environmental impact.

All impacts of climate change are likely to be cumulative and permanent and are considerably impacted by traffic levels.

8.7 Mitigation and Enhancement Recommendations

The SEA guidance for LIPs recommends that the opportunities for mitigation should follow the 'mitigation hierarchy'. This begins with measures for avoidance/prevention, to reduction, and finally measures aiming to offset impacts. Possible suggestions include:

- Changes to the programme, such as adding, deleting or refining projects
- Technical measures required for the implementation stage, e.g. buffer zones
- Application of design principles and/or requirement of sub-contractors to have an Environmental Management System (e.g. maintenance contractors)
- Establish a 'no net loss' principle to compensate/offset construction over sensitive land
- Requirements for project environmental impact assessments for certain projects if appropriate.

Specific measures that could be incorporated into the policies and proposals set out in Richmond's LIP2 are discussed in the following paragraphs.

9. Monitoring

9.1 The Purpose of Monitoring

Monitoring is the systematic measurement of a parameter in terms of magnitude, time and space. Monitoring is not limited to quantitative or technological measurements, and may include qualitative issues such as severance or landscape quality.

Monitoring can be used to answer questions such as:

- Is the plan contributing to the desired environmental objectives and targets?
- Is the plan performing as well as expected?
- Are (mitigating) measures performing as well as expected?
- Are there and undesirable environmental effects? Are these within acceptable limits, or is remedial action required?

This process is beneficial to the Local Implementation plan because it allows any significant environmental effects of the plan's implementation to be identified and dealt with early on in the planning process. It allows the actual effects of the plan to be tested against those predicted in the SEA, and can provide baseline information for future plans.

9.2 Monitoring for the SEA

To develop a monitoring strategy, the guidance suggests we must address the following questions:

- Determine what needs to be monitored;
- Identify what sort of information is required;
- Identify existing sources of monitoring information;
- Identify and fill any gaps in existing information;
- Determine when remedial action would be required and which actions could be taken; and
- Develop a management plan outlining responsibilities, timeframes and presentation.

Monitoring should focus on any significant environmental impacts that give rise to irreversible impacts upon environmental attributes in the area. This SEA found very little evidence of significant environmental impacts as a result of measures within Richmond's Second Local Implementation Plan. Where adverse impacts have been found, mitigation measures were presented to minimise these impacts, so no change to the plan was advised in the Environmental Report. Therefore, given the lack of significant impact on the environment that the plan entails, no monitoring for the SEA is necessarily required.

When monitoring reveals that remedial action is required, the appropriate measures are enacted. Criteria or thresholds will therefore need to be established as part of the strategy, which can trigger action if they are exceeded. As and when gaps appear in data sets, new data will be collected. However, it should be noted that no primary data

collection is necessarily appropriate for this level of monitoring, and is not required for compliance with the Directive.

10. Conclusion

The purpose of this report has been to document the strategic environmental assessment of the policies and strategies that have been prepared for the LIP2 and to document how the SEA process has been integrated into its development.

In doing so, the report has included the baseline planning and environmental context that has been used to identify the environmental problems and opportunities facing the Borough. The SEA Objectives that have been used to assess the potential effects of the plan are also provided, together with an assessment of the vision and objectives for the LIP2 and policies contained within it.

Overall, there are no adverse effects on the SEA objectives as a result of the implementation of the LIP2 predicted, although in some cases mitigation would be required on implementation of some measures to ensure that indirect residual beneficial effects result. The SEA does not recommend that there is a need for any schemes to be added or removed from the LIP2 agreed programme. The recommendations for improved practice from the SEA are as follows:

- Measures should be kept to a minimum consistent with meeting transport objectives
- Ensure good design and planning for all schemes
- Particular care should be taken on design of measures in Conservation Areas, including design and siting bus shelters and associated facilities
- Schemes, particularly where these involve capacity increases, should be designed in such a way that they do not make other, less suitable routes, more attractive
- The local community should be involved in decisions on the design of schemes, where possible
- Lighting should be kept to a minimum, and the choice of location carefully considered.

To minimise the negative impacts of the schemes and programmes, potential mitigation measures that could be considered have been identified and are set out in the following table. It is recommended that these mitigation measures should be added to requirements for each individual scheme. As part of scheme development a requirement should be to identify whether the particular scheme will lead to diverse environmental impacts listed in Table 6 and, if so, what is most appropriate mitigation measures to implement in tandem with it to offset or minimise, that impact. The cost of implementing these mitigation measures should be included within the cost of a scheme as a whole.

Table 11: Potential Adverse Environmental Effects

Impact	Mitigation
Potential increase in CO_2	Greater promotion of walking and cycling in urban areas; Off-set planting; Consider low emission zone(s); Measures to reduce need to travel
Visual impact of signage and lines	Reduce to a minimum

	Use appropriate materials
Light pollution	Reduce lighting to a minimum needed for road safety Use lighting design that minimises light pollution or spillage
Rat running to avoid traffic calming	Consider extending treatment to cover possible affected routes
Urban centre air quality problems from increased bus numbers	Offset increased buses with reduced general traffic levels Encourage use of less polluting, latest standards in bus engines
Increased local traffic levels associated with greater economic activity	Greater promotion of walking and cycling Consider extended traffic management to cover possible affected routes in appropriate cases
Visual intrusion of bus shelters and other public transport infrastructure	Careful location and sensitive design – involvement of local community
Increased road travel on better maintained roads	Greater promotion of walking, cycling and public transport
Streetscape impact of bus lanes and related infrastructure	Use of high quality materials Sensitive design including consideration of planting and avoiding clutter
Increased pollutant levels in areas subject to diverted traffic	Consider extending treatment to cover possible affected routes in appropriate cases

For the majority of the schemes in the programme it is not possible at this time to quantify the impacts. If the known impacts were set out this might lead to undue concentration on the impacts of these schemes, which tend to be those earlier in the programme. As a consequence of this the whole assessment has been carried out on a qualitative basis. Where impacts are identified this may indicate that a quantitative assessment should be required as part of the scheme development process. In the table impacts set out in blue are those which might lead to meeting of the SEA objective; impacts set out in red are those that run counter to the objective. Cells coloured white indicate where no significant impact is expected.

11. Next Steps in the SEA Process

11.1 Consultation on Draft LIP2 and SEA

The SEA Regulations set specific requirements for consultation with the Consultation Bodies, the public and other interested parties (these could include non-governmental organisations and community groups), and require that the Environmental Report (this document) is made available alongside the consultation draft LIP2. As such this Environmental Report will be made available on the Richmond Council consultation webpage under local Implementation Plan 2.

11.2   SEA Statement

When the final Richmond LIP2 is completed it will be accompanied by an SEA Statement. In line with the SEA Regulations, the SEA Statement will provide the following information:

- How environmental considerations have been integrated into the plan;
- How the Environmental Report has been taken into account;
- How opinions expressed in relation to the consultation on the plan/programme and Environmental Report have been taken into account;
- The reasons for choosing the plan or programme as adopted, in the light of other reasonable alternatives dealt with; and
- The measures that are taken to monitor the significant environmental effects of the implementation plan or programme.

12. Appraisal Tables

Table 12 – Road Safety Schemes and Programmes

SEA Objectives	Borough-wide Collision investigation and analysis	Speed Management	Junior Safety Officers	Community Safety Initiatives	Drink Drive	School Road Safety Projects
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality						
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves		Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds.		Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds.		Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds.
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Making modes such as walking and cycling more attractive and safer, attracting new and potential users. Air quality benefits/CO_2	Making modes such as walking and cycling more attractive and safer, attracting new and potential users. Air quality benefits/CO_2 Improvements to road environment by keeping traffic moving in a more efficient way. Effect on landscape, biodiversity and climate change. Risk of rat running to avoid new measures.	Promoting safety schemes which make modes such as walking and cycling more attractive and safer, attracting new and potential users. Encourage safer driving where there is no practicable alternative.	Making modes such as walking and cycling more attractive to new and potential users. Air quality benefits/CO_2 Improvements to road environment by keeping traffic moving in a more efficient way. Effect on landscape, biodiversity and climate change. Risk of rat running to avoid new measures.	Reduce delays and hence congestion on the highway by reducing the number of alcohol related accidents.	Promoting safety schemes around schools and so making modes such as walking and cycling more attractive and safer, attracting new and potential users. Encourage safer driving where there is no practicable alternative. Risk of rat running to avoid new measures.
4 - To maintain water quality and reduce the risk of flooding		Good design should ensure that the impact is negligible of physical works		Good design should ensure that the impact is negligible of physical works		Good design should ensure that the impact is negligible of physical works
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites		Good design should ensure that the impact is negligible of physical works		Good design should ensure that the impact is negligible of physical works		Good design should ensure that the impact is negligible of physical works
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors		Improvements in air quality/ CO_2 Improvements to landscape and heritage by keeping traffic moving. Improvement to the settings of historic buildings Improvements to the street environment by reducing impact of through traffic.		Improvements to the street environment by reducing impact of through traffic. Improvement to the settings of historic buildings Improvements in air quality/ CO_2 Improvements to landscape and heritage by keeping traffic moving.		Improvements to the street environment by reducing impact of through traffic. Improvement to the settings of historic buildings Improvements in air quality/ CO_2 Improvements to landscape and heritage by keeping traffic moving.

SEA Objectives	Sixth Cross Road/ Staines Road/ Hospital Bridge Road	Park Road, Teddington	Hanworth Road / Powdermill Lane	Hampton Court Road	A305 Richmond to Sheen Corridor	Future Years accident remedial measures
	Effect on landscape, biodiversity and climate change of lower speeds.			Effect on landscape, biodiversity and climate change of lower speeds. Increased light pollution where scheme involves new lighting, so spoiling the settings of historic buildings		Effect on landscape, biodiversity and climate change of lower speeds. Risk of rat running to avoid new measures.
7 - to create and maintain safer and more secure communities	Reduce the likelihood and severity of further accidents Risk of rat running to avoid traffic calmed roads. For some schemes within the programme there is the potential visual impact of signage and lines. Increased light pollution where scheme involves new lighting	Reduce the likelihood and severity of further accidents Risk of rat running to avoid traffic calmed roads. For some schemes within the programme there is the potential visual impact of signage and lines. Increased light pollution where scheme involves new lighting .	Promoting safety schemes which make modes such as walking and cycling more attractive and safer, attracting new and potential users. Encourage safer driving where there is no practicable alternative.	Reduce the likelihood of further accidents For some schemes within the programme there is the potential visual impact of signage and lines. Increased light pollution where scheme involves new lighting Risk of rat running to avoid traffic calmed roads.	Reduce the likelihood and severity of further accidents	Reduce the likelihood of further accidents For some schemes within the programme there is the potential visual impact of signage and lines. Increased light pollution where scheme involves new lighting Risk of rat running to avoid traffic calmed roads.
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim.	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim.	By making cycling and walking safer, help promote more active and healthy lifestyles, improving the well being of residents of the Borough. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim.	By making cycling and walking safer, help promote more active and healthy lifestyles, improving the well being of residents of the Borough. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.
9 - To increase the vitality and viability of existing town centres, local centres and parades	Improvements to the street environment by reducing impact of through traffic.	Improvements to the street environment by reducing impact of through traffic.	Safer streets increase the vitality and viability of town centres.	Improvements to the street environment by reducing impact of through traffic.	Safer streets increase the vitality and viability of town centres.	Where schemes are in or near town centres, schemes may lead to safer streets so increasing the vitality and viability of town centres.
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth	Safer streets increase the vitality and viability of town centres.	Reduce the time people are not Economically active through being treated for road accidents – economic impact reduced	Safer streets increase the vitality and viability of town centres.	Reduce the time people are not Economically active through being treated for road accidents – economic impact reduced	Safer streets increase the vitality and viability of town centres.	
SEA Objectives	Sixth Cross Road/ Staines Road/ Hospital Bridge Road	Park Road, Teddington	Hanworth Road / Powdermill Lane	Hampton Court Road	A305 Richmond to Sheen Corridor	Future Years accident remedial measures
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality						
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving.	Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving.	Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving.	Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving.	Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving.	Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving.

	Effect on landscape, biodiversity and climate change of lower speeds.	Effect on landscape, biodiversity and climate change of lower speeds.	Effect on landscape, biodiversity and climate change of lower speeds.	Effect on landscape, biodiversity and climate change of lower speeds.	Effect on landscape, biodiversity and climate change of lower speeds.	Effect on landscape, biodiversity and climate change of lower speeds.
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Making modes such as walking and cycling more attractive to new and potential users. Air quality benefits/CO_2 Improvements to road environment by keeping traffic moving in a more efficient way. Effect on landscape, biodiversity and climate change. Risk of rat running to avoid new measures.	Making modes such as walking and cycling more attractive to new and potential users. Air quality benefits/CO_2 Improvements to road environment by keeping traffic moving in a more efficient way. Effect on landscape, biodiversity and climate change. Risk of rat running to avoid new measures.	Making modes such as walking and cycling more attractive to new and potential users. Air quality benefits/CO_2 Improvements to road environment by keeping traffic moving in a more efficient way. Effect on landscape, biodiversity and climate change. Risk of rat running to avoid new measures.	Making modes such as walking and cycling more attractive to new and potential users. Air quality benefits/CO_2 Improvements to road environment by keeping traffic moving in a more efficient way. Effect on landscape, biodiversity and climate change. Risk of rat running to avoid new measures.	Making modes such as walking and cycling more attractive to new and potential users. Air quality benefits/CO_2 Improvements to road environment by keeping traffic moving in a more efficient way. Effect on landscape, biodiversity and climate change. Risk of rat running to avoid new measures.	Making modes such as walking and cycling more attractive to new and potential users. Air quality benefits/CO_2 Improvements to road environment by keeping traffic moving in a more efficient way. Effect on landscape, biodiversity and climate change. Risk of rat running to avoid new measures.
4 - To maintain water quality and reduce the risk of flooding	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors	Improvements to the street environment by reducing impact of through traffic. Improvement to the settings of historic buildings Improvements in air quality/ CO_2 Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds. Increased light pollution where scheme involves new lighting, so spoiling the settings of historic buildings	Improvements to the street environment by reducing impact of through traffic. Improvements in air quality/ CO_2 Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds. Increased light pollution where scheme involves new lighting, so spoiling the settings of historic buildings	Improvements to the street environment by reducing impact of through traffic. Improvements in air quality/ CO_2 Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds. Increased light pollution where scheme involves new lighting, so spoiling the settings of historic buildings	Improvements to the street environment by reducing impact of through traffic. Improvements in air quality/ CO_2 Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds. Increased light pollution where scheme involves new lighting, so spoiling the settings of historic buildings	Improvements to the street environment by reducing impact of through traffic. Improvements in air quality/ CO_2 Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds. Increased light pollution where scheme involves new lighting, so spoiling the settings of historic buildings	Improvements to the street environment by reducing impact of through traffic. Improvements in air quality/ CO_2 Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds. Increased light pollution where scheme involves new lighting, so spoiling the settings of historic buildings
7 - to create and maintain safer and more secure communities	Reduce the likelihood of further accidents For some schemes within the programme there is the potential visual impact of signage and lines. Increased light pollution where scheme involves new lighting	Reduce the likelihood of further accidents For some schemes within the programme there is the potential visual impact of signage and lines. Increased light pollution where scheme involves new lighting	Reduce the likelihood of further accidents For some schemes within the programme there is the potential visual impact of signage and lines. Increased light pollution where scheme involves new lighting	Reduce the likelihood of further accidents For some schemes within the programme there is the potential visual impact of signage and lines. Increased light pollution where scheme involves new lighting	Reduce the likelihood of further accidents For some schemes within the programme there is the potential visual impact of signage and lines. Increased light pollution where scheme involves new lighting	Reduce the likelihood of further accidents For some schemes within the programme there is the potential visual impact of signage and lines. Increased light pollution where scheme involves new lighting

	Risk of rat running to avoid traffic calmed roads.	Risk of rat running to avoid traffic calmed roads.	Risk of rat running to avoid traffic calmed roads.	Risk of rat running to avoid traffic calmed roads.	Risk of rat running to avoid traffic calmed roads.	Risk of rat running to avoid traffic calmed roads.
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.
9 - To increase the vitality and viability of existing town centres, local centres and parades	Improvements to the street environment by reducing impact of through traffic.	Improvements to the street environment by reducing impact of through traffic.	Improvements to the street environment by reducing impact of through traffic.	Improvements to the street environment by reducing impact of through traffic.	Improvements to the street environment by reducing impact of through traffic.	Improvements to the street environment by reducing impact of through traffic.
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth	Reduce the time people are not Economically active through being treated for road accidents – economic impact reduced	Reduce the time people are not Economically active through being treated for road accidents – economic impact reduced	Reduce the time people are not Economically active through being treated for road accidents – economic impact reduced	Reduce the time people are not Economically active through being treated for road accidents – economic impact reduced	Reduce the time people are not Economically active through being treated for road accidents – economic impact reduced	Reduce the time people are not Economically active through being treated for road accidents – economic impact reduced

Table 13 – Congestion

SEA Objectives	Congestion Hot Spots	Network assurance	Waiting and Loading Restrictions Review	ATS Timings Review and Modification
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality				
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	Making modes such as walking and cycling more attractive to new and potential users. Air quality benefits/CO_2 Improvements to road environment by keeping traffic moving in a more efficient way. Effect on landscape, biodiversity and climate change of physical works. Risk of rat running to avoid new measures.	Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds.	Improvements in air quality/ CO_2 by better controlling lorry movements and other vehicle movements looking for on street parking. Longer waiting limits reduce circling looking for a parking space. Improvements to landscape and heritage by keeping traffic moving and reducing the impact of park vehicles on the settings of buildings .	Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion, with its accompanying improvements in air quality and reduction of noise.
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds.	Making modes such as walking and cycling more attractive to new and potential users. Air quality benefits/CO_2 Improvements to road environment by keeping traffic moving in a more efficient way. Effect on landscape, biodiversity and climate	Waiting and loading restrictions can have beneficial effects on cutting levels of CO_2 emissions from circling vehicles looking for parking. Short term on street parking may lead to increased levels of vehicular movements as vehicles circle an area looking for a parking space.	Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion.

		change. Risk of rat running to avoid new measures.		
4 - To maintain water quality and reduce the risk of flooding	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works		
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites			Good design should ensure that the impact is negligible of physical works	
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors	Improvements in air quality/ CO_2. Improvements to landscape, townscape and heritage by keeping traffic moving. Improvement to the settings of historic buildings Effect on landscape, biodiversity and climate change of lower speeds.	Improvements to the street environment by reducing impact of through traffic. Improvement to the settings of historic buildings Improvements in air quality/ CO_2 Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds. Increased light pollution where scheme involves new lighting, so spoiling the settings of historic buildings	Waiting and loading restrictions can help protect and promote an area of high quality heritage by protecting settings and reduce intrusion of unnecessary traffic	Reduction in congestion and smoother flow of traffic helps to improve both landscape and townscape, benefitting the visual settings of historic and important buildings
7 - to create and maintain safer and more secure communities	Smoother traffic flow achieved and more efficient use of road space Risk of rat running to avoid traffic calmed roads. Speeds may increase where congestion reduced.	Reduce the likelihood of further accidents For some schemes within the programme there is the potential visual impact of signage and lines. Increased light pollution where scheme involves new lighting Risk of rat running to avoid traffic calmed roads.	Reduction of traffic reduces the opportunities for potential collisions and so improve an area of community's safety	Better light controlled pedestrian crossings reduce the risks of collisions between pedestrians and vehicles.
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	Reduction of congestion generated air and noise pollution	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.	Reduction of traffic reduces the opportunities for potential collisions and so improve an area of community's safety	Better light controlled pedestrian crossings reduce the risks of collisions between pedestrians and vehicles. Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion, with its accompanying improvements in air quality and reduction of noise. This leads to improvements in the general health of pedestrians and the communities they live
9 - To increase the vitality and viability of existing town centres, local centres and parades	Smoother traffic flow achieved and more efficient use of road space	Improvements to the street environment by reducing impact of through traffic.	Carefully placed waiting restrictions in economically active areas such as town centres can lead to greater economic activity and benefits More vehicles in an area may lead to more congestion, air and noise pollution and increased potential for collisions between traffic and between traffic and pedestrians	Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion, with its accompanying improvements in air quality and reduction of noise. This leads to improvements in the general health of local economies and the communities that they serve.

| 10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth | | Reduce the time people are not economically active through being treated for road accidents – economic impact reduced | Carefully placed waiting restrictions in economically active areas such as town centres can lead to greater economic activity and benefits

More vehicles in an area may lead to more congestion, air and noise pollution and increased potential for collisions between traffic and between traffic and pedestrians | Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion, with its accompanying improvements in air quality and reduction of noise. This leads to improvements in the general health of local economies and the communities that they serve. |

SEA Objectives	Hampton Hill High Street / Park Road	Sixth Cross Road / South Road / Wellington Road	Future Years congestion measures
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality			
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	Congestion at this point caused by the existing alignment reduced as a result of this work. Contributes to the overall borough wide work to reduce congestion.		Improvements in air quality/ CO_2. Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds.
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Congestion at this point caused by the existing alignment reduced as a result of this work. Contributes to the overall borough wide work to reduce congestion.	Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion as well as the safety benefits of the scheme.	Making modes such as walking and cycling more attractive to new and potential users. Air quality benefits/CO_2 Improvements to road environment by keeping traffic moving in a more efficient way. Effect on landscape, biodiversity and climate change. Risk of rat running to avoid new measures.
4 - To maintain water quality and reduce the risk of flooding			Good design should ensure that the impact is negligible of physical works
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites			Good design should ensure that the impact is negligible of physical works
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors	Improve the setting of historic and other important buildings in the immediate area		Improvements to the street environment by reducing impact of through traffic. Improvement to the settings of historic buildings Improvements in air quality/ CO_2 Improvements to landscape and heritage by keeping traffic moving. Effect on landscape, biodiversity and climate change of lower speeds. Increased light pollution where scheme involves new lighting, so spoiling the settings of historic buildings
7 - to create and maintain safer and more secure communities	Reduce the likelihood of further accidents involving HGVs and buses.	Better controlled pedestrian crossings reduce the risks of collisions between pedestrians and vehicles.	Reduce the likelihood of further accidents For some schemes within the programme there is the potential

			visual impact of signage and lines. Increased light pollution where scheme involves new lighting Risk of rat running to avoid traffic calmed roads.
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	Reduce the likelihood of further accidents involving HGVs and buses and the fear and perception of accidents.	Better controlled pedestrian crossings reduce the risks of collisions between pedestrians and vehicles. Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion, with its accompanying improvements in air quality and reduction of noise. This leads to improvements in the general health of pedestrians and the communities they live	Encourage social inclusion by reducing community severance caused by speeding traffic and the fear of being a road accident victim. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.
9 - To increase the vitality and viability of existing town centres, local centres and parades	Improve the flow of HGVs and buses in order to make the surrounding area more attractive and help increase the vitality and viability of the area	Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion, with its accompanying improvements in air quality and reduction of noise. This leads to improvements in the general health of local economies and the communities that they serve.	Improvements to the street environment by reducing impact of through traffic.
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth	Improve the flow of HGVs and buses in order to make the surrounding area more attractive and help increase the vitality and viability of the area		Reduce the time people are not economically active through being treated for road accidents – economic impact reduced

Table 14 – Pedestrians

SEA Objectives	Pedestrian Training	Pedestrian Crossing Facilities	Rights of Way Improvement Plan (ROWIP)	Pedestrian Footbridge improvements	A306 Barnes Common to Hammersmith Bridge
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality			Enable access to as much of the surface area of the Borough as possible to ensure efficient use of land particularly in the area of tourism. Increase numbers of people can lead to increase levels of litter and other forms of pollution.		
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves		Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion, with its accompanying improvements in air quality and reduction of noise.	Encourage more pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels Potential visual impact of signage	Encourage more pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels.
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Promoting safety schemes which make modes such as walking and cycling more attractive and safer, attracting new and potential users. Encourage safer driving where there is no practicable alternative.	Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion.	Encourage more pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels. Potential visual impact of signage	Encourage more pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels.
4 - To maintain water quality and reduce the risk of flooding				Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites		Good design should ensure that the impact is negligible of physical works	Better management of pedestrian movements in the more rural areas of the Borough to reduce impacts on the local biodiversity, in particular at key wildlife sites. Potential visual impact of signage More pedestrian footfall could cause damage to local habitats and other sensitive areas.	Encouragement of pedestrian movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement of pedestrian movements and so helping to lessen impact on biodiversity and natural habitat of the area
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents		Reduction in congestion and smoother flow of traffic helps to improve both landscape and townscape, benefitting the visual settings of historic and important buildings Good design should ensure that	Better management of pedestrian movements in the Borough help protect and promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough.	Maintenance of important Borough landmarks Good design should ensure that the impact is negligible of physical works.	Improvements to important landmark in the Borough, maintaining character of area Good design should ensure that the impact is negligible of physical works.

and visitors		the impact is negligible of physical works	Potential visual impact of signage More pedestrian footfall could cause damage to local habitats and other sensitive areas.	
7 - to create and maintain safer and more secure Communities.	Promoting safety schemes which make modes such as walking and cycling more attractive and safer, attracting new and potential users. Encourage safer driving where there is no practicable alternative.	Better light controlled pedestrian crossings reduce the risks of collisions between pedestrians and vehicles.	Better pedestrian routes will create conditions where pedestrians will feel safer and more secure. Potential visual impact of signage	
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	By making cycling and walking safer, help promote more active and healthy lifestyles, improving the well being of residents of the Borough. People from poorer backgrounds more likely to walk and cycle and so improve their accessibility to facilities they may need.	Better light controlled pedestrian crossings reduce the risks of collisions between pedestrians and vehicles. Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion, with its accompaning improvements in air quality and reduction of noise. This leads to improvements in the general health of pedestrians and the communities they live	Better pedestrian routes will improve accessibility by foot and so encourage social inclusion and reduce the risks to pedestrians. Potential visual impact of signage	Promotion of pedestrian facilities ensures access to all regardless of income, particularly those on a low income. Improve accessibility to health, education, leisure and recreation facilities and services	Promotion of pedestrian facilities ensures access to all regardless of income, particularly those on a low income. Improve accessibility to health, education, leisure and recreation facilities and services
9 - To increase the vitality and viability of existing town centres, local centres and parades	Safer streets increase the vitality and viability of town centres.	Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion, with its accompaning improvements in air quality and reduction of noise. This leads to improvements in the general health of local economies and the communities that they serve.	Improve accessibility to health, education, leisure and recreation facilities and services, all helping to increase the vitality and viability of town centres, local centres and parades. Potential visual impact of signage	Improve accessibility to health, education, leisure and recreation facilities and services, all helping to increase the vitality and viability of town centres, local centres and parades.	Improve accessibility to health, education, leisure and recreation facilities and services, all helping to increase the vitality and viability of town centres, local centres and parades.
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth	Safer streets increase the vitality and viability of town centres.	Better timings of signals, lead to smoother flow of traffic and this can lead to reduction in congestion, with its accompaning improvements in air quality and reduction of noise. This leads to improvements in the general health of local economies and the communities that they serve.	Improve pedestrian links that will encourage and support a sustainable and diverse local economy. Potential visual impact of signage	Improve accessibility to health, education, leisure and recreation facilities and services, all helping to support the local economy and sustainable economic growth	Improve accessibility to health, education, leisure and recreation facilities and services, all helping to support the local economy and sustainable economic growth

SEA Objectives	Twickenham Stadium - Improving spectator access from rail stations	Teddington Lock Strategic Links	Stanley Road / Fulwell Road

	(Chudleigh Road)		
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality			
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	Encourage more pedestrian and cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more pedestrian and cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels.
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Encourage more pedestrian and cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more pedestrian and cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels.
4 - To maintain water quality and reduce the risk of flooding		Good design should ensure that the impact is negligible of physical works	
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites	Encouragement of pedestrian and cycle movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement of pedestrian and cycle movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement of pedestrian movements and so helping to lessen impact on biodiversity and natural habitat of the area
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors	Maintenance of important Borough landmark Good design should ensure that the impact is negligible of physical works	Maintenance of important Borough landmarks Good design should ensure that the impact is negligible of physical works	Maintenance of important Borough landmarks Good design should ensure that the impact is negligible of physical works
7 - to create and maintain safer and more secure Communities.	Better pedestrian routes will create conditions where pedestrians will feel safer and more secure. Potential visual impact of signage	Better pedestrian routes will create conditions where pedestrians will feel safer and more secure. Potential visual impact of signage	
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	Promotion of pedestrian and cycle facilities ensures access to all regardless of income, particularly those on a low income. Improve accessibility to health, education, leisure and recreation facilities and services	Promotion of pedestrian and cycle facilities ensures access to all regardless of income, particularly those on a low income. Improve accessibility to health, education, leisure and recreation facilities and services	Promotion of pedestrian and cycle facilities ensures access to all regardless of income, particularly those on a low income. Improve accessibility to health, education, leisure and recreation facilities and services
9 - To increase the vitality and viability of existing town centres, local centres and parades	Improve accessibility to health, education, leisure and recreation facilities and services, all helping to increase the vitality and viability of town centres	Improve accessibility to health, education, leisure and recreation facilities and services, all helping to increase the vitality and viability of town centres, local centres and parades.	

| 10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth | Improve accessibility to health, education, leisure and recreation facilities and services, all helping to increase the vitality and viability of town centres, local centres and parades. | Improve accessibility to health, education, leisure and recreation facilities and services, all helping to increase the vitality and viability of town centres, local centres and parades. | |

Table 15 – Cycling

SEA Objectives	Cycle Training	Cycle Direction Signing	Cycle Parking	Borough Cycle Network	SUSTRANS Greenways
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality					
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves		Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure		Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.
4 - To maintain water quality and reduce the risk of flooding				Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites		Encouragement cycle movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement cycle movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement cycle movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement cycle movements and so helping to lessen impact on biodiversity and natural habitat of the area
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works
7 - to create and maintain safer and more secure communities			Improve security for those wishing to cycle and leave their cycles unattended for a period whilst they shop, use facilities etc		
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.		Promotion of cycle facilities ensures access to all regardless of income, particularly those on a low income. Improve accessibility to health, education, leisure and recreation facilities and services	Improvement of cycle parking facilities encourages access by cycle, particularly those on a low income. Improve accessibility to health, education, leisure and recreation facilities and services	Promotion of cycle facilities ensures access to all regardless of income, particularly those on a low income. Improve accessibility to health, education, leisure and recreation facilities and services	Promotion of cycle facilities ensures access to all regardless of income, particularly those on a low income.
9 - To increase the vitality and viability of existing town		Improve accessibility to health, education, leisure and recreation	Reduction of cycle theft crime and the fear of collisions with other vehicles	Improve accessibility to health, education, leisure and recreation	

SEA Objectives	Cycle Tracks Act	Hampton Court Road / Church Grove	Railshead Road	Future Years cycling measures
centres, local centres and parades	facilities and services, all helping to increase the vitality and viability of town centres, local centres and parades.	will help promote cycling and help increase vitality and viability of existing town centres, local centres and parades	facilities and services, all helping to increase the vitality and viability of town centres, local centres and parades.	
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth		Reduction of cycle theft crime and the fear of collisions with other vehicles will help promote cycling and help increase vitality and viability of existing town centres, local centres and parades		
SEA Objectives	Cycle Tracks Act	Hampton Court Road / Church Grove	Railshead Road	Future Years cycling measures
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality				
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more cycle and pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels. Safer Crossing facilities for cyclists	Encourage more cycle and pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more cycle journeys so reducing number of car journeys, improving air quality and reduce noise levels.
4 - To maintain water quality and reduce the risk of flooding	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites	Encouragement cycle movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement cycle movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement cycle and pedestrian movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement cycle movements and so helping to lessen impact on biodiversity and natural habitat of the area
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors	More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Good design should ensure that the impact is negligible of physical works	More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Good design should ensure that the impact is negligible of physical works	More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Good design should ensure that the impact is negligible of physical works	More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Good design should ensure that the impact is negligible of physical works
7 - to create and maintain safer and more secure communities		Safer Crossing facilities for cyclists		Provision of secure cycle racks to improve security for those wishing to cycle and leave their cycles unattended for a period whilst they shop, use facilities etc
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	Promotion of cycle facilities ensures access to all regardless of income, particularly those on a low income. Improve accessibility to leisure and recreation facilities and in and around the River Thames	Improve accessibility by cycle and on foot to health, education, leisure and recreation facilities and services. Safer Crossing facilities for cyclists	Improve accessibility by cycle and on foot to health, education, leisure and recreation facilities and services	Improvement of cycle parking facilities encourages access by cycle, particularly those on a low income. Improve accessibility by cycle and on foot to health, education, leisure and recreation facilities and services
9 - To increase the vitality and viability of existing town	Improve accessibility to health, education, leisure and recreation facilities and services, all helping to			Reduction of cycle theft crime and the fear of collisions with other vehicles will help

centres, local centres and parades	increase the vitality and viability of town centres, local centres and parades.			promote cycling and help increase vitality and viability of existing town centres, local centres and parades
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth				Reduction of cycle theft crime and the fear of collisions with other vehicles will help promote cycling and help increase vitality and viability of existing town centres, local centres and parades

Table 16 – Travel Choice

SEA Objectives	Council Travel Plan	School Travel Plan - School Support	School Travel Plan - Small Grants	School Travel Plan - Engineering Works
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality				
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	Encourage more pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Encourage more pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels.	Potential local air quality improvement, contributing to reduced climate change.	Potential local air quality improvement, contributing to reduced climate change. Risk of rat running to avoid traffic calmed roads or other physical improvements.
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Potential to reduce local road traffic and congestion Encourage more pedestrian and cycle journeys and so reducing number of car journeys, improving air quality and reduce noise levels.	Potential to reduce local road traffic and congestion Encourage more pedestrian and cycle journeys and so reducing number of car journeys, improving air quality and reduce noise levels.	Potential to reduce local road traffic and congestion Encourage more pedestrian and cycle journeys and so reducing number of car journeys, improving air quality and reduce noise levels.	Potential to reduce local road traffic and congestion Encourage more pedestrian and cycle journeys and so reducing number of car journeys, improving air quality and reduce noise levels. Risk of rat running to avoid traffic calmed roads or other physical improvements.
4 - To maintain water quality and reduce the risk of flooding			Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites	Encouragement of pedestrian movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement of pedestrian movements and so helping to lessen impact on biodiversity and natural habitat of the area Those with learning difficulties and a limited command of the English language due to their ethnic origin may struggle with some of the concepts involved in such campaigns.	Encouragement of pedestrian and cycling movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement of pedestrian and cycling movements and so helping to lessen impact on biodiversity and natural habitat of the area
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors	More vibrant and busier places due to improved conditions resulting from higher quality of built environment.	More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Good design should ensure that the impact is negligible of physical works	More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Good design should ensure that the impact is negligible of physical works	More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Good design should ensure that the impact is negligible of physical works
7 - to create and maintain safer and more secure communities	Increased awareness of secure cycle parking and of personal protection will reduce crime and the fear of it.	Increased awareness of secure cycle parking and of personal protection will reduce crime and the fear of it.	Increased awareness of secure cycle parking and of personal protection will reduce crime and the fear of it.	Increased awareness of secure cycle parking and of personal protection will reduce crime and the fear of it.

	Better awareness around public transport hubs and other infrastructure	Better awareness around public transport hubs and other infrastructure	Better awareness around public transport hubs and other infrastructure	Better awareness around public transport hubs and other infrastructure
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	Encouragement of pedestrian movements and so helping to improve the health and general wellbeing of those taking part	Encouragement of pedestrian movements and so helping to improve the health and general wellbeing of those taking part	Encouragement of pedestrian movements and so helping to improve the health and general wellbeing of those taking part	Encouragement of pedestrian movements and so helping to improve the health and general wellbeing of those taking part
9 - To increase the vitality and viability of existing town centres, local centres and parades				
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth				

SEA Objectives	Walk on Wednesday	Upgrade	Workplace Travel Plan - Business Support	Workplace Travel Plan - Small Grants	Workplace Travel Plan - Engineering Works
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality					
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	Encourage more pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels.		Potential local air quality improvement, contributing to reduced climate change.	Potential local air quality improvement, contributing to reduced climate change. Risk of rat running to avoid traffic calmed roads or other physical improvements.	Potential local air quality improvement, contributing to reduced climate change. Risk of rat running to avoid traffic calmed roads or other physical improvements.
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Potential to reduce local road traffic and congestion Encourage more pedestrian and cycle journeys and so reducing number of car journeys, improving air quality and reduce noise levels.		Potential to reduce local road traffic and congestion Encourage more pedestrian and cycle journeys and so reducing number of car journeys, improving air quality and reduce noise levels. Those with learning difficulties and a limited command of the English language due to their ethnic origin may struggle with some of the concepts involved in such campaigns.	Potential to reduce local road traffic and congestion Encourage more pedestrian and cycle journeys and so reducing number of car journeys, improving air quality and reduce noise levels. Risk of rat running to avoid traffic calmed roads or other physical improvements.	Potential to reduce local road traffic and congestion Encourage more pedestrian and cycle journeys and so reducing number of car journeys, improving air quality and reduce noise levels. Risk of rat running to avoid traffic calmed roads or other physical improvements.
4 - To maintain water quality and reduce the risk of flooding				Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of	Encouragement of pedestrian movements and so helping to lessen impact on biodiversity and natural habitat of the area		Encouragement of pedestrian and cycling movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement of pedestrian and cycling movements and so helping to lessen impact on biodiversity and natural habitat of the area	Encouragement of pedestrian and cycling movements and so helping to lessen impact on biodiversity and natural habitat of the area

key wildlife sites					
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors				Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works
7 - to create and maintain safer and more secure communities	Increased awareness of secure cycle parking and of personal protection will reduce crime and the fear of it. Better awareness around public transport hubs and other infrastructure		Increased awareness of secure cycle parking and of personal protection will reduce crime and the fear of it. Better awareness around public transport hubs and other infrastructure	Increased awareness of secure cycle parking and of personal protection will reduce crime and the fear of it. Better awareness around public transport hubs and other infrastructure	Increased awareness of secure cycle parking and of personal protection will reduce crime and the fear of it. Better awareness around public transport hubs and other infrastructure
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	Encouragement of pedestrian movements and so helping to improve the health and general wellbeing of those taking part		Encouragement of pedestrian movements and so helping to improve the health and general wellbeing of those taking part	Encouragement of pedestrian movements and so helping to improve the health and general wellbeing of those taking part	Encouragement of pedestrian movements and so helping to improve the health and general wellbeing of those taking part
9 - To increase the vitality and viability of existing town centres, local centres and parades				Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth					

Table 17 – Public Transport Schemes/ Programmes

SEA Objectives	Bus Stop Accessibility	Rail Station interchange improvements	Motorcycles in bus lanes	Richmond Road bus lanes	Future Years public transport measures
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality					
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	Encourage more bus journeys and so reducing number of car journeys, improving air quality and reduce noise levels. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.	Encourage smoother interchange between rail and other modes of transport and so reducing number of car journeys, improving air quality and reduce noise levels. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters and other associated facilities.		Encourage more bus journeys so reducing number of car journeys, improving air quality and reduce noise levels. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.	Encourage more bus journeys so reducing number of car journeys, improving air quality and reduce noise levels. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.

3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Encourage more bus journeys and so reducing number of car journeys, improving air quality and reduce noise levels. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.	Encourage more bus journeys and so reducing number of car journeys, improving air quality and reduce noise levels. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.		Encourage more bus journeys so reducing number of car journeys, improving air quality and reduce noise levels. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.	Encourage more bus journeys so reducing number of car journeys, improving air quality and reduce noise levels. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.
4 - To maintain water quality and reduce the risk of flooding	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works		Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites	Good design should ensure that the impact is negligible of physical works Potential impact of the construction of bus lanes and other infrastructure on landscape and townscape. Visual intrusion of shelters.	Good design should ensure that the impact is negligible of physical works Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters and other associated facilities.		Reduction in the number of car journeys, so helping to lessen impact on biodiversity and natural habitat of the area	Reduction in the number of car journeys, so helping to lessen impact on biodiversity and natural habitat of the area
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors	Good design should ensure that the impact is negligible of physical works Potential impact of the construction of new infrastructure townscape, Visual intrusion of shelters.	Good design should ensure that the impact is negligible of physical works Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters and other associated facilities.		More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters. Good design should ensure that the impact is negligible of physical works	More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters. Good design should ensure that the impact is negligible of physical works
7 - to create and maintain safer and more secure communities	People feel more secure being able to stand in shelters.	People feel more secure being able to stand in waiting rooms and shelters associated with interchange.		People feel more secure being able to stand in shelters.	People feel more secure being able to stand in shelters.
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	Using the bus encourages more walking, contributing to the wellbeing of users. Improve accessibility by bus to health, education, leisure and recreation facilities and services Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.	Increased use of different forms of public transport encourages more walking, contributing to the wellbeing of the users. Improved urban centres environments by having fewer cars. Potential impact of the construction of bus lanes and other infrastructure townscape. Visual intrusion of shelters.		Improve accessibility by bus to health, education, leisure and recreation facilities and services Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.	Improve accessibility by bus to health, education, leisure and recreation facilities and services Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.
9 - To increase the vitality and viability of existing town centres, local centres and parades	Improved urban centres environments by having fewer cars. Potential impact of the construction of bus lanes and other infrastructure townscape. Visual intrusion of shelters.	Improved urban centres environments by having fewer cars. Potential impact of the construction of bus lanes and other infrastructure on townscape. Visual intrusion of shelters.		Perception that bus travel is safer than car borne, cycle or walking journeys encourage people to travel into town centres Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.	Perception that bus travel is safer than car borne, cycle or walking journeys encourage people to travel into town centres Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth					

Table 18 – Environment and Public Realm Programmes and Schemes

SEA Objectives	Air and Noise Pollution monitoring	Richmond Riverside	Richmond Town Centre	Whitton High Street
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality		Improve and make the most of riverside site, new development will be developed in the most efficient and economic way that reasonably can be done	Improvements to the town centre will be made with developing the land in the most economical way possible, high in importance	Improvements will be made with developing the land in the most economical and efficient way possible, high in importance
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	Identify hot spots which can then be dealt with	Parking controls will help to reduce the impact of traffic and help promote more non-car modes of transport accessing Richmond town centre, so helping to improve air quality and reducing noise pollution.

Expense and difficulty in parking could have social inclusion disbenefits.

For some schemes within the programme there is the potential visual impact of signage and lines. | Encourage smoother interchange between rail and other modes of transport and so reducing number of car journeys, improving air quality and reduce noise levels.

Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters and other associated facilities. | Potential local air quality improvement, contributing to reduced climate change.

Risk of rat running to avoid traffic calmed roads or other physical improvements. |
| 3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure | | Potential to reduce local road traffic and congestion

Encourage more pedestrian and cycle journeys and so reducing number of car journeys | Encourage smoother interchange between rail and other modes of transport and so reducing number of car journeys, improving air quality and reduce noise levels.

Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters and other associated facilities. | Encourage the smoother and safer flow of traffic through the High Street, so encouraging alternatives to the car |
| 4 - To maintain water quality and reduce the risk of flooding | | Good design should ensure that the impact is negligible of physical works | Good design should ensure that the impact is negligible of physical works | Good design should ensure that the impact is negligible of physical works |
| 5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites | Ensure that air pollution doesn't reach levels that can threaten local environment and its biodiversity | Good design should ensure that the impact is negligible of physical works

Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters and other associated facilities. | Good design should ensure that the impact is negligible of physical works

Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters and other associated facilities. | With the planting of groups of trees along the High Street, efforts will be made to enhance the local biodiversity

Good design should ensure that the impact is negligible of physical works |
| 6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors | Ensure that air pollution doesn't reach levels that can threaten the fabric of surrounding buildings | Good design should ensure that the impact is negligible of physical works

Visual intrusion of shelters and other associated facilities. | Good design should ensure that the impact is negligible of physical works

Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters and other associated facilities. | Good design should ensure that the physical environment will be greatly improved |
| 7 - to create and maintain safer and more secure communities | Take action when identified to limit any adverse effects on communities caused by poor air quality and high levels of noise | Presence of Traffic Wardens in these areas could act as a deterrent to potential crime | People feel more secure being able to stand in waiting rooms and shelters associated with interchange.

Presence of Traffic Wardens in these areas could act as a deterrent to potential crime | Improved lighting will improve the sense of security in and around the High street for pedestrians

Crossing facilities will be improved for pedestrians |

8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required.	Take action when identified to limit any adverse effects on communities caused by poor air quality and high levels of noise	Improvements in access management measures help to improve access to the area Good design should ensure that the impact is negligible of physical works Expense and difficulty in parking could have social inclusion disbenefits.	Increased use of different forms of public transport encourages more walking, contributing to the wellbeing of the users. Improved urban centres environments by having fewer cars. Potential impact of the construction of bus lanes and other infrastructure townscape. Visual intrusion of shelters.	The upgraded street scene will improve conditions for pedestrians in the High Street
9 - To increase the vitality and viability of existing town centres, local centres and parades	Clean air and low levels of background noise will help maintain the vitality of the Boroughs town centres, local centres and parades	Improved urban environments in areas adjacent to station by having fewer cars. The improvements will lead to a greater quality in the shopping experience Good design should ensure that the impact is negligible of physical works Expense and difficulty in parking could have social inclusion disbenefits.	Improved urban environments in areas adjacent to station by having fewer cars. The improvements will lead to a greater quality in the shopping experience Good design should ensure that the impact is negligible of physical works Potential impact of the construction of bus lanes and other infrastructure on townscape. Visual intrusion of shelters.	Improved urban environment will increased the vitality and viability of the High Street
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth		Greater and improved access will help maintain and grow the local economy	Improvements will lead to a widening of choice in Richmond town centre and promotion will lead to greater foot fall in the town centre	

SEA Objectives	Sheen Cross Service Road	Richmond Park Gate	Future Years environment and public realm measures	
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality			Improvements to areas concerned will be made with developing the land in the most economical way possible, high in importance	
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	Removing vehicular movements through pedestrianisation and so encourage increased pedestrian movements so reducing air and noise pollution in the surrounding area	Encourage increased pedestrian movements so reducing air and noise pollution in the surrounding area	Improvements in access management measures help to improve access to the area Good design should ensure that the impact is negligible of physical works Expense and difficulty in parking could have social inclusion disbenefits.	
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Pedestrian movements greatly increase, so removing congestion and encouraging walking	Pedestrian movements encouraged along with other non-car modes. Car access greatly reduced Improved public realm and transport infrastructure.	Encourage more bus, cycle, pedestrian journeys so reducing number of car journeys, improving air quality and reduce noise levels. Potential negative impact of increased	

		Potential negative impact of increased use of buses on local air quality. Visual intrusion of bus shelters	use of buses on local air quality. Visual intrusion of bus shelters.	
4 - To maintain water quality and reduce the risk of flooding	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites	Encouragement of pedestrian and cycling movements and so helping to lessen impact on local biodiversity and natural habitat of the area Good design should ensure that the impact is negligible of physical works Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters and other associated facilities.	Encouragement of pedestrian movements and so helping to lessen impact on local biodiversity and natural habitat of the area Good design should ensure that the impact is negligible of physical works	Encouragement of pedestrian and cycling movements and so helping to lessen impact on local biodiversity and natural habitat of the area Good design should ensure that the impact is negligible of physical works Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters and other associated facilities.	
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit or both residents and visitors	Good design should ensure that the physical environment will be greatly improved More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.	Good design should ensure that the physical environment will be greatly improved More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.	Good design should ensure that the physical environment will be greatly improved More vibrant and busier places due to improved conditions resulting from higher quality of built environment. Potential negative impact of increased use of buses on local air quality. Visual intrusion of shelters.	
7 - to create and maintain safer and more secure communities	Crossing facilities will be improved for pedestrians	People feel more secure being able to stand in waiting rooms and shelters associated with interchange. Crossing facilities will be improved for pedestrians	People feel more secure being able to stand in waiting rooms and shelters associated with interchange. Presence of Traffic Wardens in these areas could act as a deterrent to potential crime Improved lighting will improve the sense of security in and around the High street for pedestrians Crossing facilities will be improved for pedestrians	
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required. Reducing social exclusion.	Improved urban environments by having fewer cars and people feeling safer and more confident to walk and cycle Reduced social exclusion as walking is encouraged	Improved urban environments by having fewer cars and people feeling safer and more confident to walk and cycle	Increased use of public transport encourages more walking, contributing to the wellbeing of the users. Improved urban centres environments by having fewer cars. Potential impact of the construction of bus lanes and other infrastructure	

9 - To increase the vitality and viability of existing town centres, local centres and parades	Improved urban centres environments by having fewer cars. Improve accessibility to health, education, leisure and recreation facilities and services, all helping to increase the vitality and viability of town centres, local centres and parades. Potential impact of the construction of bus lanes and other infrastructure on townscape. Visual intrusion of shelters	Improved urban centres environments by having fewer cars. Improve accessibility to health, education, leisure and recreation facilities and services, all helping to increase the vitality and viability of town centres, local centres and parades. Potential impact of the construction of bus lanes and other infrastructure on townscape. Visual intrusion of shelters	Improved urban centres environments by having fewer cars. Improve accessibility to health, education, leisure and recreation facilities and services, all helping to increase the vitality and viability of town centres, local centres and parades. Potential impact of the construction of bus lanes and other infrastructure on townscape. Visual intrusion of shelters	
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth				

Table 19 – Road and Bridge Maintenance

SEA Objectives	Church Rd Barnes Carriageway and Footway renewals	Maintenance - Bridges and Structures	
1) To make the most efficient use of land and to reduce contamination and safeguard soil quantity and quality			
2 - Reduce air and noise pollution, including greenhouse gases, and ensure air quality improves	Traffic travelling smoothly should run more efficiently and so emit fewer emissions.	Traffic travelling smoothly should run more efficiently and so emit fewer emissions.	
3 - Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure	Maintaining and improving existing Borough assets Potentially lead to growth in traffic and congestion as route becomes more attractive.	Maintaining and improving existing Borough assets Potentially lead to growth in traffic and congestion as route becomes more attractive.	
4 - To maintain water quality and reduce the risk of flooding	Better maintained roads may also improve drainage and reduce surface run off Good design should ensure that the impact is negligible of physical works	Better maintained roads may also improve drainage and reduce surface run off Good design should ensure that the impact is negligible of physical works	
5 - Conserve and enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites	Good design should ensure that the impact is negligible of physical works	Good design should ensure that the impact is negligible of physical works	
6 - Promote high quality places, spaces and buildings & conserve and enhance the landscape and townscape character of the Borough	Maintaining and improving existing Borough assets	Maintaining and improving existing Borough assets	

including historical features for the benefit or both residents and visitors			
7 - to create and maintain safer and more secure communities	Improved lighting will create a safer environment, particularly after dark Reduction in pot holes and general improvement in the surface of roads and footways will increase the safety of cycle journeys Reduce number of trip related accidents on footways by pedestrians	Improve connectivity between communities split by heavily used roads	
8 - To facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities and services that are required. Reducing social exclusion.	Where roads become more attractive to traffic, may lead to greater community severance due to increasing volumes of traffic	Well maintained foot bridges ensure that main roads will not contribute to community severance	
9 - To increase the vitality and viability of existing town centres, local centres and parades	Contribute to the vitality of the Borough's town centres and surrounding areas Protect historically important structures Better maintained roads may make them more attractive, so attract more traffic.	Contribute to the vitality of the Borough's town centres and surrounding areas Protect historically important structures Better maintained roads may make them more attractive, so attract more traffic.	
10 - To promote and encourage a buoyant and diverse economy that will provide sustainable economic growth		Reduction of community severance in commercial areas will help promote and encourage a diverse economy	

Appendix A - Baseline Data

The following baseline data that Richmond has used for the draft Sustainability Appraisal Scoping report is widely used by the Council. It follows on from Chapter 4 of the Report

Baseline information in the form of indicators set out under various SA objectives, though many will be cross cutting.

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Objective 1: to promote sustainable waste management, including minimising waste and waste disposal, promoting recovery, reuse and recycling.							
Percentage of household waste arisings i) recycled ii) composted	i) 17.6 % re-cycled 03/04 ii) 4.4% composted 03/04	regional average i) 11.7% ii) 2.1%	BVPI targets for 03/04 were i) 20.5% & ii) 4.5% GLA target is at least 25% by 2005 30% by 2010	i) 15% in 01/02, 16.7% in 02/03. ii) 1% in 01/02, 3.8% in 02/03.	GLA KPI 19 & 20 seeks an Increase in household waste recycled or composted	Audit Commission BVPI 82a & b London Sustainable development commission LSDC QoL 6	www.capitalwastefacts.com
Percentage of total waste arisings to landfill	77.96% 03/04	regional average 61.7%	GLA target 75% treated within London by 2010	79.5% in 02/03.	GLA KPI 21 seeks increased regional self sufficiency for waste	BVPI 82d	www.capitalwastefacts.com
Total tonnage of household waste collected	unavailable at present	Between 1996/97 and 2002/03 the amount of household waste collected for recycling in England more than doubled, to 3.7 million tonnes				LSDC QoL 12 (ii)	
Capacity of new waste management facilities by type	Under investigation		Achieve requirement for waste treatment facilities as identified in SRDF	N/a	GLA KPI 20 Waste treatment facilities (in SRDF)	ODPM core output indicator	
Objective 2: To make the most effective use of land and to reduce contamination and safeguard soil and air quality							
Nos of sites identified as contaminated land	1475	N/a	1500	N/a	Number of sites of potential concern.	BV 216a & 216b	LBRuT figs.
Nos. of contaminated land sites remediated.	35	N/a	1500	N/a			LBRuT figs

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Objective 3: to reduce air and noise pollution, including greenhouse gases, and ensure air quality improves							
Number of days p.a. when air pollution is moderate or high for PM10	2004 = 5		Nil	2003 = 14 2002 = 1 2001 = 11 2000 = 1	The 2003 high aligns well with the national picture as a bad year for air quality. Inter year variations are a feature of the weather rather than pollution generation. The trend should reduce.	LSDC QoL 14	LBRuT figs
Nos of aircraft flights over the Borough p.a. total pa night flights	Winter 04/05 = 2591 Summer 04 = ? Total 2003 = 5969 (2330-0600hrs) Total 2003 = 25,125 (2300-0700 hrs)			Winter 02/03 = 2620 Summer 03 = 2899	Annual increase in total movements (atms) = 1.4% (April) to total of 470,084 (limit with T5 = 480,000)		Local data.
Objective 4: Reduce congestion and pollution by reducing the need to travel, encourage alternatives to the car and make best use of existing transport infrastructure.							
Proportion of travel-to-work via Mode of travel	mode / %age / Outer London / E & W: mainly at/from home 11.0 / 8.5 / 9.2 Underground 8.3 / 13.4 / 3.0 train 18.8 / 13.3 / 4.1 bus 7.1 / 9.2 / 7.4 motorcycle 1.7 / 1.3 / 1.1 car/van* 38.8 / 44.9 / 61.5 taxi 0.3 / 0.6 / 0.5 bicycle 3.9 / 1.6 / 2.8 on foot 7.7 / 6.9 / 10.0 other 0.5 / 0.4 / 0.5 *driver or passenger 2001 Census of Population, Table KS17.	*(Outer London and E & W columns shown with Local data)*	GLA target - Use of public transport per head grows faster than use of private car per head	mode / % age: mainly at/from home 6.8 train 22.0 bus 7.8 motorcycle 1.2 car/van* 48.0 bicycle 4.4 on foot 7.8 1991 Census LBS Table 21	Census data can be used as a proxy at the beginning of the decade.	GLA KPI 12 & 13 & 14 to reduce reliance on the private car and a more sustainable modal split for journeys	Census 2001. Key Statistics Table KS15 www.statistics.gov.uk
Average daily vehicle flows i) Total ii) Cycles iii) Motorcycles iv) Cars v) HGV vi) buses	*See Table A5 in Appendix		GLA target traffic growth in outer London reduced to no more than 5%	*See Table A5 in Appendix		LSDC QoL 16 GLA KPI 13 BVPI 102 (in part)	LBRuT screenline counts

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Percentage of completed non-residential development complying with car-parking standards set out in the LDF	no data available at present	none available at present		n/a	Research is currently being carried out by the planning department and will be fed into the SA process when available.	ODPM core output indicator	
Number of travel plans secured	7 Travel Plans were secured during the period 03-04	N/a	LBRuT Service Plan target '04 of 6 per year	n/a	Target exceeded.	2004 AMR	Local monitoring
Percentage of new residential development within 30 minutes public transport time of a GP, Hospital, primary and secondary school, employment and a major health centre.	none available at present	none available at present	-	n/a	This may prove a difficult indicator to measure with any accuracy. Further research will be undertaken on this subject.	ODPM core output indicator	None at present
Objective 5: to maintain water quality and reduce the risk of flooding							
No of pps granted contrary to advice of the EA on either flood defence or water quality grounds.	No data available	Under investigation	Target is no net loss of functional flood plain		GLA KPI 24 to ensure a sustainable approach to flood management	Required by ODPM as Core output indicator.	

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
River water of good or fair chemical and biological water quality	2000-02 chemical grade Duke of Northumberlands =C Crane = C Thames (Hogsmill-Teddington) = B 2000 biological grade Duke of Northumberlands = C Crane = C Thames (Hogsmill – Teddington) = B B = good, C= fairly good	2002 London % of rivers lengths of good chemical quality =31% London % of rivers of good biological quality = 30%	Government has set a target to increase River Quality Objectives (RQO) compliance in England and Wales from 82% in 1997 to at least 91% in 2005 (by 2002, RQO compliance stood at 91.2 %).	static			Environment Agency www.sustainable-development.gov.uk/indicators/regional/2003/h12.htm http://maps.environment-agency.gov.uk
Objective 6: to promote sustainable energy use by improved energy efficiency, reduced energy use and increased use of renewable energy							
Renewable energy capacity installed by type	No data available	(UK produced around 4 per cent of its electricity from renewable sources in 2003, compared with an EU-25 average of 14%)	GLA target of 10% of new developments' energy needs to come from renewable energy generated on site.	Not known	Developing methods to find out energy use	ODPM Core Output Indicator	None at present
Energy use per household	No data available	Nationally energy use per household has fluctuated between +4 and –10% of the level in 1970, and there has been no clear change. Household energy use has therefore increased broadly in line with household growth.	None identified	Unknown			http://www.statistics.gov.uk/statbase/ssdataset.asp? DTI, ODPM, BRE

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Objective 7: Conserve and Enhance biodiversity avoiding irreversible losses, through responsible management of key wildlife sites.							
Extent and condition of key habitats for which BAPS have been established							
Change in population of biodiversity importance, including: i) change in priority habitats & species (by type) & ii) change in areas designated for their intrinsic environmental value including sites of international, national, regional sub regional & local significance e.g. SNCIs			GLA No net loss of designated Sites of Importance for Nature Cons over plan period		protection of biodiversity habitat. No loss or change in quality and or quantity of local wildlife sites (SSSIs & SNCIs)	ODPM core output indicator GLA KPI 18	Richmond Biodiversity Partnership Surveys
Amount of inappropriate development on sites of nature importance	No data at present	N/a	Under investigation but seek to minimise loss of local nature/wildlife	unavailable	Investigating appropriateness of indicator. If unsuitable use % of SNCIs & SSSIs in good condition (2x SSSIs = Richmond Park and Barn Elms wetland centre)		LBRuT decisions analysis
Objective 8: to promote high quality places, spaces and buildings and conserve and enhance the landscape and townscape character of the Borough including historical features for the benefit of residents and visitors							
Number of Article 4 Directions	1366 properties are subject to Article 4 Directions, including 60 new properties in 2003/4.	N/a	UDP target = appropriate increase in numbers	Positive progress made.	Protection of the unique historic environment is a key priority.	2004 AMR	LBRuT annual monitoring
Nos of Buildings of Townscape Merit designated (local designation)	Approx 4,890 BTMs in the borough including 92 designated in the financial year 2003/4	n/a	UDP target = increase in numbers as appropriate	n/a		2004 AMR	Local Data

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Grade I and Grade II* listed buildings at risk of decay	There were 14 buildings on the English Heritage Register published Aug 2003. 5 had been removed and 2 added in the previous financial year.	n/a	UDP target = Reduction in the number of buildings on the register at a reasonable rate per year.	positive progress has been made.		GLA KPI 25	English Heritage Register of Buildings At Risk.
No. of Conservation Areas or extensions to existing CAs designated	At March 2004 there were 70 Conservation Areas in the borough, including 5 new, the text of a further 5 had been agreed by Cabinet & another 17 were in various stages of development.	n/a	production required to meet Committee timetable. No target as such since designation should reflect the quality & characteristics of the area.	increase in the number of CAs.	The Council has made good progress towards its programme of production	BV 219a & BV 219b 2004 AMR Community plan target	Local data.
Loss of /inappropriate uses on Green Belt, MOL, Other Open Land of Townscape Importance and Public Open Space	2 developments were completed on protected open space in 2003/4. Another just after the end of the financial year. None were on Green Belt.	N/a London Development Database will be able to effectively monitor this target in London Plan Annual Monitoring Report 2.	Protection of open space GLA Target = No net loss of open space designated for protection in UDPs due to new development.	n/a	The three developments were UDP proposals which delivered significant community benefits.	GLA KPI 3 2004 AMR	Local data
% of total length of footpaths/other rights of way which are easy to use	100% of footpaths easy to use (03/04)	regional average 86.6%	UDP target - 100% easy to use	100% in 02/03	UDP & Best Value targets reached	BVPI 178 2004 AMR	Best value Performance Plan
% of eligible open spaces managed to green flag award standard	Currently no open spaces in the borough have Green Flag status.	54 open spaces in London have this status at June 05.	N/a	n/a	The Green Flag Award is the national standard for parks and green spaces in England and Wales. Awards are given on an annual basis and winners must apply each year to renew their Green Flag status. The Council expects to make applications next year.	ODPM core output indicator	Civic Trust http://www.greenflagaward.org.uk/

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Objective 9:to ensure that local people have the opportunity to live in an affordable home suitable to their needs							
Number of housing units built i) annually (completions) ii) over previous 5 year period.	4911 units were either completed at March 2004 or expected to be completed by Dec 2016. The borough provided 111% of its London Plan target in 2003.	In 2003, 24,608 additional homes were completed – 107% of the 23,000 London Plan target for London.	Housing Capacity figure of 4860 units (5360 including unconventional capacity) between 1997 & 2016. [London Plan target]	The housing provision figure in RPG 3 & Policy HSG 1 of the 1996 Plan was met & exceeded. Good progress is being made towards meeting the London Plan target.	A satisfactory increase in the overall level of housing is required to assist in meeting the need to house people.	ODPM core output indicator / GLA KPI 4	LBRuT annual monitoring Contextual info
Percentage of homes built to wheelchair housing standards	Full data not available. 5 schemes of 10 or more units had homes built to wheelchair standards in financial year '03-'04.	n/a	UDP target: 10% of homes built to wheelchair standards		It is doubtful that the target was met in 03-04.	2004 AMR	LBRuT Decisions analysis
Additional provision of affordable housing	During the financial year 03-04, 45 out of the total 246 units or 17% completed were affordable housing.	total provision of affordable of affordable homes in London was 11,358, 7,609 of which were delivered through the planning system (see London Plan Annual Monitoring Report)	UDP target of 40% London Plan Target - 50%	See Table 1 in annex.	The percentage of affordable housing will vary on a year-on-year basis depending partly on the size of sites coming forward. It is anticipated that in the year 2004-6 there will be several substantial sites with 40% affordable housing completed, including Normansfield, part of Kew Sewage Treatment Works, Kew Riverside & the Brunel site.	ODPM core output indicator/ GLA KPI 5	local monitoring London Plan Annual Monitoring Report

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Objective 10: to make best use of previously developed land and existing buildings, encouraging sustainable construction practices.							
Percentage of development on previously developed land (completions)	During the financial year 03-04 100% of new housing was built on previously developed land.	Regional average = 98.0% 03/04	Target 95%. seek increasing proportion of development taking place on previously developed land.	100% in 01/02 & 02/03	Figures are available for the amount of new housing built on previously developed land. The borough is a typically built-up London borough with few sites which would fall outside the definition in PPG 3. As such the vast majority of other land uses are also likely to be built on previously developed land due to the protection afforded to most open land in the borough.	Percentage of new and converted housing on previously developed land = ODPM core output indicator BVPI 106, GLA KPI 1 & AMR	LBRuT annual monitoring Best Value Performance Plan.
Percentage of new dwellings completed at: i) less than 30 dwellings per hectare; ii) between 30 & 50 dwellings ph iii) above 50 dwellings p hectare.	Not currently available. However, some density information is available from the London Plan AMR average density in 00/03 = 52 units per ha of new developments.	range of 30 dwellings/ha in Bromley to 339 in the City.	Increasing the density of development	45 dwellings per hectare in 95-98, 48 dwellings per hectare in 99-02. Data suggest an increase in density.	Monitoring systems will be developed to extract the desired information on a regular basis and an assessment made of the feasibility of extracting time series data from the decisions analysis system. In the interim figures from the London Plan AMR are supplied.	ODPM core output indicator GLA KPI 2	London Plan Annual Monitoring Report In future: LBRuT decisions analysis system.
Proportion of new build and retrofit homes meeting EcoHomes very good standard	Under investigation	EcoHomes 2000 – Present 186 = very good (source: BREEAM)	No target identified	Unknown			http://projects.bre.co.uk/factfile/index.html
Proportion of commercial buildings meeting BREEAM very good standard	Under investigation	BREEAM Offices: Start of Scheme – Present 253= very good	No target identified	Unknown			http://www.breeam.org/

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Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Objective 11: to create and maintain safer and more secure communities							
Number of recorded crimes pa	For 12 Months to Apr 2005 (year) total crimes = 15,334	Metropolitan police figures show increase to total crimes to total of 1,059,065-for 2005 from total of 1,014,390 in 2004	17.5% reduction in all crime by 2008	Slight reduction	All crime targets are set in the Community Safety and Substance Misuse Strategy 2005 – 2008 Overseen by Community Safety Partnership Prolific and Priority Offender Strategy being implemented locally. 22 PPO;s identified this will change as offenders de-listed and new ones are identified 3 strands – Prevent and Deter, Catch and bring to justice, Resettle and rehabilitate Local working group overseeing strategy Rectification of street lighting faults	Local BVPI's i) 126- Domestic burglaries per 1000 pop ii) 127a - Violent crimes per 1000 pop iii) 127b - Robberies per 1000 pop iv)128 - vehicle crimes per 1000 pop v) 174 - Racial incidents per 100,000 pop vi) 175 - racial incidents resulting in further action vii) 198 - Drug users in treatment viii) 225 - Actions against domestic violence BV 215 a -b	LBRuT annual monitoring ODPM Monitoring on CS and SM Strategy targets by Home Office (GOL)
Number of pedestrians killed or seriously injured (KSI) in road accidents	14.5 per 100,000 population. In the year 2003 there were 614 accidents in the borough, 2 of which were fatal, 107 were serious & the remainder (505) were slight. 162 accidents involved a pedestrian. There were 727 casualties, 2 were fatal, 122 were serious & 603 were slight.	regional average = 22.4 per 100,000			In 1987 the government set the a target to reduce casualties by 1/3rd from 1981-5 average by the year 2000. This target has been met since 1998. New targets to be achieved by 2010 -a reduction of 40% in the number of people killed or seriously injured is more challenging and has not yet been met. The Council's road safety targets have not yet been met.	More local data are supplied which are perhaps more meaningful than the BVPI per 100,000 figures.	2004 AMR/ BVPI 99 a)/ Community Plan indicator.	London Road Safety Unit (TfL), LBRuT Road Safety Plan 2004.

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
% of pedestrian crossings with facilities for disabled persons	96% in 2003/4	regional average = 89.1%	100% of pedestrian crossings with disabled facilities by 2006/7	2001/2 = data not available

2002/3 = 95.0% | | BVPI 165 | |
| Reduction in the amount of Graffiti | BVPI indicator amended – this data not previously collected. | n/a | 15% reduction | n/a | Incidences of graffiti recorded via the graffiti hotline. Original BVPI amended. | BVPI 199b

Local Service Agreement targets for ASB | |
| Incidents of anti social behaviour | Baseline to be established

Multi agency database to be developed

ASB Panel established and monitoring ASB and ASBO | LPSA Targets | Cut anti social behaviour | | Absence in secondary schools

Targets in CS and SM Strategy 2005 - 2008 | BV45

BV 199 a – d | Monitoring on CS and SM Strategy targets by Home Office (GOL) |
| Incidence of environmental crime such as fly posting, fly-tipping and abandoned vehicles | BVPI indicator amended or new – this data not previously collected. | n/a | | n/a | Abandoned vehicles

new reports investigated within 24 hrs of notification

removed within 24 hrs of legal entitlement to remove. | BV 199a 199c and 199d

BV218a

BV218b | Fire Brigade targets on reducing deliberate fires BV's

146i and ii

206i - iv |
| Objective 12: to facilitate the improved health and well-being of the population, including enabling people to stay independent and ensuring access to those health, education, leisure and recreation facilities & services that are required. | | | | | | | |
| Improved maintenance of cycle and pedestrian routes | | | Increased planned maintenance of highways and footpaths by an average of 5% annually over 3 years (current target) | Most roads already have a footway. Most signal controlled junctions have pedestrian phase | Incorporate into current maintenance plans for cycle and pedestrian routes | BVPI monitoring | |

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Net loss of floorspace of community facilities	During the financial year 03-04 the net amount of D1 floorspace for medical and health services rose by 1,100 sq m. Two new primary schools were completed along with extensions to an existing school amounting to 2,861 sq m and a change of use was allowed for an extra 14 sq m to a small local museum. Around 6,458 sq m of fitness and leisure centre (D2) floorspace was completed. An estimated 6,190 sq m of this was in a new golf, racquets, tennis and fitness facility.	n/a	No net loss in floorspace of community facilities pa	Trend not available.		2004 AMR	LBRuT decisions analysis system.
Number of basic convenience shopping facilities in smaller centres.	See Table A2 in Annex.		No loss of convenience facilities in smaller centres	There has been little change in facilities since the 2002 Land Use Survey. A greengrocer closed down in Barnes, although the centre retains another. Closure of the chemist in Lower Mortlake Road. Closure of a butcher in Strawberry Hill,.	Planning policies can not reverse the trend of loss of independent shops. The planning system has no control whether an individual retailer goes out of business, nor can it control the type of retailer present. Planning policies do not specifically protect key basic shopping facilities. But in line with government guidance provide for an appropriate amount of diversification of use in town centres.	2004 AMR	2004 Town centre land use survey

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Percentage of population describing their health as good.	76.3% in 2001 Census	Greater London – 70.8%, England & Wales – 68.6%	None available	Question not asked in previous census.	Not possible to measure annually. Figures show that a larger proportion of residents in the borough consider themselves to be in good health compared to the regional and national average.		Census 2001 http://neighbourhood.statistics.gov.uk
Long term illness, health problem or disability which limits people's daily activities or the work they could do.	12.4% of borough residents considered they had a limiting long term illness according to the 2001 Census.	Greater London – 15.5%, England & Wales – 18.2%	None available	In 1991 18.3% of households had one or more persons with a LLTI. [In 2001 23% of households had one or more persons with a LLTI – 34% in England & Wales]			http://neighbourhood.statistics.gov.uk/areaprofileframes.asp
Objective 13: to increase the vitality and viability of existing town centres, local centres and parades.							
% of new retail developments located in Richmond and district centres	81% of new floorspace is steered to the areas of mixed use i.e. the main centres	N/a	UDP target of 90% of net increase in provision in Richmond and district centres (defined by mixed use area)	n/a		2004 AMR	LBRuT annual monitoring
Percentage of completed retail, office and leisure development in town centres (AMUs)	Under investigation. Have commercial and retail figures from 2004 UDP Annual Monitoring Report.	N/a	UDP target of 85% of employment floorspace created in Richmond and District centres (defined by mixed use area boundary)		Partly met. More data to be collected/analysed.	ODPM core output indicator (AMR * for employment floorspace only)	
Proportion and number of retail uses in key frontages	In 2004 71% of units in key shopping frontage were in A1 (shop) use. (See Table A3 in Annex).	n/a	UDP target to maintain the proportion of retail uses in key frontages at existing levels	68.5% in 2002, 70.7% in 2001.	The proportion will fluctuate depending on movement between retailers and redevelopment of existing frontages. However, figures in recent years have remained fairly constant.	2004 AMR	2004 Town centre land use survey

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Objective 14: to promote and encourage a buoyant and diverse economy that will provide sustainable growth							
Net increase in the stock of employment floorspace (completions)	Net increase of 890 sq m in employment floorspace. See Table A4 in Annex.	N/a	UDP target increase by 1% pa	Positive progress though target not fully met.	Due mainly to conversion (of B8 and B2 to B1), intensification and extension of existing employment uses.	2004 AMR	LBRuT annual monitoring
Net increase in numbers of firms registering for VAT	20 more firms registered than deregistered for VAT in 2002.	DTI figures for UK show the number of VAT registrations increased by 14,200 (8.1%) and de-registrations increased by 10,400 (6.4%) between 2002-03, an overall increase in the business population by 0.9%	UDP target= Net increase of 150 firms pa registering for VAT	Fell short of target. More firms have registered than deregistered but numbers have fallen (2001-02) reflecting the state of the economy.	VAT registrations and de registrations are the best official guide to the pattern of business start-ups and closures and are an indicator of the level of entrepreneurship and the health of the business population.	AMR	VAT data from SBS of DTI
Proportion of people of working age in employment (residents)	74.2 % (2003 mid year population estimates)	69.3 % London 74.1 % England	GLA seek to increase employment opportunities for those suffering from disadvantage in the employment market	Rate has increased slightly between 2001/2 and 2002/3	GLA KPI 9 & 10 (specifically target BME and lone parents.)	AMR LSDC 17 AC QOL1	Census 2001 Annual Labour Force Survey (LFS) 2002-2003 Nomis
Number of employees in employment (workers in Borough)	65,542 total jobs (from ABI 2003)	N/a	UDP target Modest increase in number pa	Number of jobs shows a slight increase in year 2002-2003	To measure whether the economy is growing	AMR	ABI
Objective 15: to provide appropriate commercial development opportunities to meet the needs of the local and sub-regional economy.							
Amount of land developed for employment by type	Under investigation	N/a	Not yet identified	Under investigation	GLA KPI 7 seeks to ensure that there is sufficient development capacity in the office market	ODPM core output indicator	Local monitoring

Indicator	Local data	Comparator i.e. regional /National data	Target	Local trend	Comments	Indicator status * See endnote	Data sources
Percentage of land developed for employment by type, which is on previously developed land.	100% on brownfield land breakdown under investigation	Under investigation			Under investigation	ODPM core output indicator	Local monitoring Employment land survey 2005
Employment land supply by type	Under investigation	Under investigation	Work is underway to obtain data		Under investigation	ODPM core output indicator	Employment land survey in 2005
Amount of employment land lost to residential development	Under investigation	Under investigation			Under investigation	ODPM core output indicator	Local monitoring

Indicator status

The Best Value process has resulted in a statutory performance management framework under which various national performance indicators have been set. The Audit Commission continues to set local authority performance indicators, Best Value Performance Indicators (BVPIs) in order to facilitate comparison between authorities. A Best Value Performance Plan is published every year as required by government. Its aim is to inform local people and organisations about the Council's services and activities and how well they are being provided.

ODPM require that local development frameworks LDFs are monitored annually. They have prepared a list of core output indicators to measure physical activities that are directly related to the implementation of planning policies.

London Sustainable Development Commission (LSDC) have identified a menu of Quality of Life (QOL) Indicators for use in London and have identified headline indicators which will be used to monitor London's progress towards becoming an exemplary sustainable world city.

The London Plan is the strategic plan setting out the framework for future development of London. Boroughs' development plans must be in general conformity with it. The Greater London Authority (GLA) have set out 25 Key Performance Indicators (KPI) to assess the implementation of the London Plan.

Annex 1: Additional data relating to indicators

Indicator: Additional provision of affordable housing

Table A1: Affordable Housing Completions per calendar year 1992-2003

HOUSING COMPLETIONS (NET) by calendar year

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997*	1998	1999	2000	2001	2002	2003	Average per annum		
																		1987-91 (5 yrs)	1992-6 (5 yrs)	1997-01 (5 yrs)
New build & extensions	232	294	361	314	175	304	188	187	386	284	82	418	511	418	131	290	158	275	270	312
Conversions	46	55	73	43	44	45	6	7	-6	11	-17	21	20	32	- 12	25	36	52	13	9
Change use	n/a	n/a	n/a	n/a	n/a	11	10	63	7	9	25	40	21	25	43	34	15	n/a	20	31
Total	278	349	434	357	219	360	204	257	387	304	90	479	552	475	162	349	209	327	302	352
																		Tot=1637	Tot=1512	Tot=1758

Source: Decisions Analysis System

Figures are for net gains on site

* The 1997 figures are unusually low. This may reflect reality, but may also result from a change in computer systems.

The total for 1999 is unusually high: one site in Barnes accounted for 321 units.

Table A2: Table showing key services in smaller centres in 2004

Local Centre	Chemist	Newsagents	Hairdresser	Pub / Restaurant	Post Office	Bank	off licence	food provision						total of 11 key services
								Bakers/ patisserie	Butchers	Green Grocer	small general store	supermarket (c.250m2 gfa+)	reasonable supply of fresh food available	
Ashburnham Road	*	*					*	*			*	*	*	5
Barnes	*	*	*	*	*	*	*	*	*	*	*	*	*	11
Castlenau	*	*	*	*	*		*	*			*	Tesco Express	*	8
East Twickenham	*	*	*	*	*		*			*	*		*	8
Friars Stile Road	*	*		*	*		*	*	*	*	*		*	9
Fulwell		*	*		*						*			4
Ham Common	*	*	*	*		*	*	*	*	*	*		*	10
Ham Street / Back Lane	*	*	*		*						*			5
Hampton Hill	*	*	*	*	*	*	*	*			*	*	*	9
Hampton Nursery Lands	*	*	*		*						*		*	5
Hampton Village	*	*	*	*	*	*	*	*	*	*	*		*	11
Hampton Wick		*	*	*	*		*	*			*			7
Heathside	*	*	*	*	*		*	*	*	*	*		*	10
Hospital Bridge Road	*	*			*		*		*		*		*	6
Kew Gardens Station	*	*	*	*		*	*		*	*	*		*	9
Kew Green		*		*							*			3
Kew Road		*	*	*	*		*				*		*	6
Kingston Road	*	*	*				*				*			5
Lower Mortlake Road		*					*	*	*		*			5
Nelson Road		*	*		*		*				*			5
Sandycombe Road		*	*	*	*						*			5
Sheen Road	*	*	*	*	*		*				*			7
St Margarets	*	*	*	*	*		*	*	*	*	*	*	*	10
Stanley Road	*	*	*	*	*		*	*			*			8
Strawberry Hill	*	*	*	*	*		*				*			7
Twickenham Green	*	*	*	*	*		*			*	*			8
Waldegrave Road			*	*			*			*	*			5
White Hart Lane		*	*	*	*		*				*		*	6
Whitton Road		*		*			*				*			4

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Indicator: Proportion and number of retail uses in key frontages

Table A3 showing A1 uses as a proportion of all uses in key shopping frontage

centre	2004	2002	2001	Number of uses in KSF	Change in numbers '01-'02
Ashburnham Road	75.0	75.0	75	8	0
Barnes	70.9	75.9	73.4	79	-4
Castlenau	43.5	43.5	56.5	23	0
East Sheen	76.0	72.4	68.4	75	+2
East Twickenham	73.7	73.7	68.4	19	0
Friars Stile Road	70.6	76.5	82.4	17	-1
Fulwell	90.0	70.0	90.0	10	+2
Ham Street / Back Lane	41.7	33.3	50.0	12	+1
Ham Common	72.4	70.0	70.0	29	0
Hampton Hill	80.0	80.0	80.0	25	0
Hampton Nursery Lands	100.0	100.0	75.0	4	0
Hampton Village	68.0	72.0	72.0	25	-1
Hampton Wick	50.0	33.3	25.0	12	+2
Heathside	86.7	86.7	86.7	15	0
Hospital Bridge Road	100.0	100.0	100.0	6	0
Kew Gardens Station	73.1	74.1	74.1	26	-1
Kew Green	88.9	77.8	77.8	9	+1
Kingston Road	55.6	61.1	61.1	18	-1
Lower Mortlake Road	61.5	61.5	69.2	13	0
Nelson Road	72.7	72.7	81.8	11	0
Richmond	73.2	71.2	73.0	235	+4
St Margarets	64.5	64.5	60.0	31	0
Sandycombe Road	83.3	83.3	83.3	0	0
Sheen Road	66.7	66.7	77.8	6	0
Stanley Road	71.4	61.9	76.2	9	+2
Strawberry Hill	64.3	60.0	68.8	21	0
Teddington	73.9	64.4	71.1	14	+7
Twickenham Green	64.7	58.8	64.7	88	+1
Twickenham	66.4	63.8	67.7	17	+4
Waldegrave Road	54.5	45.5	45.5	131	+1
White Hart Lane	66.7	76.2	76.2	11	-2
Whitton	74.7	74.3	73.0	21	+1
Whitton Road	60.0	60.0	60.0	75	0
average	70.7	68.5	70.7		0

Indicator: Net increase in the stock of employment floorspace (completions)

Table A4: Change to employment floorspace in main centres

number	address	loss (m2)	gain (m2)	Richmond & district centres	loss to other use	notes
00/ 0163/	Adj to 2 Lion Road, Twick		72	no	B8 to B1	
00/ 1156/	rear of 25-31 Alexandra Rd, Twick		23	no		extension to existing B1
02/ 1337/	159 Stanley Rd Teddington		12	no	replacement B1 offices	+ small extension of an existing use
02/ 2513/	55 High Street, Hampton Hill		178	yes	B2 to B1 & dwellings	extend roofspace of offices. alternative to approved scheme 02/0388
02/ 0388	55 High Street, Hampton Hill	87		yes	B2 to B1 & A2	
98/ 0786/	St Clare Business Park, Holly Rd		46	no		extension of an existing use
03/ 2507/	22 Linden Rd, Hampton			no	B8 to B1	alterations to existing building to facilitate its use as offices incidental to existing commercial use
00/ 2485/	13 St Johns Rd, Hampton Wick	689		no	1000 sqm B2 to live / work	7 live/work units
01/ 0754/	82 High St, Teddington		30	no	new B1unit	A1 or A2 + C3
99/ 1886	20 (formerly 14-32) Mortlake High Street		1189	yes	Sui Generis to B1	part of scheme of 42 residential units, café, health/fitness club
03/ 0479/	159 Mortlake Rd, Kew		125	no	B1 Infill Extension	Extension involving raising of the roof.
02/ 1225/	84 Lower Mortlake Road		362	no		extension of an existing use
00/ 3375/	1 The Green, Richmond		125	yes	D1 to B1, B8 reduced by 15m2	Mixed use: offices and A1
02/ 0606/	1 The Quadrant, Richmond		44	yes	extension of B1	First floor extension
99/ 0218/	7 The Quadrant, Richmond	180		no	B8 to retail	Conversion to retail and 2x flats
03/ 3115/	1a May Road, Twickenham		40	yes		Replacement of existing B1
02/ 2646/	180 High St, Teddington	455		yes	B1 to D1 and B8	D1 medical health service
00/ 0921/	46-50 Staines Rd		62	no	B8 to B1& B2	warehouse replaced with houses and converted office space.
	total	-1411	+2308			Net extra in Borough 897 sq m

The gross figures reveal that 1,576 m² of completed employment land was in the district centres, while 732 m² was gained, mainly through conversion (of B8 and B2 to B1), intensification or extension of existing employment uses outside of these centres. The losses of 542 m² in the centres and 869 m² in outside areas reveal a net loss of 137 m² in the outer areas for this year.