Introduction

Appendix E sets out the collated contextual and baseline information, on a topic-by-topic basis, for each of the 10 assessment topics:

1. **Biodiversity and Nature Conservation** including Fauna and Flora
2. **Population** including demographics, socio-economics
3. **Human health**
4. **Soil** including geology and land use
5. **Water** including surface and ground water quality and availability
6. **Air quality**
7. **Climatic Factors** including climate change and adaptation and flood risk
8. **Material Assets** including waste management and minerals
9. **Cultural Heritage** including architectural and archaeological heritage
10. **Landscape and Townscape**

The information for each topic is structured as follows in compliance of the SEA Directive Annex I (b) – (g) requirements:

Annex I SEA Directive Requirements	Sub section in the Topic chapter
	Introduction - provides an overview and definition of the topic.
e) The environmental protection, objectives, established at international, Community or national level, which are relevant to the plan or programme and the way those objectives and any environmental, considerations have been taken into account during its preparation	**Summary of national and regional plans and programmes** - provides an overview of the policy context in which the revocation plan sits and identifies the environmental protection, objectives, established at international, Community or national level that are relevant to the Regional Strategy.
b) The relevant aspects of the current state of the environment and the likely evolution thereof without implementation of the plan or programme	**Overview of the baseline -** provides an overview of the relevant aspects of the current state of the environment at a national and regional level and the key topic specific baseline factors which will need to be considered as part of the assessment. **The likely evolution of these baseline conditions without the implementation of the revocation plan** - provides an overview of how the baseline is likely to change in the absence of the revocation plan, an understanding of this is key to understanding the effects of the revocation plan on the topic area;
c) The environmental characteristics of areas likely to be significantly affected	**The environmental characteristics of areas likely to be significantly affected** – provides a summary of those key aspects of the region most likely to be affected by the plan.

Annex I SEA Directive Requirements	Sub section in the Topic chapter
d) Any existing environmental problems which are relevant to the plan or programme including, in particular, those relating to any areas of a particular environmental importance, such as areas designated pursuant to Directives 79/409/EEC and 92/43/EEC.	**Current problems in areas of particular environmental importance** (such as those designated under the Wild Birds and Habitats Directives). Given the focus on European designated conservation sites this sub-section on appears in biodiversity.
f) The likely significant effects on the environment, including on issues such as biodiversity, population, human health, fauna, flora, soil, water, air, climatic factors, material assets, cultural heritage including architectural and archaeological heritage, landscape and the interrelationship between the above factors. (Footnote: These effects should include secondary, cumulative, synergistic, short, medium and long-term permanent and temporary, positive and negative effects)	**Assessing significance** –provides an outline of the illustrative guidance used to assess the potential effects for each topic. **Assessment of likely significant effects of retention, revocation and partial revocation** - including information on the likely significant effects.
g) The measures envisaged to prevent, reduce and as fully as possible offset any significant adverse effects on the environment of implementing the plan or programme;	**Proposed mitigation measures** – including proposed measures identified.

1. Biodiversity and Nature Conservation

1.1 Introduction

The overview of plans and programmes and baseline information contained in this section provides the context for the assessment of potential effects of the revocation plan on biodiversity and nature conservation. Information is presented for both national and regional levels.

Biodiversity in this context is defined by the ***Convention on Biological Diversity***[1] as 'the variability among living organisms from all sources including, inter alia, terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are part; this includes diversity within species, between species and of ecosystems.' Biodiversity is integral to the functioning of ecosystems and these, in turn, provide 'ecosystem services' which include food, flood management, pollination and the provision of clean air and water.

There are links between the biodiversity and nature conservation topic and other topics in the SEA, including water, soil and geology, land use, and climate change.

1.2 Summary of Plans and Programmes

1.2.1 International

The UK is a signatory (along with another 189 parties) to the **Convention on Biological Diversity**, Nagoya, Japan, 2010 which sets out a conservation plan to protect global biodiversity, and an international treaty to establish a fair and equitable system to enable nations to co-operate in accessing and sharing the benefits of genetic resources. The new global vision is: 'By 2050, biodiversity is valued, conserved, restored and wisely used, maintaining ecosystem services, sustaining a healthy planet and delivering benefits essential for all people.' The parties also agreed a shorter-term ambition to 'Take effective and urgent action to halt the loss of biodiversity, [so] that by 2020 ecosystems are resilient and continue to provide essential services, thereby securing the planet's variety of life, and contributing to human well-being, and poverty eradication'.

In March 2010, the European Union (EU) agreed to **an EU vision and 2020 mission for biodiversity**:

- By 2050, EU biodiversity and the ecosystem services it provides – its natural capital – are protected, valued and appropriately restored for biodiversity's intrinsic value and for their

[1] The convention uses this definition to describe 'biological diversity' commonly taken to mean the same as biodiversity.

essential contribution to human wellbeing and economic prosperity, and so that catastrophic changes caused by the loss of biodiversity are avoided;

- Halt the loss of biodiversity and the degradation of ecosystem services in the EU by 2020, and restore them insofar as is feasible, while stepping up the EU contribution to averting global biodiversity loss.

The European Commission adopted a new **EU Biodiversity strategy** to help meet this goal. The strategy provides a framework for action over the next decade and covers the following key areas:

- Conserving and restoring nature;
- Maintaining and enhancing ecosystems and their services;
- Ensuring the sustainability of agriculture, forestry and fisheries;
- Combating invasive alien species;
- Addressing the global biodiversity crisis.

There are a number of EU Directives focusing on various types of wildlife and habitat that provide a framework for national action and international co-operation for conservation on land and in the sea. In particular the ***Habitats Directive*** and ***Birds Directive*** include measures to maintain or restore important natural habitats and species including through the designation of Special Areas of Conservation (SACs) and Special Protection Areas (SPAs). These Directives are transposed into British law through a number of regulations and planning policy documents. The ***Freshwater Fish Directive*** includes measure on the quality of fresh waters needing protection or improvement in order to support fish life.

The ***Marine Strategy Framework Directive 2008/56/EC*** requires Member States to develop a marine strategy, including determining Good Environmental Status (GES) for their marine waters, and designing and implementing programmes of measures aimed at achieving it by 2020, using an ecosystem approach to marine management. It takes account both of socioeconomic factors and the cost of taking action in relation to the scale of the risk to the marine environment. Draft regulations establish a legal framework which assigns duties to the Secretary of State, Welsh and Scottish Ministers and the Department of the Environment in Northern Ireland have been published for consultation.

Under the ***Ramsar Convention***, wetlands of international importance are designated as Ramsar Sites. As a matter of policy, Ramsar sites in England are protected as European sites. The vast majority are also classified as SPAs and all terrestrial Ramsar sites in England are notified as Sites of Special Scientific Interest (SSSIs).

1.2.2 National

UK

The Wildlife and Countryside Act 1981 is the main UK legislation relating to the protection of named animal and plant species includes legislation relating to the UK network of nationally protected wildlife areas: Site of Special Scientific Interest (SSSIs[2]). Under this Act, Natural England now has responsibility for identifying and protecting the SSSIs in England. The ***Countryside and Rights of Way Act 2000*** (CROW) strengthens the powers of Natural England to protect and manage Sites of Special Scientific Interest. The CROW Act improves the legislation for protecting and managing SSSIs so that:

- Natural England can change existing SSSIs to take account of natural changes or new information;
- all public bodies have a duty to further the conservation and enhancement of SSSIs;
- neglected or mismanaged sites can be brought into favourable management;
- new offences and heavier penalties now apply to people who illegally damage SSSIs.

The ***UK Biodiversity Action Plan 1994*** was the UK Government's response to signing the Convention on Biological Diversity (CBD) at the 1992 Rio Earth Summit. The CBD called for the development and enforcement of national strategies and associated action plans to identify, conserve and protect existing biological diversity, and to enhance it wherever possible. The UK Biodiversity Action Plan was then established to conserve and enhance biodiversity in the UK through the use of Habitats and Species Action Plans to help the most threatened species and habitats to recover and to contribute to the conservation of global biodiversity. The plan set out a programme for conserving the UK's biodiversity. It also led to the production of 436 action plans between 1995 and 1999 to help many of the UK's most threatened species and habitats to recover. A review of the UK BAP priority list in 2007 led to the identification of 1,150 species and 65 habitats that meet the BAP criteria at UK level. As well as having national priorities and targets, action was taken at a local level to create Local Biodiversity Action Plans (LBAPS). These identify local priorities for biodiversity conservation and work to deliver agreed actions and targets for priority habitats and species and locally important wildlife and sites.

Conserving Biodiversity – The UK Approach (2007) sets out an approach to halt UK biodiversity loss by 2010 using an integrated framework of an Ecosystem Approach[3]. Key targets include:

[2] As amended by the *Countryside and Rights of Way (CROW) Act 2000* and the *Natural Environment and Rural Communities (NERC) Act 2006*

[3] The Convention on Biological Diversity (http://www.cbd.int/ecosystem/) defines the Ecosystem Approach as *'a strategy for the integrated*

- for 95% of SSSIs to be in favourable or recovering condition by 2010;
- to halt the loss of biodiversity by 2010; and
- to reverse the long-term decline in the number of farmland birds by 2020

More recently the ***Conservation of Habitats and Species Regulations 2010*** requires that sites of importance to habitats or species are to be designated and any impact on such sites or species must be considered in regards to planning permission applications.

The ***Environmental Protection Act 1990*** sets out key statutory requirements for the UK regarding environmental protection (including waste and nature conservation).

The ***Marine and Coastal Access Act 200)*** sets out a number of measures including the establishment of Marine Conservation Zones (MCZs) and Marine Spatial Plans. The ***Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007*** apply in the 'offshore area' beyond 12 nautical miles from the UK coast. They provide protection for a variety of marine species and wild birds through a number of offences that aim to prevent damaging activities affecting protected species and habitats.

The ***National Parks and Access to the Countryside Act 1949*** aims to conserve and protect countryside and National Parks through legislation.

The ***Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007*** apply in the 'offshore area' beyond 12 nautical miles from the UK coast. They provide protection for a variety of marine species and wild birds through a number of offences that aim to prevent damaging activities affecting protected species and habitats.

England

The Natural Environment and Rural Communities (NERC) Act 2006 establishes Natural England as the main body responsible for conserving, enhancing and managing England's natural environment. It also covers biodiversity, pesticides harmful to wildlife and the protection of birds.

The ***Natural Environment White Paper (2011)*** recognises that nationally, the fragmentation of natural environments is driving continuing threats to biodiversity. It sets out the Government's policy intent to:

- improve the quality of the natural environment across England;
- move to a net gain in the value of nature;

management of land, water and living resources that promotes conservation and sustainable use in an equitable way.'

- arrest the decline in habitats and species and the degradation of landscapes;
- protect priority habitats;
- safeguard vulnerable non-renewable resources for future generations;
- support natural systems to function more effectively in town, in the country and at sea; and
- create an ecological network which is resilient to changing pressures.

By 2020, the Government wants to achieve an overall improvement in the status of the UK's wildlife including no net loss of priority habitat and an increase of at least 200,000 hectares in the overall extent of priority habitats. Under the White Paper, the Government has also put in place a clear institutional framework to support nature restoration which includes Local Nature Partnerships creating new Nature Improvement Areas (NIAs).

Biodiversity 2020: A strategy for England's wildlife and ecosystem (2011) is a new biodiversity strategy for England that builds on the Natural Environment White Paper and provides a comprehensive picture of the Government is implementing the international and EU commitments. It sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea.

The ***National Planning Policy Framework (NPPF) (2012)*** replaces the majority of previously used planning policy including Planning Policy Statement 9 on Biodiversity and Geological Conservation. The NPPF includes key policies to ensure the planning system contributes to and enhances the natural and local environment by:

- protecting and enhancing valued landscapes, geological conservation interests and soils;
- recognising the wider benefits of ecosystem services;
- minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil, air, water or noise pollution or land instability; and
- remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where

appropriate.

The Framework states that, when preparing plans to meet development needs, the aim should be to minimise pollution and other adverse effects on the local and natural environment. Local planning authorities are expected to set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity or landscape areas will be judged. In doing so they must take into account the policies in the Framework including those which set out the circumstances where in order to conserve and enhance biodiversity planning permission should be refused.

1.2.3 South West Regional Plans

The **South West Biodiversity Implementation Plan (2004)** sets out a framework of policy, priorities and actions to assist in a more joined up approach to biodiversity delivery. It updates those actions included in the **South West Biodiversity Action Plan (1997)** and is a contribution to the 'Biodiversity Strategy for England'. The Plan identifies the following priorities:

- Maintain and enhance biodiversity by sensitively managing existing habitats, expanding and re-establishing links between fragmented sites and, where appropriate, managing at a larger, functional scale (landscape, ecosystem or catchment).
- Develop integrated sustainable land management practices that safeguard and enhance the region's biodiversity whilst also bringing benefits to society, the economy and environment.
- Increase awareness and understanding of the importance of biodiversity to the region's health, quality of life and economic productivity, and develop wider support and active engagement.
- Understand and manage the dynamic processes of change (e.g. climate change) and develop long-term sustainable approaches within the region that focus on the quality, extent and diversity of habitats.

There are twenty-four other Local Biodiversity Actions Plans (LBAPs) covering the South West (as of March 2011). These are listed in **Table 1.1** below.

Table 1.1 Local Biodiversity Action Plans in the South West of England

Coverage	Title
Avon	Avon Biodiversity Partnership
Bath and North East Somerset	Wild Things: A Biodiversity Action Plan for Bath and North East Somerset
Bristol City	Bristol Biodiversity Action Project
Cornwall County	Cornwall's Biodiversity vol 1, 2 and 3
Cotswold Water Park	Cotswold Water Park Biodiversity Action Plan
Dartmoor National Park, Devon	Action for Wildlife: The Dartmoor Biodiversity Action Plan
Devon County	Devon Biodiversity Action Plan
Dorset County	Dorset Biodiversity Strategy
Exmoor National Park	Exmoor Local Biodiversity Action Plan
Gloucestershire County	Biodiversity Action Plan for Gloucestershire
Mendip District, Somerset	Mendip Biodiversity Action Plan
North Devon	Nature's Space - A Biodiversity Action Plan - North Devon
North Somerset	Action for Nature
Purbeck, Dorset	Purbeck Local Biodiversity Action Plan
Quantock Hills AONB	Quantock Hills AONB Local Biodiversity Action Plan
Sedgemoor District, Somerset	Sedgemoor District Local Biodiversity Action Plan
South Gloucestershire Unitary Authority Area	South Gloucestershire Local Biodiversity Action Plan
South Somerset District	South Somerset Biodiversity Action Plan
Swindon Unitary Authority, Wiltshire	Swindon Biodiversity Action Plan
Taunton Deane, Somerset	Taunton Deane Biodiversity Action Plan

Coverage	Title
Teignbridge	Teignbridge BAP
Torbay Borough, Devon	Torbay Local Biodiversity Action Plan
West Somerset District	West Somerset Biodiversity Action Plan
Wiltshire County	Wiltshire Biodiversity Action Plan

LBAPs are normally prepared and coordinated at the county level. The plans usually include actions to address the needs of the UK priority habitats and species in the local area, together with a range of other plans for habitats and species that are of local importance or interest.

1.3 Overview of the Baseline

1.3.1 England

There are over 4,100 SSSIs in England, covering 1,076,986ha (including open water and coastal habitats). In terms of land area, approximately 8% of England is designated as SSSI.[4]

In England there are 250 SACs, 85 SPAs and 74 RAMSAR sites.[5]

As at 01 May 2012 the overall condition of SSSIs in England was assessed by Natural England to be 37.25% as area favourable; 59.4% area unfavourable recovering; 2.21% area unfavourable no change; 1.11% area unfavourable declining and 0.03% area destroyed/part destroyed.[6] The reasons for adverse conditions at sites are set out in **Table 1.2**. This indicates that planning permission (general) was linked to 0.93% of the area not meeting the Natural England Public Service Agreement (PSA) targets and planning permission (mineral and waste) 0.25%.[7] Whilst these targets have been superseded, the were linked to delivering the commitments in the 2007 Conserving Biodiversity Strategy such as the requirement to have 95% of SSSIs to be in favourable or recovering condition by 2010.

[4] Natural England http://www.naturalengland.org.uk/ourwork/conservation/designatedareas/sssi/default.aspx

[5] JNCC Protected sites http://jncc.defra.gov.uk/page-1456

[6] http://www.sssi.naturalengland.org.uk/special/sssi/reportAction.cfm?Report=sdrt15&Category=N&Reference=0

[7] http://www.sssi.naturalengland.org.uk/special/sssi/reportAction.cfm?Report=sdrt17&Category=N&Reference=0

Table 1.2 Reasons for Adverse Condition Summary

Reason for adverse condition	Percentage of unit area not meeting the PSA target	Reason for adverse condition	Percentage of unit area not meeting the PSA target
Inappropriate scrub control	14.46%	Fire - other	1.73%
Under-grazing	13.95%	Inappropriate coastal management	1.71%
Overgrazing	11.66%	Vehicles - other	1.68%
Water pollution - agriculture/run off	11.31%	Moor burning	1.62%
Inappropriate water levels	10.48%	Earth science feature obstructed	1.51%
Invasive freshwater species	8.75%	Vehicles - illicit	1.33%
Forestry and woodland management	5.90%	**Planning permission - general**	0.93%
Drainage	5.27%	Inappropriate css/esa prescription	0.79%
Coastal squeeze	5.16%	Sea fisheries	0.71%
Inappropriate weirs dams and other structures	4.46%	Air pollution	0.60%
Inappropriate weed control	4.28%	Peat extraction	0.50%
Water pollution – discharge	4.25%	Inland flood defence works	0.40%
Inappropriate cutting/mowing	3.95%	Game management - pheasant rearing	0.35%
Deer grazing/browsing	3.60%	Game management - other	0.32%
Public access/disturbance	3.30%	Inappropriate dredging	0.25%
Inappropriate ditch management	3.19%	**Planning permission - other mineral and waste**	0.25%
Siltation	3.06%	Inappropriate pest control	0.22%
Fish stocking	2.75%	Earth science feature removed	0.14%
Fertiliser use	2.67%	Inappropriate stock-feeding	0.09%
Water abstraction	2.06%	Pesticide/herbicide use	0.04%
Agriculture – other	1.77%	Other	14.07%

1.3.2 South West

The biodiversity of the South West of England is recognised as being rich and diverse, containing a significant proportion of the UK's overall resource of important wildlife sites, habitats and species. Priority habitats present in the region include:

- Calcareous grassland – 62% of the UK total;
- Lowland heathland – 25% of the UK total;
- Lowland meadows- 57% of the UK total;
- Saline lagoons- 37% of the UK total;
- Ancient semi-natural woodland – 20% of England's total.

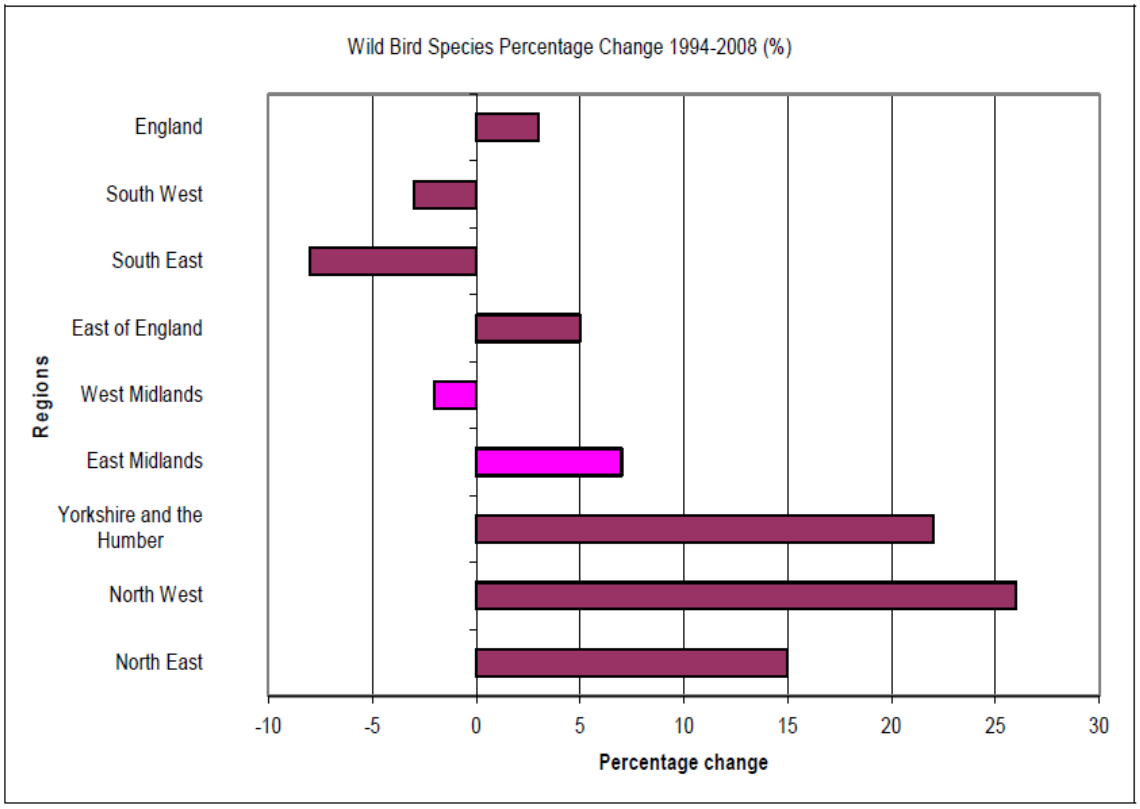
The region also supports 25 species that are internationally important, over 700 that are of national conservation concern, and 34 species endemic to the UK, 11 of which are only found in the South West including lundy cabbage, western ramping fumitory and cornish path moss. 70% of the UK population of greater horseshoe bats occur in the South West and over 25% of the national population of nightjar.[8]

However, some habitats and species have declined in the South West and continue to do so. In this context, over the period 1970 to 2008 the population of all native birds in the South West, including farmland and woodland species (a key indicator of biodiversity is woodland and farmland birds) decreased by 3%. This differed to the England trend, which showed an overall 3% increase (see **Figure 1.1**). Between 1994 and 2008, the regional farmland bird indicator showed a decline of 12% in the South West, broadly in line with the England average of -11% whilst the woodland bird indicator declined by 10%, higher than the England average of -6%[9].

[8] South West Regional Biodiversity Partnership (2004) South West Biodiversity Implementation Plan, available from http://www.biodiversitysouthwest.org.uk/docs/South%20West%20Biodiversity%20Implementation%20Plan.pdf [Accessed June 2012]

[9] Defra (2010) Wild Bird Population Indicators for the English Regions: 1994 – 2008, available from http://www.defra.gov.uk/statistics/files/wdbrds201004.pdf [Accessed June 2012]

Figure 1.1: Wild Bird Species Change



Designated Sites

Within the South West there are a large number of sites that are designated as internationally, nationally or locally important for biodiversity. There are a total of 101 internationally designated (Natura 2000) sites within the region including 10 Ramsar Sites, 74 SACs and 17 SPAs.

There are a total of 986 SSSIs within the region covering an area of over 200,000ha. This represents almost a quarter of England's SSSIs and 16% of all SSSI land area in England[10]. As of May 2012, 95.5% of all SSSIs in the region were currently meeting the Government's Public Service Agreement (PSA) target condition of 95% being in favourable or recovering condition (see **Table 1.3**). This was slightly below the English average of 96.7% and the seventh lowest recorded by a region (out of 9).

[10] South West Observatory (2011) State of the South West 2011, available from http://www.swo.org.uk/state-of-the-south-west-2011/ [Accessed June 2012]

Within the South West region, Devon had the highest proportion in target condition with almost 97.5%, followed by Wiltshire with 97.4%. Dorset recorded the lowest proportion with 86.4%.

Table 1.3 SSSI Condition: South West (2012)

County	% Area Favourable	% Area Unfavourable Recovering	% Area Unfavourable No Change	% Area Unfavourable Declining	% Area Destroyed/Part Destroyed
Former Avon	84.8%	9.6%	3.4%	2.2%	0.0%
Cornwall	49.6%	46.7%	1.4%	2.2%	0.1%
Devon	36.9%	60.6%	1.4%	1.0%	0.0%
Dorset	40.1%	46.6%	9.7%	3.6%	0.1%
Gloucestershire	79.8%	16.0%	1.5%	2.7%	0.0%
Somerset	34.2%	61.8%	3.2%	0.8%	0.0%
Wiltshire	22.8%	74.6%	2.2%	0.4%	0.0%
South West	**40.9%**	**54.6%**	**2.9%**	**1.5%**	**0.0%**

Source: Natural England (2012) Sites of Special Scientific Interest: Reports and Statistics, available from http://www.sssi.naturalengland.org.uk/Special/sssi/report.cfm?category=R,RF [Accessed June 2012]

There are two National Parks wholly within the South West, Dartmoor and Exmoor, covering around 7% of the region (the western part of the New Forest National Park is also in the South West). Other nationally designated sites include 12 Areas of Outstanding Natural Beauty (AONBs) and parts of two other AONBs which extend to 30% of the region (twice the proportion covered by AONBs in England as a whole) and 50 National Nature Reserves. The region also contains 179 Local Nature Reserves covering an area of 3,229ha[11].

1.4 Environmental Characteristics of those Areas most likely to be Significantly Affected

The area around Bristol and Bath contains 86 SSSIs and many other areas important for biodiversity, such as the Gordano Valley and Leigh Woods National Nature Reserves, a number of SPAs and local Sites of Nature Conservation Importance (SNCIs). The Severn Estuary is also a European Marine Site.

[11] Natural England (2012) Local Nature Reserves, available from http://www.lnr.naturalengland.org.uk/Special/lnr/lnr_search.asp [Accessed June 2012]

The area around Cheltenham and Gloucester is predominantly rural in nature with a variety of areas important for biodiversity, such as the floodplain of the River Severn, the AONB designations (covering over 50% of the County of Gloucestershire), 3 Special Landscape Areas, SSSIs, Biodiversity Action Plan Priority Habitats and Local Nature Reserves.

Exeter and the sub-region is drained by the Creedy, Clyst, Culm and Exe river systems. The area also contains the Haldon Hills, an area of Great Landscape Value, and the Jurassic Coast (between Exmouth and Dorset) which is a World Heritage site. Much of the estuary and surrounding habitats are designated as internationally important for wildlife.

The area around Taunton includes the two AONB's (the Quantock Hills to the north of Taunton and the Blackdown Hills to the southeast of Taunton), a number of County Wildlife and Geological Sites, and watercourses, including through the centre of Taunton, that contain protected species, such as otter, kingfish and water vole.

In terms of nature conservation value, Dorset is one of the most important counties in the UK. The varied geology, maritime influence, geographical location and the relatively low level of development across the County have resulted in a rich and diverse range of habitats. Dorset includes a range of important habitats that have been given statutory, or other, protection through designations ranging from international and national to those made by local authorities and nature conservation trusts. Important designated areas include Ramsar sites, SPAs, ESAs, NNRs, SSSIs, LNRs, AoSP, SNCI, SMAs and the New Forest National Park.

Plymouth and surrounding areas include the designated landscapes of the Dartmoor National Park, AONBs and the European designated nature conservation sites of Plymouth Sound and Estuaries SAC and the Tamar Estuaries SPA.

1.5 Summary of Existing Problems Relevant to Revocation of the Plan

The following existing problems for biodiversity have been identified:

- Development Pressure: direct and indirect impacts of development and infrastructure on biodiversity more generally (e.g. from habitat loss and fragmentation; recreational pressure, over abstraction of water, and air and water pollution);
- Climate Change: the impacts of climate change on habitats and species;
- Agricultural practices: intensification of agriculture has exacerbated the decline in biodiversity;

- Loss of wider biodiversity within non-designated areas

1.6 Likely Evolution of the Baseline

1.6.1 Likely Evolution of the Baseline - England

Results of the 2008 reporting round of the UK Biodiversity Action Plan indicate that in England:[7]

Habitats:

- 17% of priority habitats were increasing (compared to 24% in 2005);
- 12% of priority habitats were stable (compared to 12% in 2005);
- 12% of habitats were declining (continuing/accelerating) (compared to 2% in 2005);
- 24% of habitats were declining (slowing) (compared to 34% in 2005);
- 24% of habitats were fluctuating (compared to 7% in 2005); and
- the status of 10% of habitats was unknown (compared to 20% in 2005).

Species:

- 8% of species were increasing (no change since 2005);
- 22% of species were stable (no change since 2005);
- 24% of species were fluctuating (compared to 19% in 2005);
- 6% of species were declining (slowing) (compared to 8% in 2005);
- 8% of species were declining (continuing/accelerating) (compared to 10% in 2005);
- 3% of species were lost (pre BAP publication) (no change since 2005);
- 5% of species showed no clear trend (compared to 7% in 2005); and
- the status of 21% of species was unknown (no change since 2005).

In England, in 2009 over 80% of SACs and SPAs were in favourable or recovering condition. For the decade up to 2008, SSSI condition in England has experienced a dramatic improvement in the overall

site condition over the last 10 years as a result of protection and management[12]. However, some species in particular continue to be impacted upon. The trend in populations of breeding wading birds on unprotected lowland wetland grasslands is towards a major decline.[13]

Despite the increase in area protected for its biodiversity there is concern that the protected site network as it exists is insufficient to protect biodiversity in England as a whole and that some species and habitats will be confined to these protected areas and more vulnerable to pressures and threats, including climate change.[14]

1.6.2 Likely Evolution of the Baseline - South West Region

The South West Biodiversity Implementation Plan identifies the following key threats to biodiversity in the region:

- land use change (e.g. through agricultural intensification, urban development and drainage/water level management);
- environmental pollution;
- climate change, which affects many habitats, especially soft coastal habitats (e.g. Bridgwater Bay saltmarshes), floodplain marshes (e.g. Somerset Levels and Moors), and chalk rivers (e.g. the River Avon);
- fragmentation and isolation of habitats;
- damaging fishing methods in the marine environment; and
- introduction of non-native species.

Whilst 1.5% of SSSI area is in unfavourable declining condition, there are signs of improvement as over half (54%) are classified as unfavourable recovering.

1.7 Assessing Significance

Table 1.4 sets out guidance utilised during the assessment to help determine the relative significance of potential effects on the biodiversity objective. It should not be viewed as definitive or prescriptive; merely illustrative of the factors that were considered as part of the assessment process.

[12] Natural England (2008) State of the Environment Report
[13] Joint Nature Conservation Committee, Protected Areas, http://www.jncc.gov.uk/page-4241)
[14] Lawton *et al* (2010) Making Space for Nature: A review of England's Wildlife Sites and Ecological Network

Table 1.4 Approach to Determining the Significance of Effects on Biodiversity

Effect	Description	Illustrative Guidance
++	Significant positive	• Alternative would have a significant and sustained positive impact on European or national designated sites and/or protected species. (e.g. – fully supports all conservation objectives on site, long term increase in population of designated species) • Alternative would have a strong positive effect on local biodiversity (e.g. – through removal of all existing disturbance/pollutant emissions, or creation of new habitats leading to long term improvement to ecosystem structure and function). • Alternative will create new areas of wildlife interest with improved public access in areas where there is a high demand for access to such sites.
+	Positive	• Alternative would have a minor positive effect on European or national designated sites and/or protected species (e.g. – supports one of the conservation objectives on site, short term increase in population of designated species). • Alternative may have a positive net effect on local biodiversity (e.g. – through reduction in disturbance/pollutant emissions, or some habitat creation leading to temporary improvement to ecosystem structure and function). • Alternative will enhance existing public access to areas of wildlife interest in areas where there is some demand for such sites.
0	No (neutral effects)	• Alternative would not have any effects on European or national designated sites and/or any species (including both designated and non-designated species). • Alternative would not affect public right of way or access to areas of wildlife interest.
-	Negative	• Alternative would have minor short-term negative effects on non-designated conservation sites and species (e.g. – through a minor increase in disturbance/pollutant emissions, or some loss of habitat leading to temporary loss of ecosystem structure and function). • Alternative will decrease public access to areas of wildlife interest in areas where there is some demand for such sites.
--	Significant negative	• Alternative would have a negative and sustained effect on European or national designated sites and/or protected species (e.g. – prevents reaching all conservation objectives on site, long term decrease in populations of designated species). These impacts could not reasonably be compensated for. • Alternative would have strong negative effects on local biodiversity (e.g. – through an minor increase in disturbance/pollutant emissions, or considerable loss of habitat leading to long term loss of ecosystem structure and function).
?	Uncertain	• From the level of information available the impact that the Alternative would have on this objective is uncertain.

1.8 Assessment of Significant Effects of Retention, Revocation and Partial Revocation

Table 1.5 summarises the significant effects identified in the detailed assessment of the RPG10 policies against the biodiversity topic.

Table 1.5 Significant Effects against the Biodiversity Topic

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
SS20 Retention	++	++	++	This policy relates to rural land uses including at the urban fringe, supporting rural development and agri-environmental measures that respect the wider biodiversity objectives of RPG10. The policy also supports agri-environmental measures. RES Regional Priority 3B 'Promote and enhance what is best about the region' reflects this policy in seeking to maintain and enhance the region's environmental assets and to use them to raise the profile and image of the South West. Given the link to agriculture of much of the deterioration of many SSSIs, this policy if successfully implemented would probably have the greatest effect on biodiversity of all the policies in the plan -although actions are outside the scope of the planning system. The policy also specifically stipulates that the plans of local authorities and other bodies should seek to protect and enhance the region's biodiversity assets including designated sites, conserve the region's most versatile agricultural land and support the protection of woodland and community woodland projects (which may offer nature conservation improvements). In consequence, retention has been assessed as having a significant positive effect against the biodiversity topic.
SS20 Revocation	++	++	++	The legal requirement for local planning authorities to ensure that internationally and nationally designated sites are given the strongest level of protection and that development does not have adverse effects on the integrity of sites of European or international importance for nature conservation would be unchanged by revocation. Effects associated with the revocation of Policy SS20 are expected to be similar to those identified in relation to its retention above. This reflects the fact that most local plans have been in place since RPG10 was published and are therefore expected to accord with the provisions of the policy (34 local authorities have plans in place which are in general conformity with RPG10). Paragraph 109 to 119 of the NPPF will also apply in the short, medium and longer term concerning the protection and enhancement of the natural and local environment. This includes recognising the wider benefits of ecosystem services; and minimising impacts on biodiversity and providing net gains in biodiversity where possible. Paragraph 109 in the NPPF states that the planning system should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes, geological conservation interests and soils and preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil (and other types) of pollution. The NPPF also requires local planning authorities to take into account the economic and other benefits of the best and most versatile agricultural land (paragraph 112) and ancient

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				woodland and aged or veteran trees outside ancient woodland (paragraph 118) . Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of a higher quality. The NPPF also includes a concise but strong policy that requires local planning authorities to plan positively for the creation, protection, enhancement and management of networks of green infrastructure. The creation and enhancement of green infrastructure is likely to include a woodland component where local planning authorities and their communities consider this appropriate. Local Nature Partnerships, once established, can also be expected to play a positive role in supporting the conservation and enhancement of environmental assets including woodland protection and creation. The Government's White Paper, The Natural Choice, recognises and supports the protection and improvement of woodland and forests. In consequence, revocation has been assessed as having the same positive benefits as retention.
EN1 Retention	++	++	++	This policy strongly supports the protection and enhancement of the region's rich and varied biodiversity including internationally and nationally designated sites. It stipulates that local authorities and other agencies in their plans, policies and programmes should develop policies for the protection of national, regional and local nature conservation interests and promotion of the maintenance, restoration and expansion of depleted and vulnerable resources in the context of the targets set out in the South West Biodiversity Action Plan (although these targets are now out-dated). RES Regional Priority 3B 'Promote and enhance what is best about the region' reflects this policy in seeking to maintain and enhance the region's environmental assets and to use them to raise the profile and image of the South West. In consequence, retention been assessed as having a significant positive effect against the biodiversity topic.
EN1 Revocation	++	++	++	The legal requirement for local planning authorities to ensure that internationally and nationally designated sites are given the strongest level of protection and that development does not have adverse effects on the integrity of sites of European or international importance for nature conservation would be unchanged by revocation. This policy has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10) and, further, superseded by local policies reflecting policy/legislation published since RPG10. Paragraph 109 to 119 of the NPPF will apply concerning the protection and enhancement of the natural and local environment. This includes recognising the wider benefits of ecosystem services; and minimising impacts on biodiversity and providing net gains in biodiversity where possible. Paragraph 117 states that planning policies should: • plan for biodiversity at a landscape-scale across local authority boundaries; • identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation; • promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan; • aim to prevent harm to geological conservation interests; and • where Nature Improvement Areas are identified in local plans, consider specifying the

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				types of development that may be appropriate in these Areas. In encouraging the maintenance and enhancement of biodiversity, Policy EN1 identifies specific assets and associated habitat targets (although these are now outdated). Whilst there is a risk that revocation will, in the medium to long term (as existing adopted local plans are replaced), affect planning for biodiversity at the regional/sub-regional level, it is expected that local authorities will continue to work together, in accordance with the duty to co-operate and the requirements of the NPPF as set out above, to coordinate strategic approaches to biodiversity protection and enhancement reflecting targets contained within regional and sub-regional BAPs and other plans and strategies. In this context, the introduction of Local Nature Partnerships announced in the Natural Environment White Paper, that will complement existing local partnerships which deal with matters such as provision of green infrastructure, will improve the chances of the delivery of the policy. Such partnerships will be able to work across administrative boundaries enable planning of networks at the scale that has the most impact. In consequence, revocation has been assessed as having the same positive benefits as retention.

1.8.1 Effects of Revocation

The Government's aim, as announced in the Natural Environment White Paper, is that by 2020 there will be an overall improvement in the status of wildlife. The planning system can make an important contribution to achieving these goals, although it has to be recognised that the most influence will come from land uses outside the control of the planning system, and in particular, agriculture, and will depend on the uptake and success of agri-environment schemes.

Key indicators for biodiversity are the number and extent of protected areas and their condition. In particular, the Natural Environment White Paper states that 90% of priority wildlife habitats should be in recovering or favourable condition by 2020. There will be more, bigger, better and less-fragmented areas for wildlife, including no net loss of priority habitat and an increase of at least 200,000 hectares in the overall extent of priority habitats. At least 50% of Sites of Special Scientific Interest (SSSI) will be in favourable condition, while maintaining at least 95% in favourable or recovering condition.

According to the baseline figures, as of May 2012, 95.5% of all SSSIs in the South West were currently meeting the Government's PSA target condition of 95% being in favourable or recovering condition

Revocation of the Regional Strategy could, in theory, remove or reduce any such remaining potential for biodiversity improvements set out in policies contained in RPG10. However, the NPPF together with legislation and wider national policies on biodiversity provides a strong framework for protecting the existing biodiversity resource. For example, given the continued application of the legal and policy protection given to European and Ramsar sites and to SSSIs and further application of agri-environment

schemes it is expected that revocation of the Plan would not change the positive direction of travel. Achievement of legally binding targets for water and air quality will also be significant contributory factors in improving the quality of areas important for wildlife, while enhanced provisions on aspects such as the delivery and protection of green infrastructure will play an important role in increasing the overall area with significant biodiversity value. Statutory and policy protection for AONBs and National Parks will continue to protect the biodiversity value with these areas, at least in so far as the planning system is concerned.

Despite these safeguards, it is far from certain that this would be the outcome and will depend on decisions taken by local authorities in consultation with their communities, and by businesses and other partners, on the future scale, nature and location of housing and other development in order to meet identified need. This is particularly the case with respect to non-designated sites and their associated biodiversity.

Removal of the target for the use of previously developed land (RPG10 Policy HO5) could have benefits for biodiversity where it reduces the pressure on local planning authorities to develop areas of brownfield land which have biodiversity interest. In its place, paragraph 111 of the NPPF encourages the effective use of land by re-using land that has been previously developed (i.e. brownfield land), provided that it is not of high environmental value. However, moving some development away from brownfield land may increase the pressure to locate development on non-designated areas of the countryside. The effects of this are uncertain in the medium to long term as they will depend on the quantum of development away from urban areas and on site specific circumstances, including the biodiversity value on and in the vicinity of the development. It should also be recognised that well planned development which optimises the opportunities for biodiversity - as envisaged in the NPPF - can result in net gains to biodiversity.

1.8.2 Effects of Partial Revocation

The effects of partial revocation concern either:

- Revoking all the quantified and spatially specific policies (for instance where a quantum of development, land for development or amounts of minerals to be extracted or waste disposal is allocated to a particular location in the region) and retaining for a transitional period the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period all the spatially specific policies where a quantum of development or land for development is allocated to a particular location in the region and revoking the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period policies, ambitions and/or priorities, the revocation of which may lead to likely significant negative environmental effects.

The likely significant effects on biodiversity associated with the retention and revocation of the quantitative/spatially specific policies are summarised in **Table 1.5** for Policy EN1. However, the effects associated with revocation are not considered to be negative or different from retention. The combination of legislative requirements for protecting biodiversity, the policy and guidance in the NPPF and the actions of other organisations (such as Natural England) as well the LPAs themselves creates a framework where the effects of revocation are considered to deliver similar positive benefits to biodiversity and nature conservation as retention.

The assessment has found that there are no policies in RPG10 where the act of revocation will cause a significant negative effect whilst retaining the same policy will maintain a significant environmental benefit.

1.8.1 Effects of Retention

Assessment of the effects of retention of the Regional Strategy are predicated to the assumption that in the absence of the legislation and regional architecture enabling the updating of RPG10 in particular, the policies contained therein will remain and become increasingly outdated and in some cases in conflict with the national policies in the NPPF. They will therefore play an increasingly smaller role in plan making and development control over time.

However, retention of policies within RPG10 and in particular EN1 and SS20 will have significant positive effects on biodiversity through the protection and enhancement of the region's environmental assets.

1.9 Mitigation Measures

Given that all likely significant effects identified would be positive, no mitigating measures are proposed for this topic.

2. Population

2.1 Introduction

In the absence of detailed SEA guidance on the content of the population topic, 'population' includes information on demographics and generic socio-economic issues. The overview of plans and programmes and baseline information contained in this section provides the context for the assessment of potential effects of the proposals on the plan to revoke on population and socio-economics. Information is presented for both national and regional levels.

There are links between the population topic and a number of other SEA topics, in particular the effects of population on human health, material assets, air quality and climate change.

2.2 Summary of Plans and Programmes

2.2.1 International

The United Nation's ***Aarhus Convention (2001)*** grants the public rights and imposes on Parties and public authority's obligations regarding access to information, public participation and access to justice. It contains three broad themes or 'pillars':

- access to information;
- public participation; and
- access to justice.

The ***SEA Directive*** creates the following requirements for public consultation;

- Authorities which, because of their environmental responsibilities, are likely to be concerned by the effects of implementing the plan or programme, must be consulted on the scope and level of detail of the information to be included in the Environmental Report. These authorities are designated in the SEA Regulations as the Consultation Bodies (Consultation Authorities in Scotland).
- The public and the Consultation Bodies must be consulted on the draft plan or programme and the Environmental Report, and must be given an early and effective opportunity within appropriate time frames to express their opinions.

- Other EU Member States must be consulted if the plan or programme is likely to have significant effects on the environment in their territories.

- The Consultation Bodies must also be consulted on screening determinations on whether SEA is needed for plans or programmes under Article 3(5), i.e. those which may be excluded if they are not likely to have significant environmental effects.

The ***European Employment Strategy*** seeks to engender full employment, quality of work and increased productivity as well as the promotion of inclusion by addressing disparities in access to labour markets. These overarching aims are further espoused in the ***Integrated Guideline for Growth and Jobs 2008-11*** and later documents relating policy objectives into broad actions for the member states (***A Shared Commitment for Employment***, 2009; and, ***Implementation of the Lisbon Strategy Structural Reforms in the context of the European Economic Recovery Plan***, 2009).

2.2.2 National

England

The ***Government's Housing White Paper 'Laying the Foundations'*** sets out the Government's policies to support the housing market, especially house building. The Government believes that a well functioning housing market is vital to competitiveness and attractiveness to business. Housing is also seen as crucial to social mobility, health and well being - with quality and choice having an impact on social mobility and wellbeing from an early age. The Government is putting in place new incentives for housing growth through the New Homes Bonus, Community Infrastructure Levy and proposals for local retention of business rates.

The ***Local Growth White Paper (October 2010)*** sets out the Government overarching goal is to promote strong, sustainable and balanced growth. It restates the Government's role in providing the framework for conditions for sustainable growth by:

- creating macroeconomic stability, so that interest rates stay low and businesses have the certainty they need to plan ahead;

- helping markets work more effectively, to encourage innovation and the efficient allocation of resources;

- ensuring that it is efficient and focused in its own activities, prioritising high-value spending and reducing tax and regulatory burdens; and

- ensuring that everyone in the UK has access to opportunities that enable them to fulfil their potential.

The White Paper focuses on the approach to local growth proposing measures to shift power away from central government to local communities, citizens and independent providers. It introduced Local Enterprise Partnerships (LEPs) to provide a vision and leadership for sustainable local economic growth. The number of LEPs has increased to 39 from the 24 originally announced. Across England the LEP's are at different stages of establishment and are subject to further development and consultation. LEPs will be expected to fund there own day to day running costs but may wish to submit bids to the Regional Growth Fund (RGF). The RGF is a discretionary £1.4bn Fund operating for three years between 2011 and 2014 to stimulate enterprise by providing support for projects and programmes with significant potential for creating long term private sector led economic growth and employment and, in particular, help those areas and communities that are currently dependent on the public sector make the transition to sustainable private sector-led growth and prosperity.

There are a number of policies set out with the ***National Planning Policy Framework (NPPF) (2012)*** that set out how local planning authorities should plan for the supply of housing. The new policies explain that to boost significantly the supply of housing, local planning authorities should:

- use their evidence base to ensure that their local plan meets the full, objectively assessed housing needs;
- identify and update annually a supply of specific deliverable sites sufficient to provide five years worth of housing;
- identify a supply of specific, developable sites or broad locations for growth, for years 6-10 and, where possible, for years 11-15;
- provide a housing trajectory and set out a housing implementation strategy for the full range of housing; and
- set out their own approach to housing density to reflect local circumstances.

The policy outlines measures that local planning authorities should take order to deliver a wide choice of high quality homes, widen opportunities for home ownership and create sustainable, inclusive and mixed communities. The policy states that Local planning authorities should identify and bring back into residential use empty housing and buildings in line with local housing and empty homes strategies.

The Government's ***Planning Policy for Traveller Sites (2012)*** should be read in conjunction with the National Planning Policy Framework. The policy replaces Circular 01/2006: Planning for Gypsy and Traveller Caravan Sites and Circular 04/2007: Planning for Travelling Showpeople. The overarching aim of the new policy is to ensure fair and equal treatment for travellers, in a way that facilitates the traditional and nomadic way of life of travellers while respecting the interests of the settled community.

2.2.3 South West Region

Local Enterprise Partnerships in the South West

There are six LEPs in the South West region namely the West of England, Gloucestershire, Swindon and Wiltshire, Dorset, Heart of the South West and Cornwall and the Isles of Scilly. These are described in more detail below.

West of England

The West of England LEP covers the areas of Bath and North East Somerset, City of Bristol, North Somerset and South Gloucestershire. The broad vision of the LEP for 2026 is that the West of England area will have:

- One of Europe's fastest growing and most prosperous sub regions which has closed the gap between disadvantaged and other communities – driven by major developments in employment and government backed infrastructure improvements in South Bristol and North Somerset;
- A buoyant economy competing internationally, based on investment by innovative, knowledge based businesses and a high level of graduate and vocational skills;
- A rising quality of life for all, achieved by the promotion of healthy lifestyles, access to better quality healthcare, an upturn in the supply of affordable housing of all types and the development of sustainable communities;
- Easier local, national and international travel, thanks to transport solutions that link communities to employment opportunities and local services, control and reduce congestion and improve strategic connections by road, rail and through Bristol Airport and seaport;
- Cultural attractions that are the envy of competitor city regions across Europe, making the West of England the place of choice for talented, creative workers and affluent visitors;
- Success secured in ways that are energy efficient, protect air quality, minimise and manage waste and protect and enhance the natural and built environment;
- Built upon the benefits of its distinctive mix of urban and rural areas;
- Real influence with regional and national government, by demonstrating vision and leadership and delivering these achievements.

Specific activities include:

- Developed a Planning toolkit with 4 local authorities to improve the way large scale and complex planning applications are managed. It promotes good practice in handling planning

applications and identifies a series of shared commitments between councils and developers for further improvement, and greater consistency.

- Bringing forward the Temple Quarter Enterprise Zone a 70ha area situated in central Bristol around the Temple Meads Railway Station. Focus on the digital and creative media sector - creating new businesses and attracting investment into Bristol from the UK and internationally.

Swindon and Wiltshire

This LEP encompasses the local authority areas of Swindon and Wiltshire. The LEP's vision is to use the area's unique pivotal location in Southern England in order to create wealth, jobs and new business opportunities within an outstanding landscape that provides an exceptional quality of life. The LEP's unique selling proposition is the economic potential of the military presence in the area and its ambition to be recognised as the national LEP network lead for military/civilian integration. Its key objectives are 2015 to see:

- 10,000 new private sector jobs created;
- Safeguard a further 8,000 jobs within the local business base;
- 85% area coverage by superfast broadband;
- Use new administrative powers to build a supportive economic environment;
- Regeneration in and improved connectivity between primary population centres;
- Identification, allocation and preparation of strategic employment land sites;
- Reduction of CO2 Emissions per capita;
- Resilient rural communities served by sustainable transport links – recognising that 66% of the LEP population is located within 5km of a railway station.

Gloucestershire

The Gloucestershire LEP comprises the local authority areas of Cheltenham, Cotswold, Forest of Dean, Gloucester, Stroud, and Tewkesbury. The LEP's Economic Vision for Gloucestershire 2012-2022 sets out its core aims under three main headings of promotion, skills and connection:

- Promotion - A quality of working life recognised as the best in Europe.
  - Attract and retain the next generation of talent and build on the expertise of current business professionals.
  - Attract and retain successful, growing businesses.

  - Sustainably grow key sectors.

- Skills - A highly employable and economically productive population.
  - A culture of enterprise in school, college and university leavers.
  - Businesses that know their future skills needs and invest in their people.
  - Integrated education and skills sector which delivers for the economy and business.
- Connection - An infrastructure that supports economic growth.
  - Integrated and improved transport infrastructure.
  - Broadband service and use that matches the best in the UK.
  - A planning system that delivers efficiently and consistently for business.

Specific activities include:

- Delivered an innovative business and schools programme to support future entrepreneurs. Project reached more than 200 secondary school pupils and next year it is hoped the project will be extended to reach 3500 pupils, including primary school pupils.
- Bringing forward a retail pathfinder- working with local authorities to identify issues and options in terms of addressing the retail needs of the partnership area.
- Brought together 11 banks to provide clear guidance for business and make access to finance clearer.

Dorset

This LEP covers the local authority areas of Bournemouth, Christchurch, East Dorset, North Dorset, Poole, Purbeck, West Dorset, and Weymouth and Portland. The objectives of the Dorset LEP are:

- To improve the performance of existing businesses within Dorset, and to encourage the growth of new ones, for example, through inward investment;
- To enhance the skills of the current and future workforce;
- To improve electronic and physical connectivity, particularly through high speed broadband coverage;
- To create the conditions for enterprise, with an initial focus on establishing an agreed framework for spatial planning.

Specific activities include:

- Received approx £9M for superfast broadband from BDUK, with all local authorities coming together in partnership area to commit match funding totalling £10M
- Held a series of food, drink and tourism roadshows during May 2012 to establish where the sectors are now, where they want to go to and what is needed to get there.

Heart of the South West

The LEP encompasses the local authority areas of East Devon, Exeter, Mendip, Mid Devon, North Devon, Plymouth, Sedgemoor, South Hams, South Somerset, Taunton Deane, Teignbridge, Torbay, Torridge, West Devon and West Somerset. The Heart of the South West LEP has four headline objectives:

- Drive, Productivity and Enterprise;
- Attract New Business and Investment;
- Maximise Employment Opportunities;
- Promote Infrastructure to Connect with Markets.

Specific activities include:

- Working with Broadband Delivery UK (part of DCMS) to provide access to standard broadband to businesses and households in their localities. Projects have already started and the end point should be around the end of 2013.
- Chosen by DEFRA to be one of five Rural Growth Network Pilot areas. The idea is to test different mechanisms by which Partnerships and local authority partners can support sustainable economic growth in rural areas. Includes preferential access to the micro-enterprise strand of the Rural Economy Grant (REG) which provides support to dynamic, growing rural enterprises which employ 10 people or less.

Cornwall and Isles of Scilly Local Enterprise Partnership

The Cornwall and Isles of Scilly LEP covers the administrative areas of Cornwall Council and the Council of the Isles of Scilly. The LEP aims to:

- Create more jobs, especially higher paid jobs;
- Improve skills amongst everyone in Cornwall and the Isles of Scilly to meet tomorrow's skills needs;
- Help businesses to grow;
- Create a strategic framework that maximises funding opportunities and support for businesses;

- Create an infrastructure in Cornwall that helps businesses to thrive;
- Create a 'can do' enterprise culture;
- Protect the value of our environment;
- Seize the opportunities presented by superfast broadband and the global marketplace; and
- Help overcome the barriers that hold back business growth.

Specific activities include:

- Developing a new local economic strategy- giving businesses and the voluntary sector a real say in its development through 'Tell Us'-series of road shows challenges businesses of all sizes to take the driving seat.
- Taking forward the Newquay Aerohub Enterprise Zone, a 55 ha area split between two sites:
  - Aerohub No1 and No2: focus on direct aerospace;
  - Aerohub Business Park: focus on businesses that need to be close to the airport for connectivity or the direct aerospace.

2.3 Overview of the Baseline

2.3.1 UK

National Demographics

In mid 2010 the resident population of the UK was 62,262,000[15] and 64.8% of the population was working age (aged 16 to 64) (65.8% males and 63.8% females). The working age population in 2010 was broken down as follows: [16]

- 77.0% economically active;
- 70.5% in employment; and
- 8.2% unemployed.

The breakdown of qualifications of the working age population in 2010 was as follows:

[15] Office for National Statistics 2010 mid-year population estimates
[16] NOMIS, Official Labour Market Statistics, Annual Population Survey, 2010, https://www.nomisweb.co.uk

- 31.2% had NVQ4 and above;
- 50.9% had NVQ3 and above;
- 67.2% had NVQ2 and above;
- 80.1% had NVQ1 and above;
- 8.4% had other qualifications; and
- 11.6% have no qualifications.

In England and Wales, between 2008/09 and 2009/10 estimates from the British Crime Survey (BCS) indicate vehicle-related thefts fell by 17%, burglary fell by 9% and violent crime fell by 1%. All BCS crime fell by 9%.

Table 2.1 Number of Crimes Recorded by the Police in England and Wales:[17]

	2008/09	2009/10	Change
	Number of offences (thousands)		%
Vandalism	2,700	2,408	-11
Burglary	725	659	-9
Vehicle-related theft	1,476	1,229	-17
Bicycle theft	527	480	-9
Other household theft	1,155	1,163	1
Household acquisitive crime	3,883	3,531	-9
All household crime	6,583	5,939	-10
Theft from the person	725	525	-28
Other theft of personal property	1,096	1,036	-5

[17] Home Office, British Crime Survey in England and Wales 2009/10, http://rds.homeoffice.gov.uk/rds/pdfs10/hosb1210.pdf

	2008/09	2009/10	Change
All violence	2,114	2,087	-1
Personal acquisitive crime	2,094	1,895	-9
All personal crime	3,936	3,648	-7
All BCS Crime	10,518	9,587	-9

In 2010/11, the UK had a total of 32,750 schools which were broken down as follows:

- 3,130 nursery (138,300 students);
- 21.244 primary (4,922,000 students);
- 4,121 secondary (3,888,700 students);
- 1,293 special (102,800 students); and
- 427 pupil referral units (12,500 students)[18] .

Total of 9,064,300 pupils at maintained schools and a further 589,800 at non-maintained schools)[18].

National Socio-Economic

In 2010 UK per capita Gross Value Added (GVA) was £20,476[19]. The 2010 headline estimates show that both total GVA and GVA per head at current basic prices have increased in all UK regions. In 2010, London's gross value added (GVA) per head of population was 71.1% above the average for the United Kingdom (UK), while that of Wales was 26.0% below the average.

In 2009 the median full-time gross hourly pay in UK was £12.43 (males' median being £13.09 and the female median being £11.42). This compares to £11.98 in 2008[20]. In the three months to July 2010 pay growth (including bonuses) rose by 1.2% in the private sector over the previous year compared with 2.7% for the public sector. Excluding bonus payments, growth in the private sector over the year was

[18] DCSF, Education and Training Statistics for the United Kingdom: 2011, http://www.education.gov.uk/rsgateway/DB/VOL/v001045/v02-2011c1v2.xls
[19] Regional, sub-regional and local gross value added 2010, http://www.statistics.gov.uk/pdfdir/gva1210.pdf
[20] NOMIS, Official Labour Market Statistics, Annual survey of hours and earnings - resident analysis https://www.nomisweb.co.uk/output/dn87000/{AFB7B1A5-142C-4D4F-BDE2-467C1389CB90}/nomis_2009_08_20_160703.xls

1.3% compared with 2.8% for the public sector[21].

In the period February - April 2012 the UK had a total of 29,280,000[22] people in employment aged 16 and over, up 166,000 on the quarter. The number of people employed in the private sector increased by 205,000 to reach 23.38 million but the number of people employed in the public sector fell by 39,000 to reach 5.90 million.

In February 2012 - April 2012, the UK had an unemployment rate of 8.2% (all people of working age). This is a reduction of 0.2% on the previous quarter and compares to the previous year when the UK had an unemployment rate of 5%[23].

The recent UK recession has caused a downturn in many sectors and markets of the UK economy. UK gross domestic product (GDP) in volume terms decreased by 0.3%in the first quarter of 2012, revised from a previously estimated decline of 0.2%. Production industries fell by 0.4%, within which manufacturing output was flat whilst the output the service industries rose slightly by 0.1%[24] .

2.3.2 England

Demographic

In mid-2010 England had a resident population of 52,234,000 and 64.8% of the population is of working age (aged 16 to 64) split by gender, 65.8% males and 63.8% females.

In 2010 the working age population breakdown was as follows:

- 77.2% were economically active;
- 70.5% of working age population were in employment; and
- 8.3% of working age population were unemployed[25].

The working age population in 2010 had the following qualification breakdown:

- 31.1% have NVQ4 and above;

[21] ONS Labour Market Statistics, June 2012, http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/june-2012/index.html
[22] ONS Labour Market Statistics, June 2012, http://www.ons.gov.uk/ons/rel/lms/labour-market-statistics/june-2012/index.html
[23] NOMIS, Official Labour Market Statistics, National Indicators, June-August 2009, https://www.nomisweb.co.uk/articles/news/files/LFS%20headline%20indicators.xls
[24] ONS, UK Snapshot, http://www.ons.gov.uk/ons/dcp171778_264972.pdf
[25] ONS Economic activity time series https://www.nomisweb.co.uk/reports/lmp/gor/2092957699/subreports/nrhi_time_series/report.aspx?

- 50.7% have NVQ3 and above;
- 67.0% have NVQ2 and above;
- 80.3% have NVQ1 and above;
- 8.6% have other qualifications; and
- 11.1% have no qualifications[26].

In 2008/09, England had 24,737 schools:

- 438 nursery (37,200 students);
- 17,064 primary (4,074,900 students);
- 3,361 secondary (3,271,100 students);
- 1,058 special (85,500 students); and
- 458 pupil referral units (15,200 students)[27].

Socio-Economic

In 2010 England's per capita Gross Value Added (GVA) was 20,974.[28]

In 2011 the median full-time gross hourly pay in England was £12.85 (males' median being £13.44 and the female median being £12.00). This compares to £12.75 in 2010 and represents growth of 0.78% in nominal hourly total full time pay over the previous year[29].

In 2010, England had a total of 26,295,000 jobs[30].

In Feb 2008 - Jan 2010, England had an unemployment rate of 7.8% (all people of working age). This compares to the previous year when it had an unemployment rate of 6%[31].

[26] ONS https://www.nomisweb.co.uk/reports/lmp/gor/2092957699/report.aspx
[27] DCSF, Education and Training Statistics for the United Kingdom: 2009, http://www.dcsf.gov.uk/rsgateway/DB/VOL/v000891/Chapter1.xls
[28] Regional, sub-regional and local gross value added 2010, http://www.ons.gov.uk/ons/rel/regional-accounts/regional-gross-value-added--income-approach-/december-2011/stb-regional-gva-dec-2011.html
[29] ONS: Earning by workplace https://www.nomisweb.co.uk/reports/lmp/gor/2092957699/subreports/gor_ashew_time_series/report.aspx
[30] ONS https://www.nomisweb.co.uk/reports/lmp/gor/2013265930/report.aspx
[31] ONS https://www.nomisweb.co.uk/reports/lmp/gor/2092957699/subreports/nrhi_time_series/report.aspx

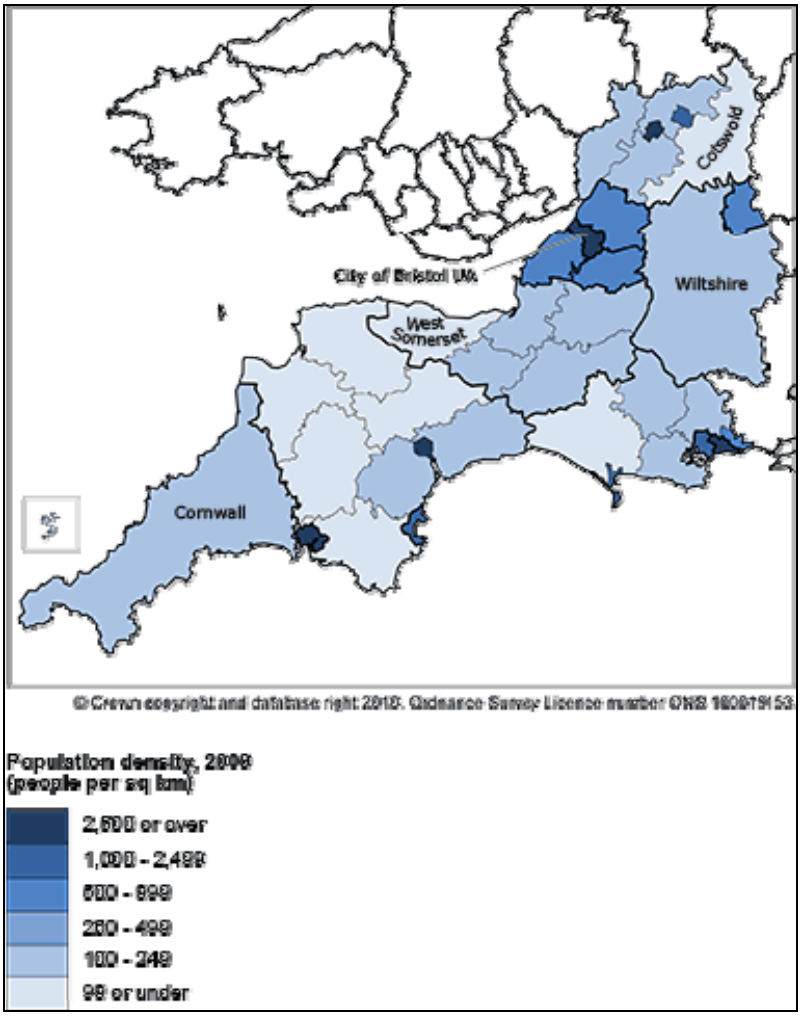
2.3.3 South West Region

Population

According to mid-2010 estimates, the resident population of the South West region was 5,273,700, an increase of 7% since 2000. This compares to an overall increase of 5.6% for England over the same period. Based on 2009 data, the South West has an average population density of 220 residents per sq km which is the lowest for any English region. Density is highest in the City of Bristol area, at 4,000 people per sq km, and lowest in the West Devon and West Somerset local authority districts, each with fewer than 50 people per sq km. **Figure 2.1** illustrates the population density across the region, with notable contrasts between the densely populated cities towards the west of the region and the sparsely populated rural areas to the south and east. On the basis of the rural-urban classifications developed by the Office for National Statistics, approximately 33% of the population lives in areas classified as rural.[32]

[32] Office for National Statistics (June 2011), *Regional Trends No. 43*, http://www.ons.gov.uk/ons/rel/regional-trends/regional-trends/no--43--2011-edition/index.html

Figure 2.1 Population Density in the South West



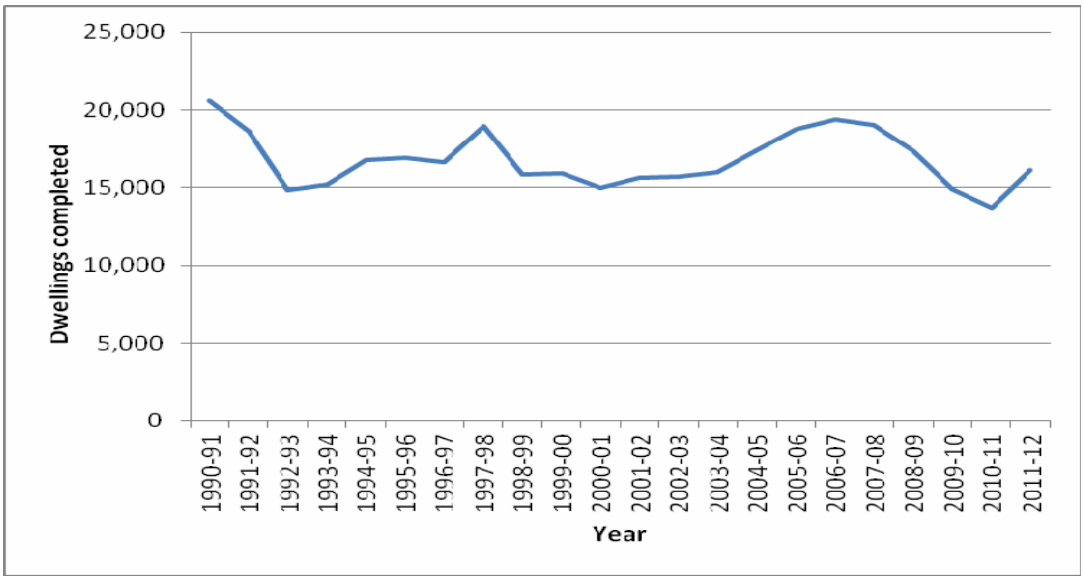
Source: ONS (2011) Regional Profiles: South West, available from http://www.ons.gov.uk/ons/rel/regional-trends/regional-trends/no--43--2011-edition/regional-profiles---summary---south-west.html [Accessed June 2012]

The South West has a greater proportion of inhabitants of aged 65 and over than any other English region (19.6% of the total South West population). There are proportionately fewer people aged under 16 than the national average (17.6% compared to 18.7%) whilst the percentage of people aged between 16 and 64 is also lower than the England average (62.8% compared to 64.8%). At a sub-regional level, the age structure of the population is more varied. In Bristol, Exeter, Swindon and Plymouth for example, the proportion of the population that is of working age is much greater than it is in the South West as a whole.

Housing

There were 2,403,000 dwelling in the South West in 2011, an increase of 11.2% (242,000 dwellings) since 2000 (see **Figure 2.2**). In the period 2011/12, provisional figures indicate that a total of 16,100 dwellings were completed which represents a significant increase on the volume of completions for 2010/11 (13,680 dwellings) and 2009/10 (14,930 dwellings) although the rate of completions remains below the requirements set out in Policy HO1 of RPG10 (20,200 dwellings per annum for the period 1996-2016) and the Draft Revised Regional Spatial Strategy for the South West Incorporating the Secretary of State's Proposed Changes (29,623 dwellings per annum over the plan period).

Figure 2.2 Permanent dwellings completed



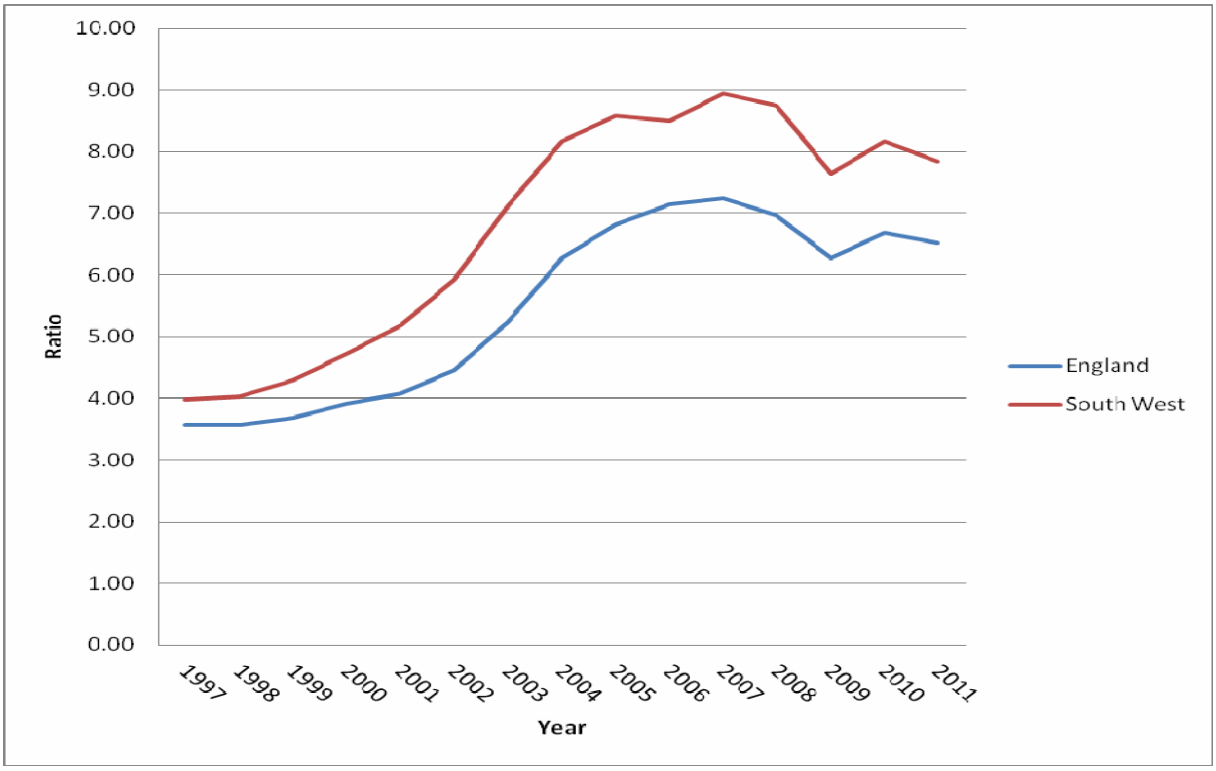
Source: DCLG (2011) Dwelling stock: by tenure and region, from 1991, available from **http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/stockincludingvacants/livetables/** [Accessed June 2012]

A total of 7,100 affordable dwellings were provided in 2010/11 of which approximately 95% were new build. This represents an increase of 7.4% (490 dwellings) when compared to total affordable housing provision in 2009/10 and is the largest number of affordable homes provided over the last ten years[33].

[33] DCLG (2012) Additional affordable homes, available from http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/affordablehousingsupply/livetables/ [Accessed June 2012]

In the South West, house prices remain high in relation to incomes and according to data from DCLG, the average (mean) house price in the South West in 2011 (Quarter 3) was £239,029. The lower quartile house price to lower quartile income ratio, used to measure affordability, remains particularly high in the South West at 7.84 (based on provisional data). This has increased from 3.98 in 1997 and is greater than the England average (6.53), yet remains below the peak of 8.94 in 2007 (see **Figure 2.3**).

Figure 2.3 Ratio of Lower Quartile House Price to Lower Quartile Earnings, from 1997-2011



Source: DCLG (2012) Ratio of lower quartile house price to lower quartile earnings by district, from 1997-2011, available from http://www.communities.gov.uk/housing/housingresearch/housingstatistics/housingstatisticsby/housingmarket/livetables/ [Accessed June 2012]

This ratio, which better reflects the first time buyers market, varies across the region; the highest (least affordable houses) in the South West are in Dorset, the lowest (most affordable houses) are in Plymouth[34].

[34] South West Observatory (2012) The Changing State of the South West 2012, available from http://www.swo.org.uk/sotsw2012/housing/ [Accessed June 2012]

Affordability problems throughout the region may result in increases in homelessness figures in the future. The number of households accepted by local authorities in the region as homeless fell from a peak of 12,280 in 2002 to 3010 in 2009, similar to trends experienced by other regions. However, provisional data for 2010 and 2011 indicates that this figure may have increased to 3,630, which again is similar to the national trend.

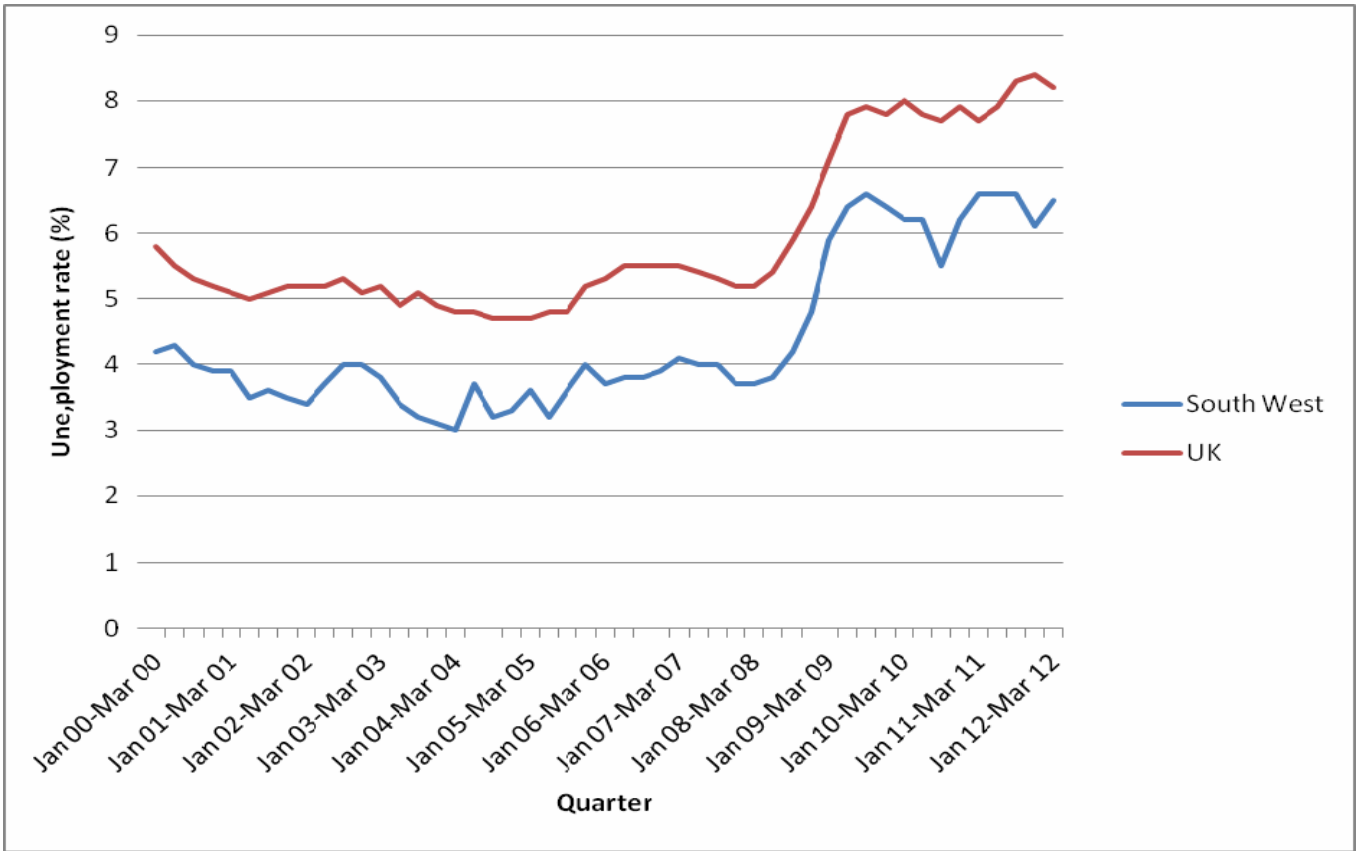
Economy

Similar to other regions, the South West has suffered in the recession since 2008. According to ONS data, the working age population (3,313,300 residents) had the following economic activity in January 2012 to March 2012:

- 78.3% were economically active;
- 73.1% were in employment;
- 6.5% were unemployed;
- 21.7% were economically inactive.

The region's unemployment rate has broadly followed wider UK trends, increasing year-on-year since 2008 (when the region's unemployment rate stood at 3.7%), although it has historically been lower than the UK average (see **Figure 2.4**).

Figure 2.4 South West Unemployment Rate 2000 - 2012



Source: Nomis (2012) Labour Market Profile: South West, available from http://www.nomisweb.co.uk/reports/lmp/gor/2013265929/report.aspx?#tabnrhi [Accessed June 2012]

The region has a total of 2,706,000 jobs (based on 2010 data) which equates to a job density of 0.82. This is greater than the UK average of 0.77 and has remained fairly static since 2000. **Table 2.2** shows workforce jobs by sector and highlights that the highest proportion of jobs are within the 'wholesale and retail trade; repair of vehicles' (15.4%) and 'human health and social work activities' (12.9%) sectors. The proportion of jobs in different work sectors in the region is similar to the proportions at the national level for most of the sectors, although the proportion in agriculture, forestry and fishing is higher (at 2.4%) than the UK average (1.3%).

Table 2.2 Workforce Jobs by Sector

Sector	South West Nos.	South West (%)	UK Nos.	UK (%)
A : Agriculture, forestry and fishing	63,000	2.4	420,000	1.3
B : Mining and quarrying	4,000	0.1	62,000	0.2
C : Manufacturing	228,000	8.5	2,514,000	8.0
D : Electricity, gas, steam and air conditioning	10,000	0.4	135,000	0.4
E : Water supply; sewerage, waste management	18,000	0.7	192,000	0.6
F : Construction	181,000	6.8	2,055,000	6.5
G : Wholesale and retail trade; repair of vehicles	411,000	15.4	4,778,000	15.1
H : Transportation and storage	112,000	4.2	1,483,000	4.7
I : Accommodation and food service activities	163,000	6.1	2,047,000	6.5
J : Information and communication	93,000	3.5	1,235,000	3.9
K : Financial and insurance activities	84,000	3.1	1,111,000	3.5
L : Real estate activities	38,000	1.4	422,000	1.3
M : Professional, scientific and technical activities	210,000	7.9	2,468,000	7.8
N : Administrative and support service activities	180,000	6.7	2,492,000	7.9
O : Public administration and defence	152,000	5.7	1,618,000	5.1
P : Education	224,000	8.4	2,698,000	8.6
Q : Human health and social work activities	344,000	12.9	4,022,000	12.8
R : Arts, entertainment and recreation	73,000	2.7	874,000	2.8
S : Other service activities	86,000	3.2	914,000	2.9

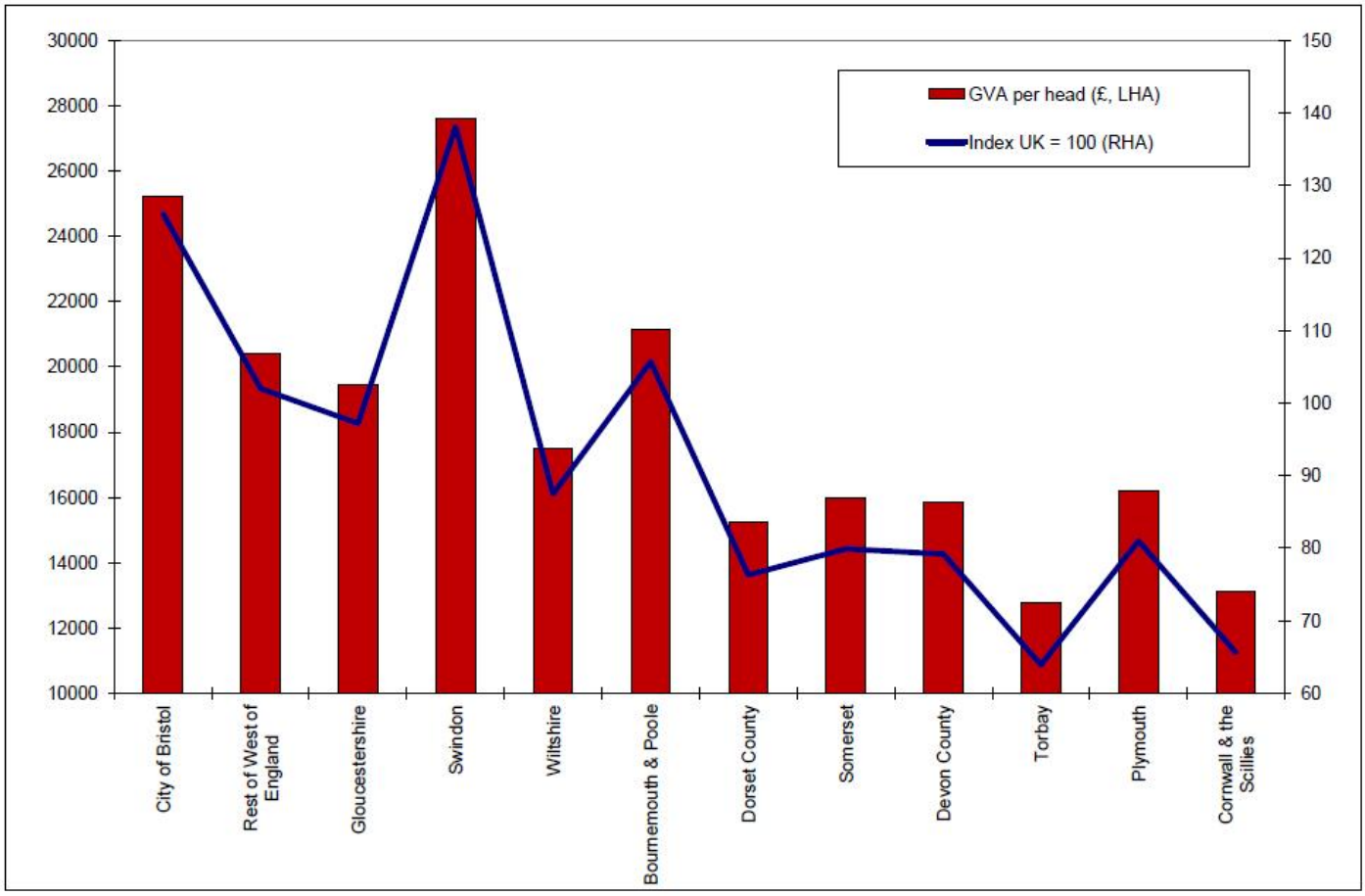
Source: NOMIS (2012) Labour Market Profiles, available from https://www.nomisweb.co.uk/reports/lmp/la/contents.aspx [Accessed June 2012].

In 2011, the average full-time gross hourly pay (workplace-based) in region was £11.63 (compared to a national average of £12.71). This compares to £11.50 in 2010 for the region (and a national average of £12.57).

In 2010, per capita GVA in the South West region was £18,669, an increase of 2.7% on 2009. The per-head GVA index was 91.2, compared to the UK baseline of 100 with the South West ranked fourth of England's nine regions. At a sub-regional level, 2009 data highlights large spatial variation between the

northern urban areas and the rest of the region with Swindon and Bristol generating the greatest GVA per head and Cornwall/the Isles of Scilly and Torbay the least (see **Figure 2.5**).

Figure 2.5 Relative GVA per head index by Local Area (2009, £ and index versus SW = 100)



Source: South West Observatory (2012) The Changing State of the South West 2012, available from http://www.swo.org.uk/sotsw2012/ [Accessed June 2012]

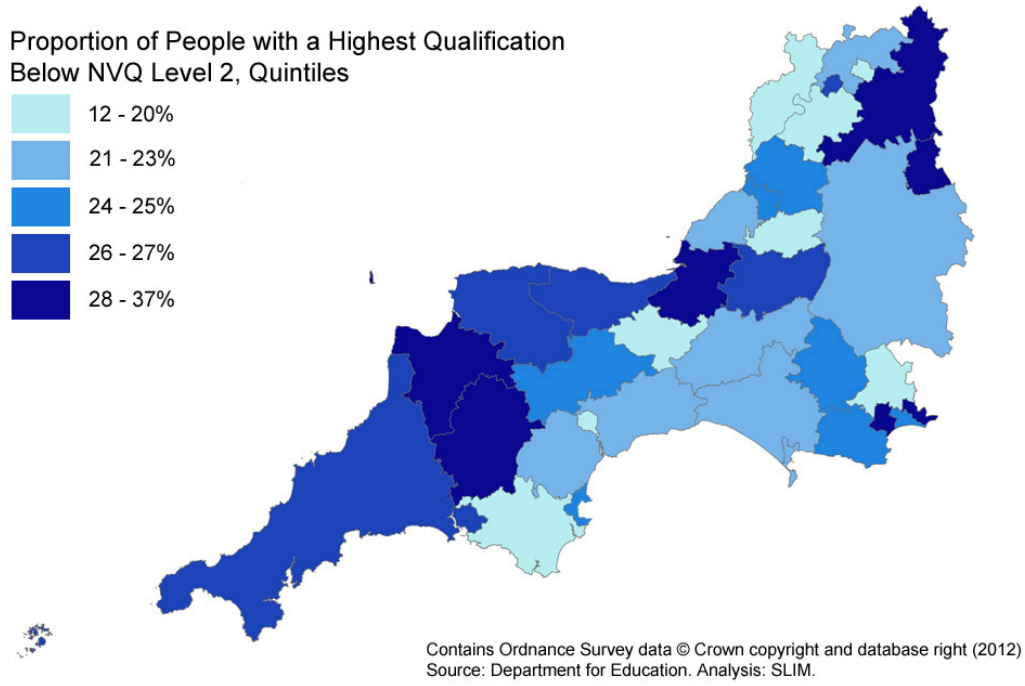
The overall level of education and skills in the workforce can have a critical impact on the output and productivity levels of an economy. Overall, qualification levels within the South West are greater than for the UK as a whole and in 2010:

- 31.5% had NVQ4 and above (UK= 31.2%);
- 55.3% had NVQ3 and above (UK= 50.9%);
- 71.0% had NVQ2 and above (UK= 67.2%);

- 84.5% had NVQ1 and above (UK= 80.1%);
- 7.2% had other qualifications (UK= 8.4%); and
- 8.4% had no qualifications (UK= 11.6%).

However, whilst the region's educational attainment is better than for the UK as a whole, a substantial minority (24%) either do not have any qualifications, or hold qualifications below Level 2. In addition, the profile of those residents with the highest qualifications varies considerably across local authority areas, with residents of Torridge (36.5%) and Sedgemoor (31.5%) more than twice as likely as those in the South Hams (12%) to be less well qualified (see **Figure 2.6**).

Figure 2.6 Proportion of People with a Highest Qualification Below NVQ Level 2



Source: South West Observatory (2012) The Changing State of the South West 2012, available from http://www.swo.org.uk/sotsw2012/housing/ [Accessed June 2012]

Social Capital and Access to Services

Transport

The South West's main airports are at Bristol, Exeter, Bournemouth, and Newquay (Plymouth Airport closed in December 2011); the region is served by three mainline train operators, Cross Country, First Great Western and South West Trains; while the main motorway and trunk road access to the South West are provided by the M4, M5, A303 and A31.

The South West region is one of the most travel intensive in the UK with an average person travelling 7,642 miles in 2009/10. This is significantly higher than the English average of 6,697 miles and reflects the relatively rural nature of much of the region. Allied to this is increasing car use, with non-car travel being broadly static or declining. Only 18% of South West households have no car or van and over 70% of trips in the region are made as either a driver, or a passenger, of a private vehicle. In this context, the volume of road traffic on major roads is ranked fourth highest out of the nine English regions and in 2010 stood at 19 billion vehicles, although traffic growth has declined slightly since 2008[35]. Public transport accounts for 5.6% of all trips in the South West and, together with the East Midlands, is amongst the lowest rate of usage of all nine English regions. Walks of over 50 yards make up 23% of the trips in the South West however, they account for only 2% of the distance travelled[36].

At the sub-regional level, Bristol, as the most populous city in the region, has the highest volumes of transport use in the South West across a number of transport modes. The city also has some of the most congested roads outside London with far lower average road speed than the South West regional average. Conversely, Bristol has comparatively low bus usage with 21.1m passenger journeys in 2010/11. Devon has the highest number of bus passenger journeys for a local authority in South West England, at 27.1m.

Access to Services

Table 2.3 summarises the accessibility to key services of urban and rural areas by region and serves to highlight that accessibility to a range of services in the region's rural area is relatively high compared to other English regions. Conversely, accessibility in urban areas is lower across all key service types.

[35] DfT (2012) Motor vehicle traffic (vehicle miles) by road class and region and country in Great Britain, annual 2010, available from http://www.dft.gov.uk/statistics/tables/tra0103/ [Accessed June 2012]

[36] DfT National Travel Survey reported in South West Observatory (2012) The Changing State of the South West, available from http://www.swo.org.uk/sotsw2012/, [Accessed June 2012]

Table 2.3 Accessibility in Rural and Urban Areas (May 2010) – the percentage of residential delivery points within a specified distance (2-4km) of various services

Region	Banks & Building Societies (4km)		GP surgeries (4km)		Post Offices (2km)		Primary Schools (2km)		Secondary Schools (4km)	
	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural	Urban
East Midlands	14.1	69.7	23.4	71.0	22.3	68.8	25.0	70.6	14.8	69.8
East of England	13.5	67.8	23.4	69.3	22.8	66.2	24.8	68.9	13.8	68.2
London	0.0	99.8	0.1	99.9	0.1	99.4	0.1	99.8	0.0	99.8
North East	12.5	78.9	17.3	80.6	16.6	77.9	16.9	80.2	12.1	79.4
North West	7.2	87.6	9.3	88.4	9.0	86.7	10.0	88.2	6.8	87.9
South East	10.9	77.2	17.5	78.5	15.7	75.3	17.1	77.3	8.6	75.4
South West	16.9	65.2	25.4	66.2	25.5	63.5	28.8	65.4	14.5	65.1
West Midlands	6.3	83.1	10.8	84.6	10.7	82.9	11.7	84.2	7.1	83.9
Yorkshire & the Humber	10.7	79.3	16.3	80.4	15.9	79.0	17.1	80.1	10.5	79.1

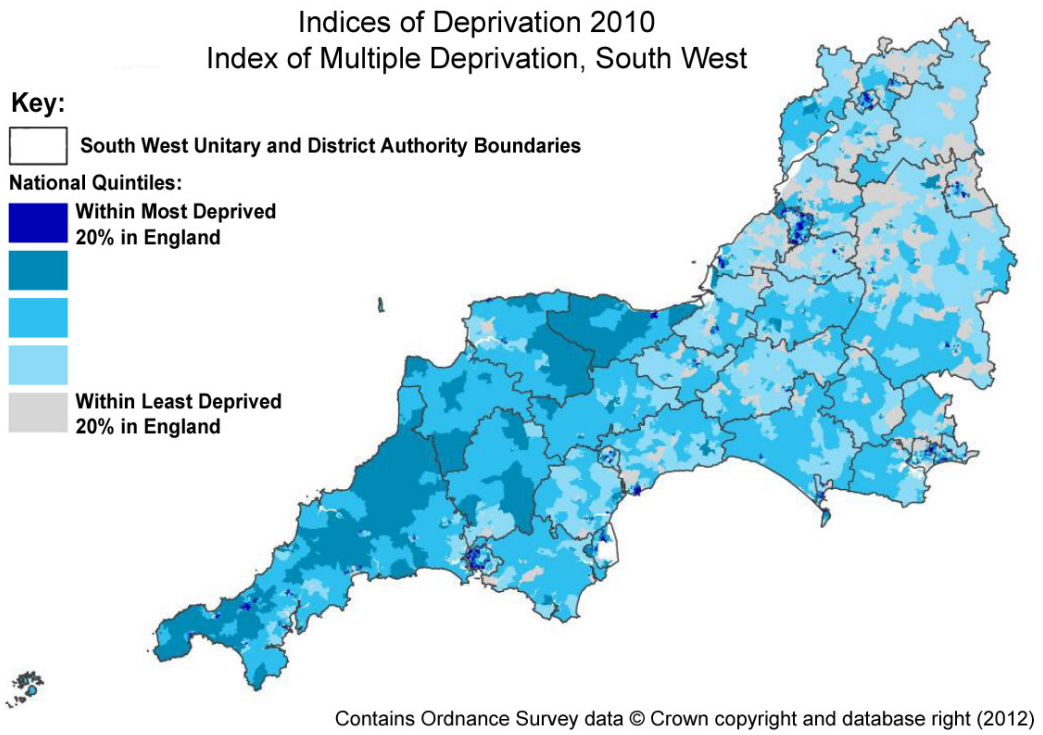
Source: Rural Services Data Series: Availability of Services by Region, 2010

Notwithstanding the relative accessibility of rural areas in the South West, the rural nature of the region means that a large proportion of people have some difficulty in accessing services at all, particular as a result of the decline in rural service provision. According to the RPG10 AMR (2009), in 2007-8, 27% of people in the South West found it fairly or very difficult to access a doctor or local hospital and 12% had difficulty accessing a corner shop or supermarket. The proportion of people having difficulty getting to a Post Office has declined slightly from 11% in 2004-5 to 8% in 2007-8, despite widely publicised Post Office closures in rural areas.

Deprivation

The South West has relatively low levels of deprivation although this overall picture masks severe pockets of deprivation in some of the more isolated rural areas of the region and urban centres. The 2010 Indices of Multiple Deprivation (see **Figure 2.7**) highlights that Torbay, Bristol and Plymouth have the greatest proportions of their population living in deprivation. In those areas, around 1 in 10 people live within the 10% most deprived areas nationally. Similar to national trends, increases in relative deprivation were observed for some coastal areas including in West Somerset, and Weymouth and Portland.

Figure 2.7 South West Index of Multiple Deprivation



Source: South West Observatory (2012) The Changing State of the South West 2012, available from http://www.swo.org.uk/sotsw2012/ [Accessed June 2012]

Crime

In 2010/11 the total recorded crime rate in the South West was 62.3 offences per 1,000 population, compared to the England rate of 75.1 and the England and Wales rate of 75.7. This was the lowest rate for any region, just below the East of England. In 2010/11 there were 325,651 crimes recorded by police forces in the South West, a decrease of 5% from 2009/10. Crime rates decreased by 4% for England and Wales over the last year.

There are notable differences in crime rates between urban and rural areas. About 39% of the South West's population live in local authorities classified as "predominantly urban", according to Defra, which is where 54% of all recorded crime in 2010/11 occurred. The rate of recorded crime in "predominantly urban" areas in 2010/11 was 84 per 1,000 population, but 45 per 1,000 population in "predominantly rural" areas.

For all district and unitary authorities in the South West, the highest rates of recorded crime were in Bristol (112 offences per 1,000 population), Bournemouth (109 offences per 1,000 population) and Gloucester (97 offences per 1,000 population)[37].

2.4 Environmental Characteristics of those Areas most likely to be Significantly Affected

2.4.1 National

Output in the UK economy has been largely flat for a year and half and was estimated to have contracted slightly in the past two quarters. There are weaknesses within domestic demand. Consumption fell, as the squeeze on real incomes continued and households saved more. And business investment remained significantly below its pre-crisis level, held back by weak demand, heightened uncertainty and tight credit conditions. Growth in the rest of the economy was also estimated to be weak, with manufacturing and services output both broadly flat. But business surveys, labour market developments and Bank of England reports all point to somewhat stronger activity in the first quarter, suggesting that the underlying picture is less weak.

Unemployment rates have been on a rising trend although in May 2012, this trend was abated slightly. Disadvantage continues to exist in communities, both in remote areas and inner cities.

2.4.2 South West Region

The key issues for the region are identified as:

- The region has an ageing population which may place pressure on services and facilities and reduce accessibility, particularly for those in rural areas.
- The rate of housing completions is currently below targets set out in the draft RSS.
- Affordability is a significant issue which may prevent first time buyers starting on the property ladder and lead to increased homelessness.
- The South West has suffered in the recession since 2008 with unemployment increasing year-on-year.

[37] Home Office Reported Crime Statistics reported in South West Observatory (2012) The Changing State of the South West 2012, available from http://www.swo.org.uk/sotsw2012/ [Accessed June 2012]

- There are large intra-regional disparities in respect of economic performance between the northern urban areas and the rest of the region.
- Pockets of severe deprivation exist within the region.
- The South West region is one of the most travel intensive regions in the UK. With the volume of road traffic on major roads high and public transport usage low, there is a need to encourage alternatives to car travel.
- There is a need to further consider the inter-relationship between housing and employment growth and the timing and delivery of transport measures/investment.
- The consequences of the recession, the difficulties in securing developer contributions and the anticipated funding reductions anticipated from review of public expenditure may pose risks to the progress of major schemes across the region.

2.5 Likely Evolution of the Baseline

2.5.1 National

Demographic

The current UK population is generally increasing, and projected to reach 73.2 million by 2035 [38].

The age structure of the UK population is moving towards an ageing population: those of pensionable age are projected to increase by 28% from 2010 to 2035 (note that the pensionable age is to change over this period). Those aged between 15-64 years are projected to decrease from 62.1% to 60.5% of the population, whilst those under 16 are projected to decrease from 18.7% to 17.9% of the population by 2033[38].

There are no formal targets for population growth in the UK (other than the recent intention to introduce non-EU immigration caps).

Socio-Economic

There are current uncertainties over market conditions and the range of economic forecasts available

[38] ONS, National Population Projections 2008-based, http://www.ons.gov.uk/ons/rel/npp/national-population-projections/2010-based-projections/sum-2010-based-national-population-projections.html

indicate a number of future scenarios. The Bank of England recently concluded that "*underlying growth is likely to remain subdued in the near term before a gentle increase in households' real incomes and consumption helps the recovery to gain traction. … The possibility that the substantial challenges within the euro area will lead to significant economic and financial disruption continues to pose the greatest threat to the UK recovery*".[39]

2.5.2 England

Demographic

Between 2008 and 2033, the population of England is projected to increase from 51.46 million to 60.715 million, an increase of 17.9%. The number of children aged under 16 is projected to increase by 12.8% from 9.669 million in 2008 to 10.916 million by 2033; the number of people of working age is projected to increase by 7.7% from 33.503 million in 2008 to 36.101 million; the number of people of pensionable age is projected to rise by 65.2% from 8.289 million in 2008 to 13.697 million.[40]

Socio-Economic

No GDP values for England were available but trends will closely match that of the UK as a whole.

2.5.3 South West region

Demographic

Between 2010 and 2020, the population of the South West is expected to grow by 6.1%, or 322,000 people, reaching a total of just over 5.5 million by 2020. This regional projection is below the projected growth rate for England as a whole over the same period (8.4%). However, this continuing growth is likely to maintain the pressure on the region's environmental and landscape assets as a result of the need to meet the region's housing and other land use requirements.

Table 2.4 Population change by age group, 2010 to 2020

[39] Bank of England, Overview of the Inflation Report May 2012 http://www.bankofengland.co.uk/publications/Pages/inflationreport/infrep.aspx
[40] General Register Office for Scotland population projections, http://www.scotpho.org.uk/home/Populationdynamics/Population/DataPagesofPopulation/Population_scotprojections.asp

	Population (in thousands)		Percentage population change by age group			
	mid-2010	mid-2020	All ages	0-15	16-64	65 and over
South West	5,252	5,574	6.1	8.7	-0.4	24.5
England	52,213	56,607	8.4	12.7	3.5	23

Source: Office for National Statistics, 2010 based sub-national population projections for England, http://www.ons.gov.uk/ons/dcp171778_259219.pdf [Accessed June 2012]

Population growth is expected to be accompanied by a changing age-structure of the inhabitants in the region. The 65 or over age group is projected to grow most in size, by 24.5% over the 10 years to 2020, compared to a 23% increase across England as a whole. In contrast, the region's 0-15 and 16-64 age groups are expected to grow by about 4% less than for England as a whole, with the 16-64 working age group actually declining (by 0.4%) over this period.

The continuing growth of the older age groups in the South West contributes towards a much lower natural growth rate (of 1.7%) in the region, compared with the much higher natural change of 4.8% in England as a whole. Most of the South West's growth over the next 10 years is expected to arise from net migration into the region (5.1% growth) from other parts of England.

Table 2.5 Percentage population growth between mid-2010 and mid-2020

	Total	Due to:		
		Natural change	Internal (within England) migration	International migration
South West	6.1	1.7	5.1	-0.7
England	8.4	4.8	0.0	3.5

Source: Office for National Statistics, 2010 based sub-national population projections for England, http://www.ons.gov.uk/ons/dcp171778_259219.pdf [Accessed June 2012]

There will be significant local variation in the rate of population growth amongst the various local authority areas within the region. None of the local authorities in the South West are within the top group

of ten English local authority areas with the highest projected percentage population growth between 2010 and 2020, but North Dorset has a projected decline (of -0.9%) in population, whilst Weymouth and Portland has only an expected 0.3% growth and Exeter a 0.9% growth in population. All three of these local authorities are within the bottom group of ten English local authority areas with the lowest projected percentage population growth between 2010 and 2020.[41] Uneven population growth is likely to mean that environmental pressures are felt differently across different parts of the region.

Socio-Economic

The demographic pressures will give rise to a considerable need for additional housing within the South West. In 2008, there were 2.24 million households in the region. Between 2008 and 2023, the South West is expected to have to accommodate an additional 419,000 households (just under 28,000 households per annum on average), which would result in a total of 2.66 million households in the region by 2023.[42]

2.6 Assessing Significance

Table 2.6 sets out guidance utilised during the assessment to help determine the relative significance of potential effects on the population objective. It should not be viewed as definitive or prescriptive; merely illustrative of the factors that were considered as part of the assessment process.

Table 2.6 Approach to Determining the Significance of Effects on Population

Effect	*Description*	*Illustrative Guidance*

[41] Source: Office for National Statistics, 2010 based sub-national population projections for England, http://www.ons.gov.uk/ons/dcp171778_259219.pdf

[42] Department for Communities and Local Government, Table 403: household projections by region, http://www.communities.gov.uk/documents/housing/xls/140945.xls

Effect	Description	Illustrative Guidance
++	Significant positive	• Alternative will provide a significant increase to housing supply above the current completion rate in the region, providing a wide choice of high quality homes for communities. • Alternative will provide a significant opportunity to create sustainable, inclusive and mixed communities. • Alternative will generate significant employment opportunities per annum, a large proportion of which will benefit local communities. • Alternative will facilitate significant long term investment in key regional sectors, specific localities or Nationally Significant Infrastructure Projects (NSIPs)
+	Positive	• Alternative will lead to an increase to housing supply above the current completion rate in the region, providing a wide choice of high quality homes for communities. • Alternative will provide opportunities to create sustainable, inclusive and mixed communities. • Alternative will generate employment opportunities, some of which will benefit communities within the region. • Alternative will facilitate long term investment in key regional sectors and specific localities.
0	No (neutral effects)	• Alternative will not affect the current rate of housing supply within the region. • Alternative will not affect the provision of opportunities to create sustainable, inclusive and mixed communities. • Alternative will not affect the creation of employment opportunities within the region. • Alternative will not affect long term investment in key regional sectors and specific localities.
-	Negative	• Alternative will lead to a decrease in housing supply below the current completion rate in the region, affecting the choice of homes for communities. • Alternative will reduce opportunities to create sustainable, inclusive and mixed communities. • Alternative will lead to a minor increase in unemployment. • Alternative will reduce the resilience and diversity of the regional and local economy. • Alternative will reduce the long term investment in key regional sectors and specific localities.
--	Significant negative	• Alternative will lead to a significant decrease in housing supply below the current completion rate in the region, affecting the choice of homes for communities. • Alternative will significantly reduce opportunities to create sustainable, inclusive and mixed communities. • Alternative will lead to a significant sustained increase in regional unemployment and worklessness. • Alternative will significantly reduce the resilience and diversity of the regional and local economy • Alternative will significantly reduce the long term investment in key regional sectors and specific localities.
?	Uncertain	• From the level of information available the impact that the alternative would have on this objective is uncertain.

2.7 Assessment of Significant Effects of Retention, Revocation and Partial Revocation

Table 2.7 summarises the significant effects identified in the detailed assessment of RPG10 policies against the population topic.

Table 2.7 Significant Effects against the Population Topic

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
SS1 Retention	++	++	++	This policy sets out the overarching regional spatial strategy underpinning RPG10. It identifies the broad priorities across four spatially based sub-regions (Northern, South East, Central and Western) with the aim of supporting sustainable growth. In particular, the strategy set out in Policy SS1 is expected to help strengthen the overall prosperity of the region by supporting the realisation of the Northern sub-region's potential (which is recognised as being the economic hub for the South West) and addressing intra-regional inequalities, particularly with respect to the Western sub-region (which has suffered from economic decline partly related to its peripherality). The diversity of the region and economic disparity is also recognised as a key issue in the RES under Strategic Objective 2 'Strong and inclusive communities'. Similar to Policy SS1, the RES seeks to reduce intra regional disparities by tackling deprivation in urban and rural areas including Cornwall. In consequence, retention has been assessed as having a significant positive effect against the population topic.
SS1 Revocation	++	++	++	Revocation of Policy SS1 will mean that it will be for local authorities to determine their priorities. In the short term effects on population are expected to be similar to those identified in relation to the retention of the policy as most local plans have been in place since RPG10 was published and therefore broadly reflect the priorities outlined in this policy (34 local authorities have plans in place which are in general conformity with RPG10). Whilst adopted core strategies may have also reflected the draft RSS as it emerged, and particularly those plans adopted between July 2008 and July 2010 (i.e. the Poole Core Strategy), the spatial strategy set out in Policy CSS of the draft revised RRS was in general alignment with that of RPG10 and the RES in seeking to focus growth within urban areas (particularly in the northern sub-region). In the medium to long term it is anticipated that coordination of regional and sub-regional priorities will continue in accordance with the Localism Act which places a duty to co-operate on local authorities. In this context, paragraphs 178 to 181 of the NPPF set out that local planning authorities should work collaboratively with other bodies to ensure that strategic priorities are coordinated. However, there is more uncertainty with respect to the type and magnitude of effects associated with the revocation of this policy given that regional priorities may change over time. Notwithstanding, it is expected that regional/sub-regional priorities will reflect the principles of sustainable development, in accordance with paragraph 6 of the NPPF, and encourage sustainable economic growth including by identifying priority areas for economic regeneration, reflecting paragraph 21. In consequence, revocation has been assessed as having the same positive benefits as retention.

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
SS2 Retention	++	++	++	Policy SS2 sets out the development strategy for the region, focusing the majority of growth at the PUAs (identified as Bristol, Bath, Weston-super-Mare, Gloucester, Cheltenham, Swindon, Bournemouth, Poole, Taunton, Exeter, Torbay and Plymouth). Under the headline economic priority to 'Plan sustainable and successful communities', the RES also recognises that the potential for growth of the region is concentrated in the region's larger cities and towns. Focusing development in the region's main towns and cities is expected to support the economies of existing centres, making best use of existing service provision, maximising economies of scale with respect to infrastructure investment, increasing accessibility to jobs and services, improving the urban environment and delivering housing (including affordable provision) in areas of greatest need. In consequence, retention has been assessed as having a significant positive effect against the population topic.
SS2 Revocation	++	++	++	Revocation will mean that it will be for local authorities to determine how growth should be distributed. In the short term there is not expected to be any significant change in the type and magnitude of effects as most local plans have been in place since RPG10 was published (34 local authorities have plans in place which are in general conformity with RPG10). Whilst more recently adopted plans (particularly between July 2008 and July 2010) will have also reflected the draft revised RSS, the spatial strategy was in general alignment with that of RPG10 in seeking to focus growth within urban areas (although the Strategically Significant Cities and Towns identified within the draft RSS additionally included Barnstaple, Bridgwater, Chippenham, the Cornish Towns, Dorchester, Salisbury, Trowbridge, Weymouth and Yeovil with less growth envisaged outside key centres). In the medium to long term it is anticipated that coordination of regional and sub-regional priorities will continue in accordance with the Localism Act which places a duty to co-operate on local authorities, as highlighted in respect of the revocation of Policy SS1 above. This could create more uncertainty with respect to the type and magnitude of effects associated with the revocation of this policy given that the distribution of development across the region may change. In this context, revocation could lead to a greater proportion of development being directed away from the region's main urban areas which may restrict the potential to make the best use of existing service provision, maximise economies of scale with respect to infrastructure investment, increase accessibility to jobs and services, improve the urban environment and deliver housing (including affordable provision) in areas of greatest need. However, this approach may also provide greater scope for reducing intra-regional disparities that exist in the South West. Notwithstanding the *potential effects* outlined above (which are dependent on the future approach to development in the region), the focus of the NPPF is on the delivery of sustainable development as set out in paragraph 6 of the document whilst the core planning principles outlined at paragraph 17 state, amongst other elements, that planning should promote the vitality of the main urban areas. In consequence, revocation has been assessed as having the same positive benefits as retention.
SS3 Retention	++	++	++	This policy sets out the objectives for each sub-region. Economic growth and the provision of housing, employment, retail and social facilities is a common objective across all four sub-regions with particular emphasis placed on reducing social exclusion/rural need and addressing intra-regional disparities by directing growth to disadvantaged parts of the South West. Many of the objectives identified in this policy are also reflected in the RES including those related to the provision of employment sites and housing, urban renaissance,

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				improvement of transport networks and the need to reduce intra-regional disparities and tackle deprivation including in relation to rural areas. Whilst there is a risk that the emphasis placed on the region's PUAs could exacerbate existing inequalities within the region and the viability of other centres (for example, Weymouth and Portland are amongst the more disadvantaged parts of the South-Eastern sub-region but are not identified as PUAs), overall retention has been assessed as having a significant positive effect against the population topic.
SS3 Revocation	++	++	++	Revocation of Policy SS3 will mean that it will be for local authorities to determine sub-regional objectives and priorities. In the short term there is not expected to be any significant change in the type and magnitude of effects as most local plans have been in place since RPG10 was published (34 local authorities have plans in place which are in general conformity with RPG10). In the medium to long term it is anticipated that coordination of sub-regional socio-economic objectives and priorities will continue in accordance with the NPPF, under the duty to co-operate and through LEPs (the whole of the South West has LEP coverage) and other economic partnerships/initiatives including, for example, Enterprise Zones (two Enterprise Zones are located in the South West, namely Bristol Temple Meads and Newquay Aerohub). However, there is more uncertainty with respect to the type and magnitude of effects associated with the revocation of this policy given that sub-regional objectives may change over time. Notwithstanding, sub-regional objectives and priorities are likely to seek sustainable economic growth, reflecting the core planning principles set out in the NPPF. In consequence, revocation has been assessed as having the same positive benefits as retention.
SS6 Retention	++	++	++	This policy recognises the role of those centres not designated as PUAs (particularly self-contained settlements) in meeting sub-regional growth needs and seeks to restrict growth in those towns within easy commuting distance of PUAs. In making provision for growth in these more isolated settlements, the policy could have a significant positive effect on the population of these centres (and their rural hinterlands) in terms of improving access to jobs, housing and services. In this context, the policy exceptionally identifies the Camborne and Redruth area of Cornwall as a designated centre for growth, helping to maintain its status as one of Cornwall's major employment centres and more broadly supporting wider growth of the Cornwall area. This may reduce intra-regional disparities by stimulating economic growth and regeneration of the Cornwall area, which has traditionally suffered from a low wage economy and includes severe pockets of deprivation (including within the Camborne and Redruth area itself). In this respect, the RES also identifies Cornwall as an area where investment is needed to stimulate regeneration. In consequence, retention has been assessed as having a significant positive effect against the population topic.
SS6 Revocation	++	++	++	As most local plans in the region have been in place since RPG10 was published (34 local authorities have plans in place which are in general conformity with RPG10) it is considered that there is unlikely to be a clear shift in policy in the short term. In the medium to longer term, the NPPF provides a strong policy framework for ensuring the vitality of town centres (paragraphs 23 - 27) and supporting a prosperous rural economy (paragraph 28). It is noted that in the case of Camborne and Redruth the current development plan principally comprises the Cornwall Structure Plan (to be revoked). Consequently, there would be a policy gap until such time that a local plan was in place although coordination of development across Cornwall will now be provided by the unitary authority (Cornwall Council) and other bodies including the Cornwall and Isles of Scilly LEP. In this context, Cornwall Council's preferred approach for the Core Strategy, which was subject to consultation between January and March 2012, also focuses on the

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				regeneration of Camborne and Redruth (including Pool), directing a significant proportion of growth to the area. Consequently, there is not expected to be any significant policy shift as a result of revocation of Policy SS6 for this conurbation. In consequence, revocation has been assessed as having the same positive benefits as retention.
SS8 Retention	+	+	++	This policy sets out the strategic priorities for the Bristol Area. It seeks to promote and strengthen the city's key economic role, widening the economic base and promoting higher density mixed-use development whilst balancing the provision of additional housing, employment, social and recreational facilities. This will have significant positive effects in respect of the local population and wider economic growth of the West of England sub-region and South West as a whole (reflecting the city's importance to the regional economy) in the longer term as development proposals come forward and are completed. In addition, the policy also encourages investment in regeneration initiatives with an emphasis on encouraging development in the more disadvantaged areas of Bristol which is expected help address inequalities in the Bristol Area, reflecting the fact that the city has a significant proportion of its population (around 1 in 10 people) living within the 10% most deprived areas nationally. This policy is broadly reflected within the RES. Under Strategic Objective 2 'Strong and inclusive communities' the RES recognises that the potential for growth of the region is concentrated in the South West's larger cities and town. The RES also highlights the West of England, and in particular Bristol, as having a lead role as a city-region of international, national and regional significance and specifically identifies the city as an area where focused effort is needed to address pockets of deprivation. In consequence, retention has been assessed as having a significant positive effect against the population topic in the long term.
SS8 Revocation	+	+	++	Bristol City Council adopted its Core Strategy in June 2011, within the regional policy framework set out in RPG10. Broadly, the objectives of the Core Strategy do not appear to be incompatible with those set out in Policy SS8 and include, for example, objectives relating to ambitious and sustainable economic growth and mixed balanced and sustainable communities. It is also anticipated that priorities for the Bristol Area would continue to be established at the regional and sub-regional level, in accordance with the Localism Act which places a duty to co-operate on local authorities and the NPPF. In this respect, the Bristol Area is covered by the West of England LEP which is expected to help coordinate economic development at the sub-regional level. In consequence, revocation has been assessed as having the same positive benefits as retention.
SS9 Retention	+	+	++	This policy sets out the strategic priorities for Bath. It encourages housing and economic development (including tourism) within the city which is expected to have positive increasing to significant positive benefits in terms of economic growth. This reflects both the importance of tourism to the local economy but also the need for investment in modern workspaces to help diversify the economic base. Increasing the provision of housing may also help address current affordability issues in the local housing market. This policy is broadly reflected within the RES. Under Strategic Objective 2 'Strong and inclusive communities' the RES recognises that the potential for growth of the region is concentrated in the South West's larger cities and town. The RES also highlights the West of England as having a lead role in the economic growth of the region and identifies Bath (alongside other assets) under Strategic Objective 3 'An effective and confident region' as a historic asset to be protected and enhanced in order to raise the profile and image of the South West.

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				In consequence, retention has been assessed as having a significant positive effect against the population topic in the long term.
SS9 Revocation	+	+	++	The Bath and North East Somerset Local Plan was adopted in October 2007, within the regional framework set out in RPG10. Consequently, revocation of Policy SS8 is likely to result in similar effects to the population as those associated with retention of the policy in the short term. In the medium to long term, development in Bath will be delivered in accordance with Bath and North East Somerset Council's Core Strategy that was submitted in May 2011 (Examination in Public is currently suspended until June 2013). The strategy for Bath set out in the draft Core Strategy seeks, amongst other elements, to encourage economic development and housing provision which, allied with the NPPF which promotes economic growth, should enable realisation of the objectives of Policy SS9. In consequence, revocation has been assessed as having the same positive benefits as retention.
SS10 Retention	+	+	++	This policy sets out the strategic priorities for Weston-super-Mare. It seeks to promote the town as a destination for employment investment and supports investment to enhance tourist and business facilities. This is likely to generate positive, increasing to significant positive effects on the population particularly given that the economic base of Weston has significantly weakened with structural changes in tourism and loss of key manufacturers and the area suffers from high levels of deprivation. However, the policy does look to limit housing growth until employment development is more closely aligned which may limit the potential supply of housing and delivery of affordable homes. This policy is broadly reflected within the RES. Under Strategic Objective 2 'Strong and inclusive communities' the RES recognises that the potential for growth of the region is concentrated in the South West's larger cities and town. The RES also highlights the West of England as having a lead role in the economic growth of the region. In consequence, retention has been assessed as having a significant positive effect against the population topic in the long term.
SS10 Revocation	+	+	++	North Somerset Council's Core Strategy was adopted in April 2012. The Core Strategy's approach is to focus development within Weston-super-Mare as part of an employment-led strategy to improve self-containment and reduce out-commuting, similar to the priorities identified in Policy SS10 of RPG10. It is therefore expected that the revocation of Policy SS10 would not affect the development of the area. In consequence, revocation has been assessed as having the same positive benefits as retention.
SS11 Retention	+	+	++	In supporting continued economic investment and increasing housing provision, this policy is expected to help maintain and enhance Swindon's role as a key economic driver in the South West region whilst addressing disparities that exist across the area. Policy S11 also places a strong emphasis on improving the town centre and urban environment alongside the redevelopment of brownfield sites which is expected to help improve the image of the town (leading to increased inward investment) and increase retail performance. House prices are lower than many other towns in the region although residents on average incomes have difficulty accessing the housing market. An increase in housing provision supported by this policy will help address this issue. This policy is broadly reflected within the RES. Under Strategic Objective 2 'Strong and inclusive communities' the RES recognises that the potential for growth of the region is concentrated in the South West's larger cities and town. The RES also identifies Swindon as having the potential for a far more significant role in the region.

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				In consequence, retention has been assessed as having a significant positive effect against the population topic in the long term.
SS11 Revocation	+	+	++	The Swindon Borough Local Plan was adopted in July 2006, within the regional framework set out in RPG10. Consequently, revocation of Policy SS11 is likely to result in similar effects to population to those associated with retention of the policy in the short term. In the medium to long term, development in Swindon will be delivered in accordance with the Council's Core Strategy. Swindon's Revised Proposed Submission Core Strategy (March 2011) is consistent with Policy SS11 in seeking to improve the image of the town and deliver economic growth, invest in transport infrastructure, realise development opportunities within the urban area (but making provision for sustainable extensions) and deliver higher density residential development. In consequence, revocation has been assessed as having the same positive benefits as retention.
SS15 Retention	+	+	++	This policy is expected to maintain and enhance Exeter's role as a key regional centre in the South West and commercial, cultural and service centre for the central part of the region. The policy seeks to develop the city's role as a focal point for strategic investment (including strategic transport infrastructure investment) and diversify its economic base which is expected to help enhance the relatively undeveloped knowledge-based sector and retain young, skilled workers in the area. Investment in jobs, services and housing may also help address pockets of deprivation that exist in the city (and beyond) and housing affordability more generally. This policy is broadly reflected within the RES. Under Strategic Objective 2 'Strong and inclusive communities' the RES recognises that the potential for growth of the region is concentrated in the South West's larger cities and town. The RES also identifies Exeter as having the potential for a far more significant role in the region. In consequence, retention has been assessed as having a significant positive effect against the population topic in the long term.
SS15 Revocation	+	+	++	The Exeter City Core Strategy was adopted in February 2012, within the regional policy framework set out in RPG10. The vision is to embrace the city's role in the region as an area for growth and in this context a number of the plan's objectives reflect those outlined in Policy SS15 including developing the potential of the city for further economic and commercial investment. In consequence, revocation has been assessed as having the same positive benefits as retention.
SS16 Retention	+	+	++	Torbay suffers from a relatively weak economy, generating the least GVA per head in the South West. The area also suffers from severe deprivation with 1 in 10 people living within the 10% most deprived areas nationally. This socio-economic picture reflects a number of factors including a reliance on a declining tourism-based economy, lack of economic diversification and shortfall of people of working age. In promoting investment in strategic facilities for the tourist industry, regeneration of the town centres that comprise the PUA and improvement in transport linkages coupled with high quality development/redevelopment to attract inwards investment, Policy SS16 is expected to help address these issues, generating a positive, increasing to significant positive effect in relation to the population. The policy also seeks a balanced level of housing provision which may help address the significant need for affordable housing in the PUA. This policy is broadly reflected within the RES. Under Strategic Objective 2 'Strong and inclusive communities' the RES recognises that the potential for growth of the region is concentrated in the South West's larger cities and town. The RES also identifies Torbay

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				as an area where focused effort is needed to address pockets of deprivation. In consequence, retention has been assessed as having a significant positive effect against the population topic in the long term.
SS16 Revocation	+	+	++	The Torbay Local Plan was adopted in April 2004 within the regional framework of RPG10. Consequently, revocation of Policy SS16 is likely to result in similar positive effects to the population as those associated with retention of the policy in the short term. In the medium to long term, development in Torbay will be delivered in accordance with the emerging local plan (currently the emerging Torbay Core Strategy). The Torbay Core Strategy is not well advanced however, it is expected that there will continue to be development with some benefits to the population. Further, a number of emerging objectives set out in the Core Strategy Regulation 25 consultation document (dated 2009) reflect those of Policy SS16 including the need to broaden the economic base of Torbay and increase investment in tourism infrastructure. In consequence, revocation has been assessed as having the same positive benefits as retention.
SS17 Retention	+	+	++	This policy sets out the strategic priorities for Plymouth with a focus on economic development and regeneration linked with the city's high quality built environment and economic diversification. This is expected to have a positive increasing to significant positive effect with respect to the population by helping the city realise its economic potential and addressing the disparities that exist in the area (around 1 in 10 people live within the 10% most deprived areas nationally). The policy's emphasis on improving linkages with the surrounding hinterland may also help distribute these benefits beyond the immediate area to the wider Western sub-region and beyond. Growth of the city is expected to help enhance affordable housing provision, addressing issues associated with access to the housing market in the area (linked with low income levels and historic rises in house prices). New development may also increase the viability of existing, and stimulate investment in new, services and facilities. This policy is broadly reflected within the RES. Under Strategic Objective 2 'Strong and inclusive communities' the RES recognises that the potential for growth of the region is concentrated in the South West's larger cities and town. The RES also identifies Plymouth as having the potential for a far more significant role in the region and as an area where focused effort is needed to address pockets of deprivation. In consequence, retention has been assessed as having a significant positive effect against the population topic in the long term.
SS17 Revocation	+	+	++	The Plymouth City Core Strategy was adopted in April 2007. In accordance with the regional framework of RPG10 and Policy SS17 in particular, it seeks to establish Plymouth as the economic hub of the far South West. In this context, a number of the plan's objectives reflect those of Policy SS17 including supporting regeneration and diversification. It is therefore considered that revocation of Policy SS17 would have no material change to the identified effects. In consequence, revocation has been assessed as having the same positive benefits as retention.
SS18 Retention	+	+	++	Policy SS18 sets out the strategic priorities for Cornwall and the Isles of Scilly. The policy places a strong emphasis on the regeneration of the area's main towns allied with enhancement of Camborne and Redruth as a focus for economic growth and development of Truro as a sub-regional centre for retailing and administration. This is expected to have a positive increasing to significant positive effect on the population by helping to address the area's weak economy (together with Torbay, Cornwall/the Isles of

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				Scilly generate the least GVA per head in the South West), diversify employment (which is generally low waged and seasonal), tackle the widespread deprivation that exists in the area and maintain the status of Camborne and Redruth as one of Cornwall's major employment centres. In this context, the policy is expected to complement European Convergence Funding investment in the area, helping to improve the local economy and move it closer to the EU average. According to Cornwall Council, house prices in the area are on average 9 times average incomes and 20,000 people are on housing waiting lists (3,000 of which are in serious need of homes). Regeneration of the main towns is expected to increase the provision of affordable housing across Cornwall (and the Isles of Scilly), helping to alleviate this problem. New development may also increase the viability of existing, and stimulate investment in new, services and facilities. However, there is a risk that the emphasis placed on Camborne and Redruth, and to a lesser degree Truro, may direct needed investment (including affordable housing provision) from other areas. This policy is broadly reflected within the RES. Under Regional Priority 2B 'Regenerate the most disadvantaged areas' Cornwall is identified as an area where investment is needed to address deprivation. In consequence, retention has been assessed as having a significant positive effect against the population topic in the long term.
SS18 Revocation	+	+	++	The majority of the local plans of the former authorities that now comprise Cornwall Council were adopted at or prior to the publication of RPG10. Carrick also adopted a Balancing Housing Markets DPD in February 2008. The Isles of Scilly Local Plan meanwhile was adopted in November 2005. Notwithstanding the status of local plans across the area, it is expected that there will continue to be development with associated significant benefits to the population and that growth will be coordinated in accordance with the Localism Act which places a duty to co-operate on local authorities. This will be facilitated by the fact that there now exists a single authority across Cornwall and also by existing partnerships operating within the area including the Cornwall and Isles of Scilly LEP. Cornwall Council undertook consultation on the preferred approach for the Core Strategy between January and March 2012. Similar to Policy SS18, this approach focuses on the regeneration of Camborne and Redruth (including Pool) and supports improvements to the other main towns including maintaining Truro as the sub-regional centre for retailing. Whilst it is noted that the emerging plan perhaps places greater emphasis on the St Austell and Clay Country area as a focus for regeneration, it seems likely that the overarching objectives for the area will be similar to those outlined in RPG10 and associated effects similar to those identified in relation to retention Policy SS18 in the medium to long term, assuming that the adopted plan follows this approach. In consequence, revocation has been assessed as having the same positive benefits as retention.
EN4 Retention	++	++	++	See assessment of likely significant effects in human health topic chapter.
EN4 Revocation	++	++	++	See assessment of likely significant effects in human health topic chapter.
EN5 Retention	++	++	++	This policy stipulates that development plans and programmes should seek to increase accessibility to/provision of community facilities and services including within rural areas. In this respect, the findings of the baseline analysis indicate that a large proportion of the region's population in rural areas have difficulty in accessing key services and facilities.

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				RES Regional Priority 1C 'Deliver skills for the economy' reflects this policy in seeking to raise skill levels in the South West through education and training. Regional Priority 2A also seeks to increase training rates and reduce the proportion of disadvantaged groups not in education, employment or training. In consequence, retention has been assessed as having a significant positive effect against the population topic.
EN5 Revocation	++	++	++	Policy EN5 has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10). The principles set out at paragraph 17 of the NPPF include that planning should take account of and support local strategies to improve health, social and cultural wellbeing for all, and deliver sufficient community and cultural facilities and services to meet local needs. With specific regard to rural areas, paragraph 28 also stipulates that local plans should promote the retention and development of local services and facilities whilst paragraph 70 states that planning policies and decisions should prevent the loss of facilities, support their modernisation and adopt an integrated approach to the location of housing, economic development and facility/service provision. In consequence, revocation has been assessed as having the same positive benefits as retention.
EC1 Retention	++	++	++	This policy supports the sustainable development of the regional economy. Economic development and improving access to training, education and jobs is expected to have significant positive effects for the population. Effects are likely to be further enhanced by the policy's emphasis on addressing the disparities that exist across the region whilst also capitalising on the economic potential of the north and east of the region. This policy is strongly reflected in all three strategic objectives that comprise the RES. In consequence, retention has been assessed as having a significant positive effect against the population topic.
EC1 Revocation	++	++	++	One of the key planning principles set out in the NPPF is to 'proactively drive and support sustainable economic development to deliver the homes, business and industrial units, infrastructure and thriving local places that the country needs' (Paragraph 17). The NPPF aims to build a strong, competitive economy (Paragraphs 18-22) and seeks to ensure that local plans are based on adequate, up-to-date and relevant evidence about the economic characteristics and prospects of the area (Paragraph 158). Revocation of the policy is therefore unlikely to lead to local authorities not providing an enabling context for job growth, particularly given the expectation that local authorities will adopt coordinated approaches to economic development at the regional/sub-regional scale both under the duty to co-operate and through LEPs (the whole of the South West has LEP coverage) and other economic partnerships/initiatives including, for example, Enterprise Zones (two Enterprise Zones are located in the South West, namely Bristol Temple Meads and Newquay Aerohub). Further, Policy EC1 has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10). Overall, revocation has been assessed as having the same positive benefits as retention.
EC2 Retention	++	++	++	Policy EC2 relates specifically to the region's most deprived areas and states that priority should be given in policies, programmes and funding of local authorities and other bodies for economic restructuring and regeneration. Economic restructuring and regeneration of areas of special need should result in significant positive effects for population by addressing the disparities that exist across the region. For example, Torbay and Cornwall and the Isles of Scilly (which are identified

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				within the policy) generate the least GVA per head in the South West whilst parts of Bristol, Torbay and Plymouth have a significant proportion of their populations (around 1 in 10 people) living within the 10% most deprived areas nationally. This policy is reflected in RES Strategic Objective 3 'Strong and inclusive communities' which principally seeks to regenerate the region's most disadvantaged areas and reduce intra-regional disparities in economic performance. In consequence, retention has been assessed as having a significant positive effect against the population topic.
EC2 Revocation	++	++	++	Paragraph 21 of the NPPF states that in drawing up local plans, local planning authorities should identify priority areas for economic regeneration. This requirement would have similar significant benefits to the population as retention and it is therefore considered that revocation of Policy EC2 would have no material change to the identified effects. In this regard both the existing and emerging local plans of a number of those authorities/areas specifically identified within Policy EC2 place a strong emphasis on addressing structural decline/deprivation and regeneration. Further, it is also expected that local authorities will continue to adopt coordinated approaches to economic development at the regional/sub-regional scale both under the duty to co-operate and through LEPs (the whole of the South West has LEP coverage) and other economic partnerships/initiatives including, for example, Enterprise Zones (two Enterprise Zones are located in the South West, namely Bristol Temple Meads and Newquay Aerohub). Overall, revocation has been assessed as having the same positive benefits as retention.
EC3 Retention	++	++	++	This policy requires local authorities and other bodies to provide for a range and choice of employment sites to meet the projected needs of local businesses and new investment including for regional and local clusters. In supporting the expansion of existing business and facilitating inward investment this policy is expected to have a significant positive effect on the population in terms of economic growth and job creation. The policy also identifies a range of criteria to guide site selection including supporting programmes of regeneration in urban, rural and coastal areas and supports sustainable farm diversification which is expected to help address inequalities that exist across the South West. This policy is reflected in the RES which includes delivery activities to provide sustainable sites and premises for business growth and encourage new enterprise including in rural areas. In consequence, retention has been assessed as having a significant positive effect against the population topic.
EC3 Revocation	++	++	++	Policies within RPG10 and the RES do not specify a specific quantum of employment land or number of jobs to be provided at the sub-regional or local authority level. Notwithstanding, the analysis of adopted local plans (see Appendix C) indicates that where employment land and/or job targets are provided at the local level these are now outdated. Whilst sub-regional job growth and employment land targets were set out in the draft revised RSS, these were by Housing Market Area and Travel to Work Area only and not apportioned to individual local authority areas. It is therefore not possible to determine whether these targets have been fully reflected in core strategies adopted since the publication of the draft revised RSS. Consequently, there is a degree of uncertainty with respect to the magnitude of effects which will be dependent on the quantum and precise location of future economic development. Notwithstanding, one of the core planning principles identified in the NPPF (at paragraph 17) is that planning should drive and support sustainable economic development to deliver the homes, businesses, industrial units, infrastructure and thriving local places that the country needs. Furthermore paragraphs 18-22 deal with building a strong, competitive economy (paragraphs 18-22)

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				and at paragraph 20 the NPPF states that 'local authorities should plan proactively to meet development needs of business and support an economy fit for the 21st century'. Paragraph 158 of the NPPF also seeks to ensure that Local Plans are based on adequate, up-to-date and relevant evidence about the economic, social and environmental characteristics and prospects of the area. Local planning authorities should ensure that their assessment of and strategies for housing, employment and other uses are integrated, and that they take full account of relevant market and economic signals. In consequence, with revocation of the Regional Strategy the strong emphasis on supporting economic development and the significant positive effects accruing would continue under the NPPF and be cascaded through local plans and through implementing the duty to co-operate where cross boundary approaches are required. In consequence, with revocation the strong emphasis on supporting economic development and the significant positive effects accruing would continue under the NPPF and be cascaded through local plans and through implementing the duty to co-operate where cross boundary approaches are required.
EC4 Retention	++	++	++	This policy seeks the identification of major strategic sites by the regional planning body and regional development agency for inclusion in structure plans. It provides criteria which the RPB and RDA should follow when identifying such sites. The policy is also reflected within the RES which includes delivery activities to provide sustainable sites and premises for business growth. It has been assumed that, in the absence of structure plans and regional planning body, the identification of strategic sites by local planning authorities and other appropriate bodies would continue, generating significant positive effects against the population topic (associated with economic growth and job creation in particular).
EC4 Revocation	++	++	++	Revocation is likely to generate similar significant positive effects against the population topic reflecting the fact that the majority of local plans have been in place since RPG10 was published (34 local authorities have plans in place which are in general conformity with RPG10) whilst emerging plans will be prepared in accordance with guidance contained in the NPPF.
EC6 Retention	++	++	++	This policy seeks to protect and enhance existing centres, where development will contribute to the regeneration and environmental improvement of town centres. Focusing growth within the PUAs and other designated centres (and restricting out-of-town provision) is likely to increase the vitality and viability of these areas whilst enabling some growth in smaller areas to meet local needs is expected to help maintain and possibly enhance retail provision in smaller centres. In consequence, retention has been assessed as having a significant positive effect against the population topic.
EC6 Revocation	++	++	++	Policy EC6 has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10) and therefore there is not expected to be any change in effects over the short term. In the short, medium and long term, the NPPF will provide a strong policy framework for ensuring the vitality of town centres (Paragraphs 23 - 27) and on supporting a prosperous rural economy (Paragraph 28). In consequence, revocation has been assessed as having the same positive benefits as retention.
TCS1 Retention	++	++	++	This policy promotes sustainable tourism which could be beneficial to the population as a result of both the economic benefits (e.g. related to increased visitor spend) and job provision (e.g. associated with flagship development) associated with tourism

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				development as well as the provision of facilities for use by residents. The focus of the policy on the regeneration of coastal resorts is particularly noted given that many of the region's coastal communities have suffered economic decline in recent years. This policy is reflected in the RES which identifies a need to improve the quality of the region's tourism offer and to make the industry more productive and more sustainable. In consequence, retention has been assessed as having a significant positive effect against the population topic.
TCS1 Revocation	++	++	++	Policy TCS1 has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10) and therefore there is not expected to be any change in effects over the short term. The NPPF also strongly supports sustainable economic growth across all sectors, which would include the tourism sector (paragraph 18-21) and it also contains specific policies on tourism, linked to the vitality of town centres (paragraph 23), and supporting a prosperous rural economy (paragraph 28). In consequence, revocation has been assessed as having the same positive benefits as retention.
TCS2 Retention	++	++	++	This policy requires local authorities and other bodies to protect existing open space and recreational facilities and identify opportunities for new cultural, leisure and community sports facilities. Its retention is likely to have a significant positive effect against the population topic in terms of contributing to the leisure and recreational needs of communities.
TCS2 Revocation	++	++	++	Policy TCS2 has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10) and therefore there is not expected to be any change in effects over the short term. The NPPF sets out policies to deliver the social, recreational and cultural facilities and services the community needs (Paragraph 70). The NPPF states that local planning authorities should plan positively for the provision and use of shared space and community facilities (such as sports venues and cultural buildings) to enhance the sustainability of communities and residential environments. The NPPF also sets this out for rural areas (Paragraph 28). Policies in the NPPF also seek to promote and conserve cultural heritage, designated landscapes and green infrastructure, which also contribute to the provision of cultural facilities and the delivery of significant benefits to the population and human health as well as cultural heritage. Taking into account the fact that Policy TCS2 has already been put into effect, the provisions of national policy set out in the NPPF and the high level nature of Policy TCS2, revocation is expected to generate similar significant positive effects with respect to the population topic as those identified in relation to retention.
HO1 Retention	+	+	++	This policy concerns regional housing provision up to 2016. The provision of new housing will have significant positive effects on the population topic in the long term with positive effects in the short to medium term associated with meeting housing need across the region, the provision of affordable units and also related economic benefits (e.g. spend on construction). The policy is reflected in the RES which under its priority of 'Plan sustainable and successful communities' identifies a need to provide good quality, affordable homes. Policy H01 seeks to raise the annual average rate of house building in the region (to 20,200dpa) which, for the 10 years before 2001, had ranged from about 15,000dpa to 19,000dpa. However, annual house building since 2001 has remained below the regional target, with only just over 16,000 dwellings being built in 2011/12. The combination of the

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				on-going economic climate and current house building rates will probably mean that the amount of development delivered in the short to medium term is likely to continue to be lower than the annual target proposed in RPG10. The result is that, for the short to medium term at least, the beneficial effects (on population) will be lessened. In the long term, it is expected that the annual average rate of house building will increase as housing will be delivered at the higher rates set out in adopted core strategies and emerging plans based on up-to-date evidence of housing need and supported by national government fiscal incentives. In this context, provision is made for a total of 22,586 dwellings per annum within the adopted core strategies and emerging plans of all local authorities across the South West. This exceeds the annual requirements set out in Policy HO1 (note that this figure does not take account of the emerging plans of Exmoor National Park, Council of the Isles of Scilly, Cotswold and West Dorset District Councils and Weymouth and Portland Borough Councils which are at an early stage in plan preparation) and consequently it is assumed that significant positive effects on the population topic associated with increased housing provision would continue (although effects are likely to be less in the short to medium term due to lower completion rates). However, it should be noted that planned housing growth is below the housing requirements set out in Policy HD1 of the draft revised RSS for these authorities (28,349 dwellings per annum) with a total of 14 adopted and emerging core strategies either meeting or exceeding these targets.
HO1 Revocation	+	+	++	Revocation will not remove the need for more houses within the region and in this respect paragraph 159 of the NPPF states that local planning authorities should have a clear understanding of housing needs in their area. In the short to medium term, revocation is not expected to impact on house building rates in the region reflecting the fact that rates of house building remain below requirements set out in Policy HO1. In the longer term, house building rates are expected to increase whether Policy HO1 is revoked or not, reflecting the assumption that housing will be delivered at the higher rates set out in adopted core strategies and replacement local plans (prepared in accordance with the NPPF). In this context, provision is made for a total of 22,586 dwellings per annum within the adopted core strategies and emerging plans of all local authorities across the South West Consequently, it is expected that significant positive effects on the population topic associated with revocation would be the same as retention.
HO3 Retention	+	+	++	In the South West, house prices remain high in relation to incomes and the area has the highest proportion of second homes in the country resulting in affordability issues across the region. In this context, the provision of affordable housing will have a positive increasing to significant positive effect on the population topic although the exact magnitude of effects will be dependent on the quantum of dwellings provided. In this respect, Policy HO3 does provide an indicative target for affordable provision of between 6,000 and 10,000 units per year although future rates will be dependent on market conditions, the total volume of dwellings provided (see Policy HO1) and affordable housing requirements set at the local level. The policy is reflected in the RES which under its priority of 'Plan sustainable and successful communities' identifies a need to provide good quality, affordable homes.
HO3 Revocation	+	+	++	As set out under the assessment of the revocation of Policy HO1, revocation is not expected to affect the rate of delivery of housing. Further, the NPPF seeks to boost significantly the supply of housing and requires local planning authorities to meet the full, objectively assessed needs for both market and affordable housing (Paragraph 47). Where authorities have identified that affordable housing is needed, they should then set policies for meeting this need (Paragraph 50). This includes rural exception sites where

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				appropriate (Paragraph 54). In consequence, revocation has been assessed as having the same positive benefits as retention.
HO6 Retention	+	+	++	This policy relates to the density, design and type of housing to be provided (rather than the development of housing per se which is considered under the assessment of Policy HO1). In requiring local authorities to make provision for housing to meet local needs, it is expected that retention will have a positive increasing to significant positive effect on population.
HO6 Revocation	+	+	++	In the short term there is not expected to be any significant change in the type and magnitude of effects associated with the revocation of Policy HO6 as most local plans have been in place since RPG10 was published (34 local authorities have plans in place which are in general conformity with RPG10). Further, the emerging draft RSS for the South West (which some plans have been prepared in conformity with) also supported development at higher densities (40dph across all Housing Market Areas with higher densities within urban areas) and encouraged a mix of housing and good quality design. As set out under the assessment of the revocation of Policies HO1 and HO3, the NPPF seeks to boost significantly the supply of housing and requires local planning authorities to meet the full, objectively assessed needs for both market and affordable housing (Paragraph 47). Where authorities have identified that affordable housing is needed, they should then set policies for meeting this need (Paragraph 50). In consequence, revocation has been assessed as having the same positive benefits as retention. It should be noted that RPG10 does not include specific policy covering provision for gypsies and travellers and travelling showpeople. However, Policy GT1 of the draft revised RSS set out a requirement for local authorities to provide for 1,634 additional pitches in the region to 2011 with a 3% compound growth in requirements per annum thereafter (where updated data on Gypsy and Traveller requirements is not available) wwhilst Policy GT2 identified a requirement for 94 additional plots for travelling showpeople in the region. Of the 47 local authorities in the South West (including the former local authority areas that now comprise Cornwall Council and Wiltshire Council), 15 have local plans or core strategies which do not make any provision for gypsies and travellers. Four adopted core strategies include specific targets which reflect those contained within the draft revised RSS and/or are based on local assessments of need. As RPG10 does not include policy relating to gypsies and travellers and travelling showpeople, revocation is not expected to affect provision. The new national policy for gypsies, travellers and travelling showpeople should provide the required provision for these groups. It asks local authorities to use a “robust evidence base” to assess needs for the purposes of planning and managing development of traveller sites, and to set targets for traveller sites based on their needs assessment. The policy asks local authorities to bring forward a five-year supply of land for traveller sites in their plans to meet the targets they have set and to update it annually. The policy also asks local authorities to look into the longer term and to identify a supply of specific developable sites or broad locations for years six to ten and, where possible, for years 11-15. As with housing more generally, under revocation there will be significant positive effects on population as additional provision for gypsy and travellers is secured through the adopted and emerging core strategies and local plans. Further, revocation offers the prospect of providing clarity to local authorities in the region by removing the potentially confusing position created by the absence of gypsy/ traveller site policy in RPG10 combined with a targeted requirement within the draft revised RSS.

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
TRAN2 Retention	++	++	++	The objective of this policy is to encourage better strategic transport links both within the region and between the South West and other areas. Improvement of the strategic transport network is expected to support existing businesses and encourage inward investment, facilitating economic growth. Improvement of the network is also expected to help address issues related to the peripherality of some of the areas within the region itself, most notably the Western sub-region including Cornwall. It should also be noted that the construction and operation of new infrastructure will also generate economic benefits associated with capital spend. This policy is reflected under RES Priority 3A 'Improve transport networks' which seeks increased reliability of public transport infrastructure and enhanced connectivity, providing access to markets, reducing travel time and tackling peripherality. Overall, retention has therefore been assessed as having a significant positive effect on population.
TRAN2 Revocation	++	++	++	In the short term there is not expected to be any significant change in the type and magnitude of effects associated with the revocation of Policy TRAN2 as most local plans have been in place since RPG10 was published (34 local authorities have plans in place which are in general conformity with RPG10). Furthermore Local Transport Plans continue to be prepared across the region with the West of England JLTP Round 3 referencing a timescale of 2011-2026. It is expected that strategic coordination of investment/improvement in transportation infrastructure across the South West would continue in the medium to long term in accordance with the NPPF, which requires local authorities to work with neighbouring authorities and transport providers to develop strategies for transport infrastructure provision (paragraph 31), and duty to co-operate. In consequence, it assumed that despite revocation the strategic coordination of investment/improvement in transportation infrastructure across the South West would continue and that any benefits for the population would be similar to those associated with retention.
TRAN6 Retention	++	++	++	This policy seeks to achieve a more sustainable pattern of distribution. The enhancement of freight transport infrastructure is likely to benefit regional economic activity (by ensuring the efficient and timely delivery of goods). It should also be noted that any capital spend associated with the construction and operation of new infrastructure will also generate economic benefits. Overall, retention has therefore been assessed as having a significant positive effect on population.
TRAN6 Revocation	++	++	++	No change to the positive effects of retaining the policy is expected. Most local plans have been in place since RPG10 was published (34 local authorities have plans in place which are in general conformity with RPG10). Further, the NPPF promotes sustainable transport (Section 4) and encourages solutions that support reductions in greenhouse gas emissions and congestion, supporting patterns of development that facilitate sustainable modes of transport (paragraph 30). In this context and with specific regard to the movement of goods, paragraph 35 stipulates that plans should protect and exploit opportunities for the use of sustainable transport modes. The NPPF also states that local authorities should work with neighbouring authorities and transport providers to develop strategies for the provision of viable infrastructure necessary to support sustainable development, including large scale facilities such as rail fright interchanges and transport investment necessary to support strategies for the growth of ports, airports or other major generators of travel demand in their areas (paragraph 31). In consequence, revocation has been assessed as having the same positive benefits as

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				retention.

2.7.1 Effects of Revocation

The Government's aim for the economy (as announced in the Local Growth White Paper published in October 2010) sets out a vision for local growth, shifting power away from central government to local communities, citizens and independent providers. This means allowing market forces to determine where growth takes place and providing incentives that ensure local communities benefit. The Government's Housing Strategy for England (November 2011) also identified that local areas need to be free to provide the homes needed for their communities and to be able to work with the grain of the market.

Following revocation, national planning policy will still be applicable including paragraph 156 of the National Planning Policy Framework which identifies the strategic priorities that local authorities must consider when making local plans including delivery of the homes and jobs needed in the area. However, it will be for local authorities to establish the right level of employment land and housing provision (including affordable housing and provision for gypsies and travellers) for their area over a period of about 15 years taking into account longer term requirements.

Paragraph 47 of the Framework highlights the need for local authorities to meet the housing needs of housing markets in their area and also to retain a 5 year supply of deliverable sites with an additional buffer of 5% of land for housing or 20% in areas where there has under-delivery has been persistent. The NPPF in paragraph 50 requires local authorities to plan for a mix of housing including the appropriate size and type of housing in a local area. Separate Government guidance on travellers' sites has been developed. The policy published in March 2012 makes it clear that its overarching aim is to ensure fair and equal treatment for travellers, in a way that facilitates the traditional and nomadic way of life of travellers while respecting the interests of the settled community. Local authorities when preparing their local plans should set pitch targets for gypsies and travellers and plot targets for travelling show people which address the likely permanent and transit site accommodation needs of travellers in their area, working collaboratively with neighbouring local planning authorities.

In the short to medium term, revocation is not expected to impact on economic growth or house building rates given that the majority of local plans in the region have been in place since RPG10 was published. Further, housing delivery remains below requirements set out in RPG10 Policy HO1 (due mainly to macro-economic circumstances). In the medium to long term, impacts are slightly less certain as this will be dependent on the extent to which local authorities apply the requirements of the Framework to their local context and whether they continue to support the pattern of development set out in the Regional

Strategy. However, the objectives and overarching approach to the distribution of new development being taken forward in emerging plans do not appear to be inconsistent with the sub-regional priorities identified in RPG10. It is also expected that working across local authority boundaries to coordinate strategic priorities will take place under the duty to co-operate and through the operation of the six regional LEPs. The result is that the broad spatial strategy identified in RPG10 (i.e. focusing the majority of development within the region's PUAs) is likely to continue. The annual average rate of house building is also likely to increase as housing will be delivered at the higher rates set out in adopted core strategies and emerging plans based on up-to-date evidence of housing need.

2.7.2 Effects of Partial Revocation

The effects of partial revocation concern either:

- Revoking all the quantified and spatially specific policies (for instance where a quantum of development, land for development or amounts of minerals to be extracted or waste disposal is allocated to a particular location in the region) and retaining for a transitional period the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period all the spatially specific policies where a quantum of development or land for development is allocated to a particular location in the region and revoking the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period policies, ambitions and/or priorities, the revocation of which may lead to likely significant negative environmental effects.

The likely significant effects on population associated with the revocation and retention of the quantitative and spatially specific policies are summarised in **Table 2.7** for policies SS1 and SS3, SS6, SS8-11, SS15-18, EC2, EC6, HO1, HO3, HO6, TRAN3 and TRAN9. However, in no instances were the population effects associated with either the revocation or retention of these policies considered to be negative. The combination of NPPF guidance, LEP activities, existing joint working and the purpose to increase to housing supply and create employment and contribute to sustainable, inclusive and mixed communities creates a framework where the effects of revocation are considered to deliver similar positive benefits to retention.

The assessment has found that there are no policies in RPG10 where the act of revocation will cause a significant negative effect whilst retaining the same policy will maintain a significant environmental benefit.

2.7.1 Effects of Retention

Under retention the Regional Strategy will play an increasingly smaller role in plan making and

development control over time and this is of particular relevance to RPG10 Policy HO1 which provides the quantum of housing provision in the region, set at an average of 20,200 dwellings between 1996 and 2016. Whether the Regional Strategy is revoked or not, housing will be delivered at the higher rates set out in adopted core strategies and the future replacement local plans (prepared in accordance with the NPPF) in the longer term. An increase in the number of houses constructed will have clear benefits for population.

By setting out the overarching direction within which local plans should be developed, retention of the Regional Strategy would have significant benefits in the short, medium and long term.

2.8 Mitigation Measures

Given that all likely significant effects identified would be positive, no mitigating measures are proposed for this topic.

3. Human Health

3.1 Introduction

The overview of plans and programmes and baseline information contained in this section provides the context for the assessment of potential effects of the proposals to revoke the regional strategies on human health. Information is presented for both national and regional levels.

There are links between the human health and wellbeing topic and other topics in the SEA, specifically air, climate change and material assets.

3.2 Summary of Plans and Programmes

3.2.1 International

The World Health Organization (WHO)[43] states that *"health promotion goes beyond health care. It puts health on the agenda of policy makers in all sectors and at all levels*; consequently, healthy public policy has been a main goal of health development in many countries. The ***Canadian Lalonde Report (1974)*** identified four health fields independently responsible for individual health: environment, human biology, lifestyle and health care organisation.

The WHO ***Children's Environment and Health Action Plan for Europe (CEHAPE) (2004)*** was launched in June 2004 and signed by all 53 Member States of the WHO European Region, including the UK. The aim of the CEHAPE is to protect the health of children and young people from environmental hazards.

The European Union has a Programme for Community action in the field of Health (2008-2013) and, on the 23/4R[d] October 2007 the Commission adopted a new overarching Health Strategy ***'Together for Health - A Strategic Approach for the EU 2008-2013'***. Community Action focuses on tackling health determinants which are categorized as: personal behaviour and lifestyles; influences within communities which can sustain or damage health; living and working conditions and access to health services; and general socio-economic, cultural and environmental conditions.

The ***SEA Directive*** adopted in 2001 specifically requires the consideration of "*the likely significant effects on the environment, including on issues such as …, human health, …*" (European Parliament and

[43]See the Ottawa Charter adopted at the First International Conference on Health Promotion in 1986.

the Council of the European Union, 2001). The SEA Protocol (United Nations Economic Commission for Europe, 2003) implements the political commitments made at the Third European Conference on Environment and Health and uses the term 'environment and health' throughout. It indicates that health authorities should be consulted at the different stages of the process and so goes further than the SEA Directive. Once ratified, it will require changes to the SEA Directive to require that health authorities are statutory consultees.

The WHO publication ***Health Impact Assessment in Strategic Environmental Assessment (2001)*** provides a review of Health Impact Assessment concepts, methods and practice to support the development of a protocol on Strategic Environmental Assessment to the Espoo Convention, which adequately covers health impacts.

3.2.2 National

UK

Many of the national level policies and strategies regarding health are aimed at understanding the trends and nature of health issues within the country, understanding the links between health issues and other related factors (such as economic status, etc.), and, primarily, at reducing the inequalities in health outlooks that are evident between different parts of the country and different sections of the population. Whilst some applicable policies/strategies are contained within adopted strategies, many of the Government's objectives and intended actions are contained within White Papers and guidance papers.

The Health Protection Agency's ***Children's Environment and Health Action Plan, a summary of current activities which address children's environment and health issues in the UK (2007)*** applies the objectives of CEHAPE (2004) to the UK context and ***A Children's Environment and Health Strategy for the United Kingdom (2009)*** provides recommendations from the Health Protection Agency to the UK Government as to how it best can meet its commitment to the CEHAPE.

England

In England, the Department of Health is the government department responsible for public health issues. Its work includes setting national standards, shaping the direction of health and social care services and promoting healthier living.

The NHS White Paper, ***Equity and excellence: Liberating the NHS (2010)*** sets out the Government's long-term vision for the future of the NHS and consists of three mutually-reinforcing parts:

- putting patients at the heart of the NHS;
- focusing on improving outcomes; and

- empowering local organisations and professionals.

***Liberating the NHS: Legislative framework and next steps (*2010)** is the Government's response to the consultation on the implementation of the White Paper and three further consultations: ***Commissioning for patients (2010)*, *Local democratic legitimacy in health (2010)* and *Regulating healthcare providers (2010)*.** In this document the Government's commitment to the White Paper reforms are reaffirmed and described in detail how developments in light of the consultation will be put into practice across the three parts identified in the white paper above.

The ***Health and Social Care Act 2012*** enacts the proposals set out in the White Paper and the subsequent rounds of consultation. The changes are designed to make the NHS more responsive, efficient and accountable, and capable of responding to future challenges. Key elements of the Act include: clinically led commissioning, service innovation, giving greater voice for patients, providing a new focus for public health, ensuring greater accountability and streamlining arms length bodies.

The Government's White Paper, ***Healthy Lives, Healthy People: Our strategy for public health in England (2010)*** recognises that the quality of the environment, including the availability of green space and the influence of poor air quality and noise, affects people's health and wellbeing. It details plans for a shift of power to local communities, including new duties and powers for local authorities to improve the health of local people. From April 2013, Directors of Public Health will be employed within upper tier and unitary local authorities. They will be able to influence local services, for example joining up activity on rights of way, countryside access and green space management to improve public health by connecting people with nature.

3.2.3 South West region

The **Strategic Framework for Improving Health in the South West 2008/09 to 2010/11 (2008)** identified over 100 core ambitions for the region which were revised and refreshed following publication of the NHS Outcomes Framework 2011/12. These ambitions fall under 5 'domains' and include, for example:

- Match the highest life expectancy in Europe;
- Reduce mortality rates from cancer in people aged under 75 to reach a level of 100 per 100,000;
- Reduce mortality rates from heart disease and stroke and related diseases in people aged under 75 to 65 per 100,000;
- Develop in each health community a health campus based on the community health model through which lay people become the local resource for their population;

- All hospitals to have a hospital standardised mortality ratio among the lowest England.

3.3 Overview of the Baseline

3.3.1 National

UK

In the UK, during 2006-2008, life expectancy at birth was 77.4 years for males and 81.6 years for females.[44]

In 2006-2008, 37% of males and 38% of females in the UK rated their health as good; 44% of males and 41% of females rated their health as very good. Consequently, around 19% to 21% of males and females in the UK felt that their health was less than good.[44]

In 2007 the main causes of death in the UK were diseases of the circulatory system, and neoplasms (cancers)[44]. There are high levels of hypertension and overweight/obesity in the UK. Public health trends often correlate with deprivation and these figures for illness are invariably far less favourable in deprived areas. [45]

Deaths from respiratory diseases (including influenza, pneumonia, chronic lower respiratory disease, bronchitis, emphysema and other chronic obstructive pulmonary diseases and asthma) are higher in the UK than in any other EU Member State. In the UK there are 87.7 deaths per 100,000 males and 64.0 deaths per 100,000 females from respiratory diseases, compared to an EU average of 63.4 and 32.5[46] .

England

In England, during 2006-2008, life expectancy at birth was 77.93 years for males and 82.02 years for females.[47]

In 2006-2008, 38% of males and 39% of females in England rated their health as good; and 44% of males and 41% of females rated their health as very good[47] .

[44] ONS, United Kingdom Health Statistics 2010, http://www.statistics.gov.uk/downloads/theme_health/ukhs4/ukhs4-2010.pdf
[45] Health Survey for England 2007 Healthy lifestyles: knowledge, attitudes and behaviour Summary of key findings, Office of National Statistics, http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=6637
[46] ONS, United Kingdom Health Statistics 2010, http://www.statistics.gov.uk/downloads/theme_health/ukhs4/ukhs4-2010.pdf
[47] ONS, United Kingdom Health Statistics 2010, http://www.statistics.gov.uk/downloads/theme_health/ukhs4/ukhs4-2010.pdf

The Health Survey for England, published in 2010, includes the following key findings for 2009[48]:

- In 2009 men and women reported a similar prevalence of longstanding illness according to the Health Survey for England; 41% of men, 43% of women, and almost a quarter reported an illness limited their activity in some way; 22% of men and 23% of women.
- For adults aged 16 and over, self-reported cigarette smoking prevalence was 24% for men and 20% for women. Cigarette smoking prevalence varied by age, being higher among younger adults (32% for men and 26% for women aged 25-34) and lower among older adults (11% for men and 8% for women aged 75 and over).
- High blood pressure was 32% in men and 27% in women. The prevalence significantly increased with age in both sexes.
- The percentage of adults who were obese has gradually increased over the period examined by the HSE, from 13% of men in 1993 to 22% in 2009 and from 16% of women in 1993 to 24% in 2009.

3.3.2 South West Region

Life expectancy of males and females in the South West has improved since 2004/06 and in 2008-10 the region had the joint highest life expectancy of all the English regions for women (83.5 years), and one of the highest for men (79.5 years) (see **Table 3.1**).

Table 3.1 South West Life Expectancy at Birth, 2004/6 – 2008/10

Region	2004-06	2005-07	2006-08	2007-09	2008-10
Males					
North East	75.8	76.3	76.4	76.8	77.2
North West	75.7	76.0	76.3	76.6	77.0
Yorkshire and The Humber	76.6	76.9	77.1	77.4	77.7
East Midlands	77.3	77.6	77.8	78.1	78.4
West Midlands	76.6	76.9	77.2	77.5	77.9
East	78.3	78.7	78.9	79.3	79.6
London	77.4	77.8	78.2	78.6	79.0
South East	78.5	78.9	79.2	79.4	79.7
South West	78.5	78.7	79.0	79.2	79.5
Females					

[48] Health Survey for England 2010, http://www.ic.nhs.uk/statistics-and-data-collections/health-and-lifestyles-related-surveys/health-survey-for-england/health-survey-for-england--2009-health-and-lifestyles

Region	2004-06	2005-07	2006-08	2007-09	2008-10
North East	80.1	80.4	80.6	80.9	81.2
North West	80.3	80.5	80.6	80.8	81.1
Yorkshire and The Humber	81.0	81.1	81.3	81.5	81.8
East Midlands	81.3	81.6	81.8	82.1	82.4
West Midlands	81.1	81.4	81.6	81.9	82.2
East	82.3	82.6	82.7	83.0	83.2
London	82.0	82.4	82.7	83.1	83.3
South East	82.4	82.7	83.0	83.3	83.5
South West	82.7	82.9	83.1	83.3	83.5

Source: ONS http://www.ons.gov.uk/ons/rel/subnational-health4/life-expec-at-birth-age-65/2004-06-to-2008-10/statistical-bulletin.html#tab-Regional-life-expectancy

However, there are inequalities in life expectancy within the region with people living in areas of greatest deprivation having shorter life expectancies than those in the least deprived areas. For example, men living in the most deprived areas of North Somerset die almost 10 years earlier than their neighbours in less deprived areas. Issues associated with reduced life expectancy include equality of access to education, employment and income, as well as differences in individual behaviour[34].

South West mortality rates from major disease groups such as cancer and malignant neoplasms (cancer) are amongst the lowest in England (see **Table 3.2**). The South West region also has the lowest mortality rates from respiratory diseases (including bronchitis) of any region.

Table 3.2 Age-standardised Mortality Rates

Region	All circulatory diseases (Rates per 100,000 population)	All respiratory diseases (Rates per 100,000 population)	Malignant neoplasms (Rates per 100,000 population)	All injuries and poisonings (Rates per 100,000 population)	All other causes (Rates per 100,000 population)	All causes (Rates per 100,000 population)
North East	177	79	197	29	135	616
North West	190	82	185	33	134	624
Yorkshire and The Humber	178	76	178	24	128	584
East Midlands	166	70	169	27	126	558
West Midlands	168	69	172	27	129	566

Region	All circulatory diseases (Rates per 100,000 population)	All respiratory diseases (Rates per 100,000 population)	Malignant neoplasms (Rates per 100,000 population)	All injuries and poisonings (Rates per 100,000 population)	All other causes (Rates per 100,000 population)	All causes (Rates per 100,000 population)
East	155	61	160	22	111	508
London	162	64	163	21	113	524
South East	149	61	158	25	108	501
South West	150	58	159	27	112	505

Source: ONS (2012) Region and Country Profile Social Indicators, available from http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-227575 [Accessed June 2012]

Although the age-standardised mortality ratio (SMR) for land transport accidents is higher for South West residents than for English residents as a whole, overall the South West has lower rates of serious injury and death from road transport incidents (based on location of the incident rather than area of residence). The number of fatal casualties on roads in the South West was 192 in 2010, which amounts to 12% of the national total and there was a 5% year-on-year reduction in fatalities from 2009 to 2010 with 42% fewer fatalities in 2010 compared to the 1994-1998 average (the average reduction nationwide was 48%). The road casualty rate in the South West is amongst the lowest in England when measured according to distance driven (567 per billion vehicle miles compared to 694 nationally)[49].

While smoking rates have reduced in recent years, in 2009 it was estimated that almost one in five (18%) of adults still smoked, with the proportion slightly higher in men (19%) than in women (17%). Both groups have seen considerable reductions in prevalence since 2008 when it was estimated that 21% of men and 22% of women smoked[50].

In 2009, 24% of women and 34% of men in the South West drank more than the recommended sensible daily limits (maximum of three units for women and four for men) on at least one day in the week.

[49] Department for Transport (2010) Reported road casualties in Great Britain: annual report 2010, http://www.dft.gov.uk/statistics/releases/road-accidents-and-safety-annual-report-2010/

[50] ONS (2012) Region and Country Profile Social Indicators, available from http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-227575 [Accessed June 2012]

However, this is lower than the equivalent percentages for England as a whole (29% of women and 37% of men)[51].

3.4 Environmental Characteristics of those Areas most likely to be Significantly Affected

3.4.1 UK

Health inequalities exist in many communities, often exacerbated by poor access to or use of health services. Any future funding constraints on health services are likely to affect this situation.

At present, respiratory illness places a significant burden on the health service which is partly attributable to existing air pollution. According to Occupational Health and Safety Information Service (2006), death rates from respiratory disease are higher in the UK than both the European and EU average. The report also suggests that respiratory disease costs the NHS and society £6.6 billion.

3.4.2 South West Region

Health varies across local authorities within the region, particularly between the urban and rural areas. The highest life expectancy is forecast within the South West for residents in East Dorset and in respect of both males (82.0 years) and females (85.9 years). In contrast, the more urban and built-up areas of Bristol and Plymouth are estimated to have the lowest life expectancy in the region, with males in Bristol having a life expectancy of 77.5 years and females in Plymouth a life expectancy of 82.0 years. The widest variation in the local authority area based estimates is therefore a difference of 4.5 years for males (between East Dorset and Bristol) and a difference of 3.9 years for females (between East Dorset and Plymouth). **Table 3.3** below summarises the life expectancy position at birth in each local authority area within the South West (except the Isles of Scilly) for both males and females.

Table 3.3 Life expectancy at birth (in years) in the South West's local authorities as at 2008-2010

[51] South West Observatory (2012) The Changing State of the South West 2012, available from http://www.swo.org.uk/sotsw2012/ [Accessed June 2012]

Areas		Males	Females
Unitary Authorities	Bath & North East Somerset	80.2	83.9
	Bournemouth	78.0	82.6
	Bristol	77.5	82.2
	Cornwall	79.3	83.1
	North Somerset	79.7	83.9
	Plymouth	77.6	82.0
	Poole	79.4	83.6
	South Gloucestershire	80.6	84.2
	Swindon	78.6	83.0
	Torbay	78.3	82.5
	Wiltshire	79.6	83.7
Devon	East Devon	81.2	84.3
	Exeter	79.3	83.4
	Mid Devon	80.4	83.8
	North Devon	78.6	83.5
	South Hams	80.4	83.9
	Teignbridge	80.5	83.5
	Torridge	80.4	83.7
	West Devon	79.9	83.5
Dorset	Christchurch	81.2	84.8
	East Dorset	82.0	85.9
	North Dorset	81.6	84.7
	Purbeck	81.3	85.4
	West Dorset	79.8	84.6
	Weymouth and Portland	77.8	83.0
Gloucestershire	Cheltenham	80.6	84.4
	Cotswold	80.7	84.2
	Forest of Dean	79.4	83.1
	Gloucester	78.0	82.4
	Stroud	79.9	83.3
	Tewkesbury	79.7	84.0

Areas		Males	Females
Somerset	Mendip	80.2	83.7
	Sedgemoor	78.7	83.5
	South Somerset	79.8	84.2
	Taunton Deane	79.2	82.8
	West Somerset	79.7	84.3

Source: http://www.ons.gov.uk/ons/publications/re-reference-tables.html?edition=tcm%3A77-223356 [Accessed June 2012]

The majority of deprived areas in England (98%) are located in cities and the South West region follows a similar pattern, with the greatest number of deprived areas existing in the Bristol local authority area. Within the region, Torbay, Bristol and Plymouth have the greatest proportions of their populations living in deprivation.

Seven small areas in the South West are among the most deprived 1% of all areas in England. The two most deprived of these are in the Boscombe West ward in Bournemouth and within Weston-super-Mare in North Somerset. A further 13 small areas are within the 2% most deprived nationally.

The most widespread type of deprivation in the South West relates to barriers to housing and services, including health services. This applies in particular to small rural areas in Cornwall, Dorset and Somerset and includes difficulties with access to home ownership, which reflects the ratio of house prices to average income. A further potential barrier is the road distance to local amenities. Deprivation in Bristol and other urban areas tends to relate more to education, the living environment (such as the condition of housing) and crime.

Similar to national trends, relative deprivation has risen in some coastal areas, including the areas of West Somerset, Weymouth and Portland. Nevertheless, no area within the South West falls within the 20 local authorities[52] with the highest proportion of their LSOAs in the most deprived decile of the IMD 2010[53].

[52] See: Table 5 at http://www.communities.gov.uk/documents/statistics/pdf/1871208.pdf

[53] The Index of Multiple Deprivation 2010 (IMD 2010) is an overall measure of multiple deprivation experienced by people living in an area and is calculated for every Lower layer Super Output Area (LSOA) in England. The IMD 2010 can be used to rank every LSOA in England according to their relative level of deprivation.

3.5 Likely Evolution of the Baseline

3.5.1 National

UK

Life expectancy at birth in the UK has reached its highest level on record for both males and females. A newborn baby boy could expect to live 77.7 years and a newborn baby girl 81.9 years if mortality rates remain the same as they were in 2007-2009. Females continue to live longer than males, but the gap has been closing.

Although both sexes have shown annual improvements in life expectancy at birth, over the past 27 years the gap has narrowed from 6.0 years to 4.2 years. Based on mortality rates in 1980-1982, 26% of newborn males would die before age 65, but this had reduced to 15% based on 2007-2009 rates. The equivalent figures for newborn females were 16% in 1980-1982 and 10% in 2007-2009. Life expectancy at age 65, the number of further years someone reaching 65 in 2007-2009 could expect to live, is also higher for women than for men. Based on 2007-2009 mortality rates, a man aged 65 could expect to live another 17.6 years, and a woman aged 65 another 20.2 years.

Within the UK, life expectancy varies by country, with the highest life expectancy at birth and at age 65 is higher for England than for the other countries of the UK. [54]

England

The current general trend in human health is generally towards improved health, greater life expectancy and reduced mortality from treatable conditions.[55]

For example, life expectancy for males in England increased from 76.9 years in 2003-05 to 78.3 years in 2007-09, an increase of 1.4 years. For females, life expectancy increased by 1.2 years from 81.1 to 82.3 years over the same period[56]. Trends in respiratory illness are downwards and are expected to continue like this, although a significant factor to be considered is that measured pollution is also affected by the weather, and hot summers in 2003 and 2006 significantly increased these levels[57].

[54] Office for National Statistics, http://www.statistics.gov.uk/cci/nugget.asp?id=168
[55] Health Survey for England 2007 Healthy lifestyles: knowledge, attitudes and behaviour Summary of key findings, Office of National Statistics, http://www.statistics.gov.uk/StatBase/Product.asp?vlnk=6637
[56] ONS (2009) http://www.statistics.gov.uk/pdfdir/liex0611.pdf
[57] Defra 2008

3.5.2 South West region

The South West's population has grown at a faster rate than for England as a whole and this trend is likely to continue.

The South West also has a greater proportion of inhabitants aged 65 and over (19.6% of the total regional population) compared to any other English region.

Life expectancy in the region is high in comparison to other English regions and in 2008-10 was 83.5 years for women and 79.5 years for men.

3.6 Assessing Significance

Table 3.4 sets out guidance utilised during the assessment to help determine the relative significance of potential effects on health. It should not be viewed as definitive or prescriptive; merely illustrative of the factors that were considered as part of the assessment process.

Table 3.4 Approach to determining the significance of effects on health

Effect	*Description*	*Illustrative Guidance*
++	Significant positive	• Alternative has a significant positive effect on the likely determinants of good health in the region (including housing provision, employment opportunity, level of deprivation, physical activity, access to open space and recreational activities, improvements to environmental quality and community safety) • Alternative has a strong and sustained positive effect on health and wellbeing and acknowledges the health needs of specific groups in society (children, mums to be and the elderly). • Alternative supports the provision of healthcare facilities (i.e. as a result of an increase in the local population linked with employment provision).
+	Positive	• Alternative has a positive effect on the likely determinants of good health in the region (including housing provision, employment opportunity, level of deprivation, physical activity, access to open space and recreational activities, improvements to environmental quality and community safety) • Alternative has a positive effect on health and wellbeing and acknowledges the health needs of specific groups in society (children, mums to be and the elderly). • Alternative may support the provision of healthcare facilities (i.e. as a result of an increase in the local population linked with employment provision).
0	No (neutral effects)	• Alternative has no observable effects on health and wellbeing of regional communities.

Effect	Description	Illustrative Guidance
-	Negative	• Alternative has a negative effect on the likely determinants of good health in the region (including housing provision, employment opportunity, level of deprivation, physical activity, access to open space and recreational activities, improvements to environmental quality and community safety) • Alternative has a negative effect on health and wellbeing and acknowledges the health needs of specific groups in society (children, mums to be and the elderly). • Alternative results in some nuisance and/or disruption to communities, such that some complaints could be expected
--	Significant negative	• Alternative has a significant negative effect on the likely determinants of good health in the region (including housing provision, employment opportunity, level of deprivation, physical activity, access to open space and recreational activities, improvements to environmental quality and community safety) • Alternative has a significantly negative effect on health and wellbeing and acknowledges the health needs of specific groups in society (children, mums to be and the elderly). • Alternative causes statutory nuisance or a sustained and significant nuisance and/or disruption to communities.
?	Uncertain	• From the level of information available the impact that the alternative would have on this objective is uncertain.

3.7 Assessment of Significant Effects of Retention, Revocation and Partial Revocation

Table 3.5 summarises the significant effects identified in the detailed assessment of RPG10 policies against the health topic.

Table 3.5 Significant effects against the Health topic

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
EN4 Retention	++	++	++	This policy requires local authorities, developers and other agencies to work together to improve the quality of the built environment including through the provision of open spaces and design and layout solutions that take account of public health, crime prevention and community safety. RES Regional Priority 3B 'Promote and enhance what is best about the region' reflects this policy in seeking to enhance environmental quality in order to raise the profile and image of the South West. In consequence, retention has been assessed as having a significant positive effect against the health topic.

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
EN4 Revocation	++	++	++	Achieving quality in the built environment is one of the core principles of the planning system, as set out in the NPPF (see Section 7). Taking into account the policies in the NPPF and the fact that RPG10 has been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10) it is expected that revocation will have similar significant positive effects against the health topic as retention.
EN5 Retention	++	++	++	This policy requires development plans to support/facilitate the reconfiguration and modernisation of local health services, as set out in Health Improvement and Modernisation Plans (HIMPs) which are understood to have been superseded. Nonetheless, it is assumed that the policy would continue to provide a vehicle for the coordination of the land use implications of health priorities at the regional/sub-regional scale which, together with requiring local authorities to have regard to health impacts arising from developments and supporting the provision of health care facilities (including within rural areas), is expected to have a significant positive effect in relation to human health. The policy also requires that crime prevention is considered in the design of new development which will generate positive effects in relation to human health whilst the encouragement of new facilities on sites that are well served by public transport and accessible on foot or by cycle should support healthy lifestyles (by encouraging walking or cycling) and reduce emissions to air (by reducing the need to travel by car). In consequence, retention has been assessed as having a significant positive effect against the health topic.
EN5 Revocation	++	++	++	Policy EN5 has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10). The principles set out at paragraph 17 of the NPPF include that planning should take account of and support local strategies to improve health, social and cultural wellbeing for all, and deliver sufficient community and cultural facilities and services to meet local needs. With specific regard to rural areas, paragraph 28 also stipulates that local plans should promote the retention and development of local services and facilities whilst paragraph 70 states that planning policies and decisions should prevent the loss of facilities, support their modernisation and adopt an integrated approach to the location of housing, economic development and facility/service provision. In consequence, revocation has been assessed as having the same positive benefits as retention.
TCS2 Retention	++	++	++	This policy requires local authorities and other bodies to protect existing open space and recreational facilities and identify opportunities for new cultural, leisure and community sports facilities. This is likely to have a significant positive effect for human health by supporting healthy lifestyles. In consequence, retention has been assessed as having a significant positive effect against the health topic.
TCS2 Revocation	++	++	++	Policy TCS2 has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10) and therefore there is not expected to be any change in effects over the short term. The NPPF sets out policies to deliver the social, recreational and cultural facilities and services the community needs (Paragraph 70). The NPPF states that local planning authorities should plan positively for the provision and use of shared space and community facilities (such as sports venues and cultural buildings) to enhance the sustainability of communities and residential environments and avoid the loss of valued facilities. Policies in the NPPF also seek to promote and conserve cultural heritage,

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				designated landscapes and green infrastructure, which also contribute to the delivery of significant benefits to the human health. Taking into account the fact that Policy TCS2 has already been put into effect, the provisions of national policy set out in the NPPF and the high level nature of the policy, revocation is expected to generate similar significant positive effects against the health topic as retention.

3.7.1 Effects of Revocation

Following revocation national planning policy will still be applicable including paragraph 156 of the National Planning Policy Framework which identifies the strategic priorities that local authorities must consider when making local plans including the provision of health, security, community and cultural infrastructure and other local facilities. However, it will be for local authorities to establish the right level of provision for their area over a period of about 15 years taking into account longer term requirements.

The “duty to co-operate” will play a key role in enabling local authorities to proactively and positively address health related issues in their local area. It is anticipated that local authorities will co-operate with the local National Health Service and neighbouring local authorities such that in the long-term significant benefits are still anticipated to occur given the overall direction of development proposed will need to have regard to the Framework, specifically the five ‘guiding principles’ of sustainable development one of which is ensuring a strong, healthy and just society.

3.7.2 Effects of Partial Revocation

The effects of partial revocation concern either:

- Revoking all the quantified and spatially specific policies (for instance where a quantum of development, land for development or amounts of minerals to be extracted or waste disposal is allocated to a particular location in the region) and retaining for a transitional period the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period all the spatially specific policies where a quantum of development or land for development is allocated to a particular location in the region and revoking the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period policies, ambitions and/or priorities, the revocation of which may lead to likely significant negative environmental effects.

There were no likely significant effects on health associated with the revocation or retention of the quantitative and spatially specific policies as no quantitative policies were identified in the assessment as having likely significant effects on this topic.

The assessment has also found that there are no policies in RPG10 where the act of revocation will cause a significant negative effect whilst retaining the same policy will maintain a significant environmental benefit.

3.7.1 Effects of Retention

By setting out the overarching direction within which local plans should be developed, retention of the Regional Strategy would have significant benefits in the short to long term as the general development principles relating to improving access to health facilities, improving environmental quality and access to open space, and providing affordable housing will help to engender good health in a region which includes some areas of social deprivation.

3.8 Mitigation Measures

Given that all likely significant effects identified would be positive, no mitigating measures are proposed for this topic.

4. Soil and Geology

4.1 Introduction

The overview of plans and programmes and baseline information contained in this section provides the context for the assessment of potential effects of revoking the Regional Strategy on soil, geology and land use. Information is presented for both national and sub-regional levels.

Soil and geology within this context is concerned with important geological sites, and the contamination of soils. Land use in this context is concerned with the effective use of land i.e. by encouraging the reuse of land that has been previously developed (brownfield land) as well promoting sustainable patterns of land use e.g. in relation to the protection of open spaces and green infrastructure.

There are links between the soil and geology topic and other topics in the SEA, including material assets.

4.2 Summary of Plans and Programmes

4.2.1 International

The ***European Thematic Strategy on Soil Protection (2006)*** sets out the European Commission's strategy on soils and includes a proposal for an EU wide ***Soils Directive***. The overall objective of the strategy is the protection and sustainable use of soil, based on the following guiding principles:

- preventing further soil degradation and preserving its functions;
- when soil is used and its functions are exploited, action has to be taken on soil use and management patterns;
- when soil acts as a sink/receptor of the effects of human activities or environmental phenomena, action has to be taken at source; and
- restoring degraded soils to a level of functionality consistent at least with current and intended use, thus also considering the cost implications of the restoration of soil.

The ***EU Waste Incineration Directive 2000/76/EC*** aims to introduce measures to prevent or reduce as far as possible air, water and soil pollution caused by the incineration of waste, as well as the resulting risk to human health. The measures set out under the Directive include a prior authorisation requirement for incineration and co-incineration plants, and emission limits for certain pollutants released to air or to

water. The requirements of the Directive have been developed to reflect the ability of modern incineration plants to achieve high standards of emissions control.

The ***EU Integrated Pollution, Prevention and Control (IPPC) Directive 2008/1/EC*** defines the obligations to which industrial (including waste management) and agricultural activities with a high pollution potential must comply, through a single permitting process. It sets minimum requirements to be included in all permits, particularly in terms of pollutants released. The aim of the Directive is to prevent or reduce pollution being released to the atmosphere, water and soil, as well as reducing the quantities of waste arising from industry and agriculture. In order to gain an IPPC permit, operators must demonstrate that they have systematically developed proposals to apply the 'Best Available Techniques' (BAT) to pollution prevention and control and that they address other requirements relevant to local factors.

The European Commission reviewed European legislation on industrial emissions in order to ensure clearer environmental benefits, remove ambiguities, promote cost-effectiveness and to encourage technological innovation. The review led to the commission proposing and adopting a recast ***Directive on Industrial Emissions (IED) 2010/75/EU*** which came into force on 6 January 2011.

A number of other European Directives contribute indirectly to soil protection including on ***Habitats 92/43/EEC***, ***Air 2008/50/EC***, ***Water 2000/60/EC*** and ***Nitrates 91/676/EEC***.

The ***World Summit on Sustainable Development (2002)*** in Johannesburg proposed broad-scale principles which should underlie sustainable development and growth including an objective on greater resource efficiency. Reusing previously developed land is a good example of resource efficiency of land.

The conservation of resources is one of the underlying objectives of the ***European Spatial Development Perspective (ESDP) (1999)*** the framework for policy guidance to improve cooperation among community sectoral policies. There also exists a range of legislation in relation to resources.

UK

The ***Environmental Protection Act 1990*** defines within England, Scotland and Wales the legal framework for duty of care for waste, contaminated land and statutory nuisance.

The ***Environment Act 1995*** seeks to protect and preserve the environment and guard against pollution to air, land or water. The Act adopts an integrated approach to environmental protection and outlines where authorisation is required from relevant authorities to carry out certain procedures as well as outlining the responsibilities of the relevant authorities. The Act also amends the Environmental Protection Act 1990 with regard compulsory remediation of contaminated land. The Environmental Protection Act 1990 was also modified in 2006 to cover radioactivity, and then a further modification was made in 2007 to cover land contaminated with radioactivity originating from nuclear installations.

The ***Wildlife and Countryside Act 1981*** allows the designation of SSSIs for sites with geological importance.

England

The ***Contaminated Land (England) Regulations 2006*** sets out provisions relating to the identification and remediation of contaminated land. It identifies sites requiring regulation as 'special sites' and includes land contaminated by radioactive substances to this classification.

In June 2011, the Government outlined its vision for England's soils in the ***Natural Environment White Paper (NEWP)***. This set a clear target that by 2030 all of England's soils will be managed sustainably and degradation threats tackled successfully, in order to improve the quality of soil and to safeguard its ability to provide essential ecosystem services and functions for future generations. As part of this vision, the Government committed to undertaking further research to explore how soil degradation can affect the soil's ability to support vital ecosystem services; and how best to manage lowland peatlands in a way that supports efforts to tackle climate change. This will inform our future policies and the direction of future action towards 2030.

The Government has recently reviewed the contaminated land regime in England for the first time since its introduction in 2000. Following the review of the contaminated land regime including public consultation, revised ***Statutory Guidance has now been issued under Part 2A of the Environmental Protection Act 1990***. This revised Statutory Guidance while still taking a precautionary approach, allows regulators to make quicker decisions about whether or not land is contaminated under Part 2A preventing costly remediation operations being undertaken unnecessarily. It also offers better protection against potential health impacts by concentrating on the sites where action is actually needed.

The ***National Planning Policy Framework*** (NPPF) states that the planning system should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes, geological conservation interests and soils; preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by unacceptable levels of soil pollution or land instability; and remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate (paragraph 109). Local planning authorities should take into account the economic and other benefits of the best and most versatile agricultural land. Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that of a higher quality (paragraph 112). The NPPF also states that planning policies should encourage the effective use of land by reusing land that has been previously developed, provided that it is not of high environmental value (paragraph 111). The NPPF also reaffirmed the Government's commitment to maintaining Green Belts. It states that local planning authorities with Green Belts in their area should establish Green Belt boundaries in their local plans which set out the framework for Green Belt and settlement policy. Once established, Green Belt

boundaries should only be altered in exceptional circumstances.

4.2.2 South West Region

Our Environment Our Future: The Regional Strategy for the South West Environment 2004 – 2014 (2004) seeks to generate awareness of the importance of the South West environment including with respect to geology and soils. It identifies priorities for protecting and enhancing the environment for the benefit of current and future generations; highlights issues for the region and provides a framework for action. The specific aims identified within the Strategy include:

- Protect and enhance biodiversity and geological features across urban, rural, coastal and marine environments; and
- Protect and improve the quality of the region's air, soils and water.

4.3 Overview of the Baseline

4.3.1 National

UK - Soils and Geology

The geology of the UK is diverse and has resulted in over 800 soil types. As a broad overview the following rock types exist in a progression from North West to South East (predominant rock types): Tertiary Volcanic Rocks; Crystalline Rock of Pre-Cambrian and later age; Lower Carboniferous to Cambrian; Triassic and Permian; Early Precambrian and Devonian; Jurassic; Cretaceous; Tertiary and Marine Pleistocene; and finally a return to Cretaceous.[58]

The quality of the land across the UK varies, with the best and most versatile agricultural land generally situated in the lowland and valley areas of England. Due to the topography and terrain, much of Scotland and Wales is classified as lower grade land. An estimated 21% of all farmland in England is Grade 1 and 2 land, with a similar percentage graded as sub-grade 3a land. These grades are the best and most versatile land grades as classified under the Agricultural Land Classification System.[59]

The UK has a diversity of mountain ranges and flood plains. In England, the southern part of the country is predominantly lowland, with mountainous terrain north-west of the Tees-Exe line (the Lowland-Upland divide across England), which includes the Cumbrian Mountains of the Lake District, the Pennines and

[58] Agricultural Land Classification, protecting the best and most versatile agricultural land, Natural England, January 2009
[59] England's geology, Natural England, http://www.naturalengland.org.uk/ourwork/conservation/geodiversity/englands/default.aspx

limestone hills of the Peak District, Exmoor and Dartmoor. [60]

There are an estimated 2,050 geological SSSIs in UK.[61, 62, 63]

Across the UK there are also a number of non-statutory geological and geomorphological sites designated at a local level, i.e. often known as Local Geological Sites (formerly Regionally Important Geological and Geomorphological Sites (RIGS)). There are over 50 Local Sites groups in the UK[64].

In 2005 there was estimated to be around 413,906 hectares of land affected by industrial activity in England and Wales which may be contaminated, (around 2% of the land area in England and Wales)[65].

UK - Land Use

The UK covers an area of 2,472,900ha (242,514km^2). England comprises the largest land area in the UK, covering an area of 13,028,100ha (130,281km^2). The smallest land area in the UK is Northern Ireland, which covers an area of 1,357,600ha (13,576km^2).

Average population density of UK is 247 people per km^2.

Table 4.1 shows land cover in the UK as it stood in 2007 and shows that arable and horticulture and improved grassland are the most common land cover types in the UK, constituting 20.4% and 19.9% of total land area in the UK respectively.

Table 4.1 Estimated Area of Broad Habitats in the UK in 2007[66]

Land Type	'000 hectares	% land area
Broadleaved, mixed and yew woodland	1406	6.2
Coniferous woodland	1319	5.8

[60] State of the Environment Report 2008, Natural England, 2008, http://naturalengland.etraderstores.com/NaturalEnglandShop/NE85
[61] Geoconservation Sites, http://www.geoconservation.com/sites/sssi.htm
[62] Natural England RIGS, http://www.naturalengland.org.uk/ourwork/conservation/designatedareas/lgs/default.aspx
[63] The Scottish Soil Framework, Scottish Government, May 2009, http://www.scotland.gov.uk/Publications/2009/05/20145602/13
[64] Geoconservation Sites, http://www.geoconservation.com/sites/sssi.htm
[65] Indicators for Land Contamination, Science Report SC030039/SR, Environment Agency, August 2005
[66] ONS (2009) http://www.statistics.gov.uk/STATBASE/Expodata/Spreadsheets/D5325.xls (accessed 22.10.2009)

Land Type	'000 hectares	% land area
Linear features	496	2.2
Arable and horticulture	4608	20.4
Improved grassland	4494	19.9
Neutral grassland	2176	9.6
Calcareous grassland	57	0.3
Acid grassland	1589	7.0
Bracken	260	1.1
Dwarf shrub heath	1343	5.9
Fen, Marsh, Swamp	392	1.7
Bog	2232	9.9
Standing open waters[1]	204	0.9
Rivers and streams[1]	58	0.3
Montane	42	0,2
Inland rock	84	0.4
Built-up areas and gardens	1323	5.8
Other land	113	0.5
Unsurveyed land[2]	522	2.3
Total[3]	**22627**	

England - Soils and Geology

In England there was estimated to be around 307,672ha of land that may be contaminated. A total of 659 sites had been determined as 'contaminated land' in England by the end of March 2007. At the time

of reporting, no site has been determined as contaminated land due to radioactivity [67].

Natural England (2008) report that there are 1,214 SSSIs designated for their geodiversity features covering 1,704 Geological Conservation Review (GCR) sites (which identified nationally important features of geological interest). Many SSSIs have more than one GCR feature and some GCR features extend over more than one SSSI, giving a total of 1,735 SSSI-GCR combinations, or 'geo-features'. The proportion of GCRs in favourable/recovering status varied between 76-94% depending on its category of GCR (each category is reported separately).

Within England, 87.7% of the land area is classed as agricultural land[68]. Of the remainder, 5% is non agricultural and 7.3% is urban. Of the 87.7% of land classed as agricultural, 65.1% is classed as moderate or better.

There are no formal international designations for geodiversity sites equivalent to the SPA and SAC designations for biological features, although the geodiversity of the Dorset and East Devon Coast is recognised through designation as a World Heritage site.

England contains two Geoparks: the English Riviera in Devon and the North Pennines AONB. These are areas considered by the United Nations Educational, Scientific and Cultural Organisation (UNESCO) to be of international importance for geological heritage that should be safeguarded and sustainably managed and include strong local involvement. Two further areas in England (Abberley and Malvern Hills and the Cotswold Hills) identify themselves as Geoparks.

England – Land Use

The average population density of England is 385 people per km^2 [69].

Table 4.2 shows land cover in England as it stood in 2007 and highlights arable and horticulture and improved grassland as the most common land use covers (covering 30.4% and 21.7% of total land in England respectively).

[67] Dealing with contaminated land in England and Wales A review of progress from 2000-2007 with Part 2A of the Environmental Protection Act, Environment Agency, January 2009
[68] Agricultural land classification (ALC) Statistics from the digital 1:250,000 scale Provisional ALC map (www.magic.gov.uk)
[69] Office of National Statistics, http://www.statistics.gov.uk/geography/uk_countries.asp

Table 4.2 Land Cover in England in 2007[70]

England Land Cover 2007	'000 ha	% area
Broadleaved, Mixed and Yew Woodland	981	7.4
Coniferous Woodland	257	1.9
Boundary and Linear Features	353	2.7
Arable and Horticulture	4,002	30.4
Improved Grassland	2,856	21.7
Neutral Grassland	1,453	11.0
Calcareous Grassland	30	0.2
Acid Grassland	396	3.0
Bracken	91	0.7
Dwarf Shrub Heath	331	2.5
Fen, Marsh and Swamp	117	0.9
Bog	140	1.1
Standing Open Water and Canals	97	0.7
Rivers and Streams	29	0.2
Built-up Areas and Gardens	1,038	7.9
Other land	580	4.4
Unsurveyed Urban Land	428	3.5
TOTAL	13,180	100

The majority of land in England (around 72%) is in agricultural use. A further 8.6% is used for woodland and forestry. Whilst developed land accounts for around 10% of the total area, only a very small proportion of the land (1.14%) is occupied by domestic buildings (e.g. houses), with domestic gardens

[70] ONS (2009) http://www.statistics.gov.uk/STATBASE/Expodata/Spreadsheets/D5325.xls (accessed 22.10.2009)

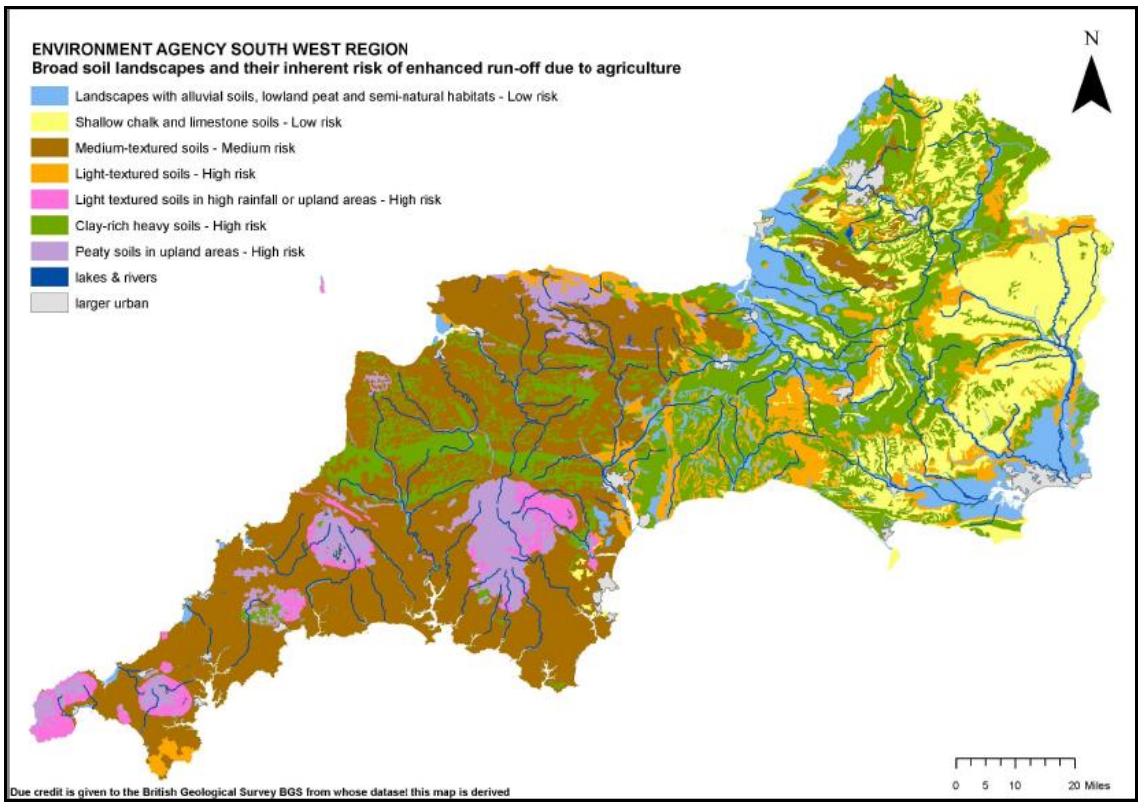
accounting for almost half of the 'developed area' (over 4% of the national land area). Roads account for around 2% and rail 0.14% of the total.

4.3.2 South West Region

Soils and Geology

The South West region has a varied mosaic of soil types with a prevalence of medium textured soils to the south and west of the region and clay-rich and shallow chalk and limestone to the east and north. Soils are important in terms of their ability to filter pollutants and reduce flood risk and in this context, the State of the South West 2011 report highlights that large areas of the South West's soils are vulnerable to becoming capped and sealed by heavy rain and compacted by inappropriate land work which may lead to increased flooding and water pollution. **Figure 4.1** highlights broad soil type across the region and the respective risk of enhanced run-off due to agriculture.

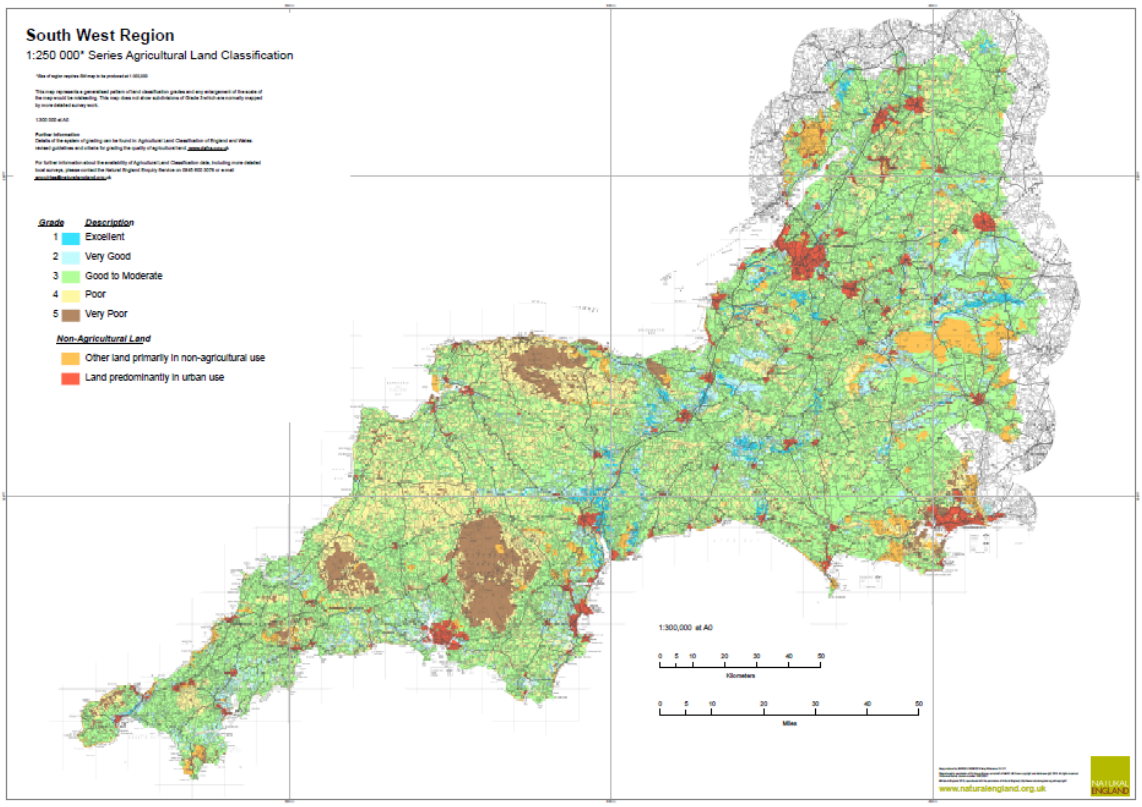
Figure 4.1 Soil Landscape and Risk of Enhanced Run-off due to Agriculture



Source: Environment Agency in South West Observatory (2011) State of the South West 2011, available from http://www.swo.org.uk/state-of-the-south-west-2011/environment/soils/ [Accessed June 2012]

Within the South West, 91.9% of land is classified as agricultural land and in terms of Agricultural Land Classification, the proportion of land classified as Good/Moderate (Grade 3) or better is greater than for England as whole (68.0% compared to 65.1%). However, the proportion of land in Grades 1 ('excellent') and 2 ('very good') is less (9.1% compared to 16.9%) whilst the proportion classified as 'poor' (Grade 4) or 'very poor' (Grade 5) is greater than the national average (23.9% compared to 22.5%)[71]. **Figure 4.2** shows agricultural land quality across the region.

Figure 4.2 Agricultural Land Quality in the South West



Natural England (2010) Agricultural Land Classification Map South West Region, available from

[71] MAGIC (2002) *Agricultural Land Classification*, available from http://magic.defra.gov.uk/datadoc/metadata.asp?dataset=2 [Accessed June 2012)

http://publications.naturalengland.org.uk/category/23033 [Accessed June 2012]

The nature of agricultural activity varies across the region. In part, this is due to variation in topography, soil quality and climate. In 2009, 50% (965,208ha) of all agricultural land in the South West was classified as permanent grassland, higher than the English average of 37%. Crops and bare fallow land made up the next highest category with 28% (528,304ha), compared to 43% nationally[72].

Land Use

Previously developed land (PDL) is defined as land that is or was occupied by a permanent structure (excluding agricultural or forestry buildings) and associated fixed surface infrastructure. In 2007, the South West had a total of 5,960ha of PDL that was unused or may be available for redevelopment, 44% of which was suitable for housing (see **Table 4.3**).

Table 4.3 Previously Developed Land Available for Redevelopment, 2007

Region	All PDL that is unused or may be available for redevelopment (ha)	Total area suitable for housing (ha)
North West	10,910	3,640
South East	8,990	4,580
Yorkshire & the Humber	9,110	3,030
East of England	6,890	4,180
East Midlands	6,360	2,460
South West	5,960	2,600
West Midlands	5,930	2,480
North East	4,030	1,420
London	3,930	2,130
England	62,130	26,510

Source: CLG (2008) Previously-developed land that may be available for development: England 2007

[72] South West Observatory (2011) State of the South West 2011, available from http://www.swo.org.uk/state-of-the-south-west-2011/environment/soils/ [Accessed June 2012]

In 2010, the proportion of dwellings built on PDL (excluding conversions) was 60% in the South West compared to 73% in England. This represents an increase of 11% on 2001 figures but is below the proportion of housing delivered on PDL in 2008 (72%)[73].

4.4 Environmental Characteristics of those Areas most likely to be Significantly Affected

4.4.1 National

UK - Soil and Geology

Human activity has left a legacy of soil contamination and pollution that pose a risk to water quality, ecosystems and human health as well as to land and property value.

- Significant areas across the UK carry a burden of contamination from industrial activity, although this is progressively being cleaned up as sites are redeveloped. Whilst contamination is remediated during redevelopment, the process can be expensive.
- Disturbance of contaminated sites carries the risk of pollution pathways being created or re-opened for any existing ground contamination.
- There is currently increasing pressure on rural and agricultural land from developers as urban areas expand. Future population growth leading to an increase in the need for housing and related urban development infrastructure will put more pressure on protected land including important geological sites.
- Soils in England continue to be degraded by human actions including intensive agriculture, historic levels of industrial pollution and urban development, making them vulnerable to erosion (by wind and water), compaction and loss of organic matter[74]. Effects include:
    - Soil erosion by wind and rain: erosion affects both the productivity of soils but also water quality and aquatic ecosystems.
    - Compaction of soil reduces agricultural productivity and water infiltration, and increases

[73] South West Observatory (2012) Changing State of the South West Environment 2012, available from http://www.swo.org.uk/sotsw2012/planning/ [Accessed June 2012]

[74] http://www.defra.gov.uk/food-farm/land-manage/soil/

flood risk through higher levels of run-off.

- Organic matter decline: the loss of soil organic matter reduces soil quality, affecting the supply of nutrients and making it more difficult for plants to grow, and increases emissions to the atmosphere.

As the climate (including temperature and rainfall patterns) changes in the future, it is likely that soils have the potential to be further degraded, both as a result of the direct and indirect impacts of climate change, for example as land managers adapt their practices and the crops that they grow. Climate change and loss of organic matter are the most significant threats to Scottish soils[75]. The effect of industry, agricultural practices, forestry and climate change upon soils, particularly carbon rich peat soils, is also a key issue. Key pollutants include chemicals, oil or waste. Organic waste, including sewage sludge, is one of the main sources of heavy metal contamination of soils from human activities[75].

In Wales the small proportion of land that is classified as 'best and most versatile' agricultural land needs to be conserved. There is also a need to protect soils in uplands and wetlands which contain high amounts of carbon and are vulnerable to acidification[76].

The main pressures in Northern Ireland are development, infrastructure, mineral extraction industries, and tourism. A major problem in farmland is the over-accumulation of phosphorus in the soil, due to agricultural fertilisers. The intensification and expansion of agriculture is a key pressure on soil quality and erosion[77].

UK - Land Use

Of UK land 5.6% is currently classed as 'built up.' Development pressure remains a constant factor in parts of the country, and it is not expected that previously-developed land will be able to fully deliver the UK's future needs. This will continue to place development pressures in rural areas and the urban fringe.

When greenfield land is used for development, it is likely to result in the permanent loss of that land from other uses such as agriculture. There are similar pressures to build across each of the UK administrations, however the details differ slightly between each.

The 2008 State of the Natural Environment report[78] noted that within rural England, the area of

[75] State of the environment and trends – Scotland, http://www.seaguidance.org.uk/11/State-of-the-Environment.aspx
[76] Environment Strategy for Wales, Welsh Assembly Government, 2006, http://wales.gov.uk/topics/environmentcountryside/epq/envstratforwales/strategy/?lang=en
[77] Planning and Land Contamination, Northern Ireland Environment Agency, http://www.ni-environment.gov.uk/land-home/land-quality.htm
[78] Natural England (2008) http://www.naturalengland.org.uk/publications/sone/default.aspx

developed land had increased by about 4% since 1990, largely by using agricultural land and that between 1998 and 2003 substantial greenfield development has occurred near many urban areas, notably at key growth points, but also in former coalfield belts. It said the pace of development within England was increasing, particularly for housing in response to demand and a historic shortfall in housing provision and that this was expected to have a dramatic effect on a large part of central and southern England though the series of the then identified Growth Areas and Growth Points.

4.4.2 South West Region

Research[79] into the degradation of soil structure in the South West has found that of over 2,500 sites, only 11% had good soil structure throughout the soil profile whilst almost 50% are degraded and require soil structure remediation. Soil structural degradation varies greatly between landscapes, with some landscapes being particularly vulnerable and some relatively resilient to land management practices. Those with the most damage are landscapes dominated by light-textured soils (sandy, silty and light loamy soils) with almost 60% of sites showing severe or high levels of degradation enough to cause enhanced runoff. The shallow chalk and limestone soils are the least damaged with less than 14% of sites showing severe or high levels of degradation. Poor land management in conjunction with degraded soil can lead to erosion and run-off which can cause flooding, water pollution and the degradation of river habitats.

The population and growth centres in the South West generally lie to the eastern half of the region. This area tends to enjoy best and most versatile agricultural land (particular in the areas of Wiltshire, Sedgemoor and Exeter) which may be under threat from future development.

Climate Change will also have a detrimental impact on soil structure in the region especially for sandy, silty and light loamy soils which are detrimentally affected by enhanced runoff.

4.5 Likely Evolution of the Baseline

4.5.1 National

UK - Soils and Geology

There is little data on the long term trends associated with soil. In 2010, the Foresight Project completed the Land Use Futures Project to take a long-term view of all types of land use to analyse future land use

[79] Environment Agency in South West Observatory (2011) State of the South West 2011, available from http://www.swo.org.uk/state-of-the-south-west-2011/environment/soils/ [Accessed June 2012]

challenges through looking at pressures and trends and developing scenarios and models, including the consideration of soil issues[80]. The Natural Environment White Paper commits the Government to undertake a significant research programme over the next four years to explore how soil degradation can affect the soil's ability to support vital ecosystem services such as flood mitigation, carbon storage and nutrient cycling; and how best to manage lowland peatlands.

There is a steady loss of soils to development, contaminated sites, damage by muddy floods and water pollution by silt and fertilisers. Continued pressure of development will result in the loss of productive soil, although it is also likely to lead to the remediation of contaminated soils. As more brownfield land is developed there may be more pressure for development on greenfield land which is likely to increase loss of soil resources. Climate change means that the UK is likely to see an increase in rainfall intensity which could lead to increased soil loss due to erosion.

However, the increase in public and policy awareness regarding geological SSSI sites and Geoparks may lead to an increase in the number of sites protected and managed. As quarries come to the end of their working lives there is potential for their identification and conservation as geologically important sites.

As there are now more stringent statutory controls on land contamination and remediation, increased areas of historic contamination are being remediated and fewer areas are being left in a contaminated state following decommissioning of commercial and industrial sites. Major remediation, regeneration and development projects, such as the Olympic Park and Thames Gateway developments in London are likely to further decrease the total area of contaminated land within the UK.

There are a number of European directives that are either currently being implemented or are under discussion that may influence the way in which land contamination is managed in the future (i.e. the Environmental Liabilities, Soil, Water, Groundwater and the Waste Framework Directives). The implementation of these regimes into UK legislation is likely to affect how contaminated land is dealt with[81].

UK – Land Use

The estimated broad habitat type in the UK and how it has changed from 1984 to 2007 was calculated by the Office of National Statistics[82] and is shown in **Table 4.4**. It shows that the area of land cover

[80] http://www.bis.gov.uk/assets/foresight/docs/land-use/luf_report/8614-bis-land_use_futures_exec_summ-web.pdf

[81] Dealing with contaminated land in England and Wales A review of progress from 2000-2007 with Part 2A of the Environmental Protection Act, Environment Agency, January 2009

[82] http://www.statistics.gov.uk/STATBASE/Expodata/Spreadsheets/D5325.xls (accessed 22.10.2009)

under arable and horticulture has decreased by 9.1% between 1998 and 2007. The area of grassland land cover has generally increased with improved grassland increasing by 5.7%. Built-up areas and gardens have increased by 3.4% between 1998 and 2007.

Table 4.4 Estimated Area ('000 ha) of Broad Habitats in the UK in 1984, 1990, 1998 and 2007

Land Type	1984	1990	1998	2007	% change between 1998 and 2007
Broadleaved, mixed and yew woodland	1317	1343	1328	1406	5.9
Coniferous woodland	1243	1239	1386	1319	-4.8
Linear features	491	581	511	496	-2.9
Arable and horticulture	5283	5024	5067	4608	-9.1
Improved grassland	5903	4619	4251	4494	5.7
Neutral grassland	467	1669	2007	2176	8.4
Calcareous grassland	75	78	61	57	-6.6
Acid grassland	1476	1821	1503	1589	5.7
Bracken	439	272	315	260	-17.5
Dwarf shrub heath	1388	1436	1299	1343	3.4
Fen, Marsh, Swamp	428	427	426	392	-8.0
Bog	2303	2050	2222	2232	0.5
Standing open waters[1]	284	200	196	204	4.1
Rivers and streams[1]	70	70	65	58	-10.8
Montane	41	n/a	41	42	2.4
Inland rock	38	76	111	84	-24.3
Built-up areas and gardens	1268	1266	1279	1323	3.4
Other land	n/a	57	107	113	n/a
Unsurveyed land[2]	n/a	522	522	522	n/a
Total[3]	**22514**	**22632**	**22601**	**22627**	

It is not known whether the decrease in arable and increase in improved grassland is likely to continue at the same rate in the future although it does seem likely that the extent of built up areas will continue to increase as some development will inevitably take place on greenfield land.

The area land occupied by agricultural holdings and the area in actual use for agriculture has changed very little across the UK in the past 25 years. The total area of land in agricultural holdings in the UK fell on average by about 15,400ha per annum between 1983 and 2008. This was equivalent to a rate of 0.09% per annum, or about 1% per decade, although over the latter 10 years of that period the reduction in land area was minimal[83].

The clearest trend in land use change in the UK over the past quarter of a century has been the conversion of land from agriculture to forestry and woodland. Forestry Commission estimates of the area of forest and woodland cover in the UK imply an average annual net increase of 25,000ha since 1980, equivalent to 1.05% per year. There seems to have been some reduction in the rate of growth from 2000 to 2008 with the net increase in tree cover in this period being about 7,000ha per annum (or 0.24%). These recent patterns of woodland expansion continue a very clear upwards trend, which has led to a doubling of the area of UK woodland since World War II.

New planting has predominantly responded to subsidy and has involved the expansion of small broadleaved woodlands within agricultural holdings. The average annual increase in woodland on farms (14,500ha per annum) accounts for more than half of the net increase in the wooded area as a whole. The area of woodland within agricultural holdings has thus more than doubled since the early 1980s.

In 2008, there was an estimated 63,750ha of previously-developed land in England, up from 2.6% from 62,130ha in 2007. An estimated 32,400ha of previously-developed land was vacant or derelict, 51% of the total. The remaining 31,350ha was in use but with potential for redevelopment[84]. The conversion of previously undeveloped land accounted for about 5,000ha per annum between 2000 and 2006. This is equivalent to 0.04% of England's land area, and about one-third of the average annual flow of 15,700ha estimated for the period 1945-1975. Of all greenfield land developed between 2000 and 2006, roughly 57% was for residential uses, with 20% being for industrial, commercial and related activities, and the remaining 23% for other developed uses, predominantly transport.

England - Soils and Geology

The Natural Environment White Paper (2011) established an ambition that by 2030 all of England's soils will be managed sustainably and degradation threats tackled successfully, in order to improve the quality of soils and to safeguard their ability to provide essential ecosystem services and functions for future generations.

[83] Foresight Land Use Futures Project (2010). Final Report.

[84] Previously Developed Land that may be Available for Development: Results from the 2008 National Land Use Database of Previously-Developed Land in England, Homes and Communities Agency, February 2010, http://www.homesandcommunities.co.uk/nlud-pdl-results-and-analysis.htm

England - Land Use

In 2008, there was an estimated 63,750ha of previously-developed land in England, up from 2.6% from 62,130ha in 2007. This reversed a trend that occurred in the previous five years, where the total amount of previously-developed land in England declined by 6%. Between 2002 and 2007, the amount of vacant and derelict land declined by 17.5% while land currently in use with potential for redevelopment increased by 12%[85].

There have also been changes in the changes to land use related to broad habitat types. Between 1998 and 2007 in England there was a significant increase in the area of Broadleaved Woodland (5.8%), Neutral Grassland (12.6%), Dwarf Shrub Heath (15.1%) and Standing Open Water and Canals (5.3%). The increase in the area of Dwarf Shrub Heath between 1998 and 2007 followed a decrease in area between 1990 and 1998. The increase in the area of Standing Open Water and Canals6 recorded in England between 1998 and 2007 continued the increases recorded by Countryside Survey since 1990[86].

On the other hand, there was a significant decrease in the area of Arable and Horticulture Broad Habitat (8.8%) in England across the same period. No statistical change in extent was detected in the Coniferous Woodland, Improved Grassland, Bracken, Bog, Fen, Marsh and Swamp and Calcareous Grassland Broad Habitats in England between 1998 and 2007.

4.5.2 South West Region

Although the proportion of new development on previously developed land (PDL) is lower in the South West than for the rest of England, there is still 2,600ha of PDL suitable for housing. RPG10 seeks to direct new development to the 11 Principal Urban Areas of the region and aims for greater self-containment in towns, helping ameliorate the pressures of new development by encouraging the re-use of PDL sites.

The South West is the most rural of all England's regions. RPG10 Policy SS20 states that local authorities should conserve the region's best and most versatile agricultural land and associated soils. It continues on to note that land of a poorer quality should be used in preference to higher quality.

RPG10 Policy SS4 also states that the broad extent of Green Belts in the South West is appropriate, and should be maintained. However, it identifies that strategic reviews of Green Belt boundaries are needed to meet regional development needs at the most sustainable locations.

[85] Communities and Local Government 2008
[86] Countryside Survey for England (2007)
http://www.countrysidesurvey.org.uk/sites/default/files/pdfs/reports2007/england2007/CS-England-Results2007-Chapter02.pdf

Overall, it is expected that some development on greenfield land and in the Green Belt will occur in order to meet the region's housing and other land use requirements.

4.6 Assessing significance

Table 4.5 sets out guidance utilised during the assessment to help determine the relative significance of potential effects on the soil and geology. It should not be viewed as definitive or prescriptive; merely illustrative of the factors that were considered as part of the assessment process.

Table 4.5 Approach to determining the significance of effects on geology and soils

Effect	*Description*	*Illustrative Guidance*
++	Significant positive	• Alternative would restore and significantly improve soil quality and land stability to conditions beyond current levels and remove all soil contamination so that soil functions and processes would be significantly improved in the long term. • Alternative would minimise, and protect from irreversible damage high quality agricultural land (i.e. best and most versatile, grades 1, 2, and 3a of the Agricultural Land Classification). • Alternative would have a significant and sustained positive impact on a national designated geological site. • Alternative would seek to minimise use of any undeveloped land, and look to preferentially reclaim and redevelop significant areas of previously-developed or derelict land.
+	Positive	• Alternative would cause minor improvements in soil quality and land stability so that soil functions and processes would be improved in the long term. • Alternative would reduce any potential damage to high quality agricultural land (i.e. best and most versatile, grades 1, 2, and 3a of the Agricultural Land Classification). • Alternative will reduce any potential hazard associated with existing soil contamination. • Alternative would have a minor and temporary positive impact on a national designated geological site. • Alternative would seek to preferentially make use of previously developed land; however, would allow for development of undeveloped.
0	No (neutral effects)	• Alternative would not cause damage or loss to soil such that soil function and processes will not be affected. • Alternative would not affect land stability. • Alternative would not involve significant loss of any undeveloped or developed land.

Effect	Description	Illustrative Guidance
-	Negative	• Alternative would lead to an increase in pollutant discharges to soil, however these would be less than permitted limits, such that there will be minor short term increases in land contamination. • Alternative would cause minor increases in potential hazards associated with existing soil contamination. • Alternative would cause a temporary loss of soil so that soil function and processes would be negatively affected in the short/medium term. • Alternative would cause minor short term negative effects on geological conservation sites/important geological features or soils of high importance. • Alternative would lead to the majority of development using undeveloped land or land that has reverted to a 'wild' state.
--	Significant negative	• Alternative would lead to a statutory limit being reached or exceeded in relation to land contamination, such that there would be a major and sustained increase in land contamination. • Alternative would cause major and sustained increases in potential hazards associated with existing soil contamination. • Alternative would cause considerable loss of soil quality, such that soil function and processes will be irreversibly and significantly affected. • Alternative would cause a substantial and permanent loss of or damage to soil of high importance and/or designated geological conservation sites/important geological features. • Alternative would not develop derelict or previously-developed land, but would lead to development of significant areas of undeveloped land/ land that has reverted to a 'wild' state.
?	Uncertain	• From the level of information available the impact that the alternative would have on this objective is uncertain.

4.7 Assessment of Significant Effects of Retention, Revocation and Partial Revocation

Table 4.6 summarises the significant effects identified in the detailed assessment of RPG10 policies against the soil and geology topic.

Table 4.6 Significant Effects against the Soil and Geology Topic

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
EN1 Retention	++	++	++	This policy strongly supports the protection and enhancement of the region's landscapes and biodiversity including internationally and nationally designated sites It stipulates that local authorities and other agencies in their plans, policies and programmes should develop policies for the protection of national, regional and local nature conservation interests and promotion of the maintenance, restoration and expansion of depleted and vulnerable resources.

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				RES Regional Priority 3B 'Promote and enhance what is best about the region' reflects this policy in seeking to maintain and enhance the region's environmental assets and to use them to raise the profile and image of the South West. Although the policy does not specifically refer to geology and soils, it is expected that the conservation and enhancement of the region's environmental assets including designated sites will have a significant positive effect against the soil and geology topic. In this respect, it is noted that the South West contains over a third of the total number of geo-features (SSSIs and Geological Conservation Review features) in England.
EN1 Revocation	++	++	++	The legal requirement for local planning authorities to ensure that internationally and nationally designated sites are given the strongest level of protection and that development does not have adverse effects on the integrity of sites of European or international importance for nature conservation would be unchanged by revocation. This policy has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10) and, further, superseded by local policies reflecting policy/legislation published since RPG10. Paragraph 109 to 119 of the NPPF will apply concerning the protection and enhancement of the natural and local environment. This includes recognising the wider benefits of ecosystem services. Paragraph 109 in the NPPF states that the planning system should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes, geological conservation interests and soils and preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil (and other types) of pollution. Paragraph 117 states that planning policies should aim to prevent harm to geological conservation interests. In consequence, revocation has been assessed as having the same positive benefits as retention.
SS20 Retention	++	++	++	This policy relates to rural land uses including at the urban fringe. Amongst other elements, it states that local plans should conserve the region's best and most versatile agricultural land and support agri-environmental measures. The policy also seeks to protect woodland and supports community woodland projects which can help to protect/maintain soil quality. RES Regional Priority 3B 'Promote and enhance what is best about the region' reflects this policy in seeking to maintain and enhance the region's environmental assets and to use them to raise the profile and image of the South West. In consequence, retention has been assessed as having a significant positive effect against the soil and geology topic.
SS20 Revocation	++	++	++	Effects associated with the revocation of Policy SS20 are expected to be similar to those identified in relation to its retention above. This reflects the fact that most local plans have been in place since RPG10 was published and are therefore expected to accord with the provisions of the policy (34 local authorities have plans in place which are in general conformity with RPG10). Paragraph 109 in the NPPF states that the planning system should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes, geological conservation interests and soils and preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil (and other types) of pollution. The NPPF requires local planning authorities to take into account the economic and other benefits of the best and most versatile agricultural land (paragraph 112). Where significant development of agricultural land is demonstrated to be necessary, local planning authorities should seek to use areas of poorer quality land in preference to that

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				of a higher quality. In consequence, revocation has been assessed as having the same positive benefits as retention.

4.7.1 Effects of Revocation

The main adverse impacts on soil are a result of development. Assuming that the level of growth to be accommodated in the region is the same regardless of whether the Regional Strategy is revoked or not, and that the broad distribution of development will be similar to retention, there is likely to remain a need for greenfield development. It is possible that in some areas there will be less development on brownfield land and more on greenfield sites (principally owing to the removal of the regional target for the use of previously developed land in RPG10 Policy HO5). However, no significant adverse impacts on soil are predicted arising from either retention or revocation of the Regional Strategy. Following revocation, protection will also be provided by policies in the NPPF which seek to protect the best and most versatile land (i.e. ALC Grades 1-3a) and Green Belt.

Two policies were identified to have significant benefits to soil, EN1 (Landscape and Biodiversity) and SS20 (Rural Land Uses). The requirements of these policies are replicated in the NPPF and it is therefore considered that their revocation would not remove the mitigating measures they provide.

4.7.2 Effects of Partial Revocation

The effects of partial revocation concern either:

- Revoking all the quantified and spatially specific policies (for instance where a quantum of development, land for development or amounts of minerals to be extracted or waste disposal is allocated to a particular location in the region) and retaining for a transitional period the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period all the spatially specific policies where a quantum of development or land for development is allocated to a particular location in the region and revoking the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period policies, ambitions and/or priorities, the revocation of which may lead to likely significant negative environmental effects.

The likely significant effects on soil and geology associated with the retention and revocation of the

quantitative/spatially specific policies are summarised in **Table 4.6** for Policy EN1. However, the effects associated with revocation are not considered to be negative or different from retention. The combination of legislative requirements for protecting geodiversity, the policy and guidance in the NPPF and the actions of other organisations (such as Natural England) as well the LPAs themselves creates a framework where the effects of revocation are considered to deliver similar positive benefits to soil and geology as retention.

The assessment has found that there are no policies in RPG10 where the act of revocation will cause a significant negative effect whilst retaining the same policy will maintain a significant environmental benefit.

4.7.1 Effects of Retention

By setting out the overarching direction within which local plans should be developed, retention of the Regional Strategy would have significant benefits on geology and soils in the short to long term by protecting geodiversity, directing development towards previously developed land and conserving the best and most versatile agricultural land.

As noted above, whether the Regional Strategy is revoked or not there is likely to remain a need for greenfield development which will have a negative effect on soils.

4.8 Mitigation Measures

Given that all likely significant effects identified would be positive, no mitigating measures are proposed for this topic.

5. Water Quality and Resources

5.1 Introduction

The overview of plans and programmes and baseline information contained in this section provides the context for the assessment of potential effects of the proposals to revoke the Regional Strategy on water quality and resources. Information is presented for both national and regional levels.

Water quality and resources within this context are defined as inland surface freshwater and groundwater resources, and inland surface freshwater, groundwater, estuarine, coastal and marine water quality.

There are links between the water quality and resources topic and a number of other SEA topics, in particular the effects and interactions of water quality and resources on biodiversity, population and human health.

5.2 Summary of Plans and Programmes

5.2.1 International

The ***Water Framework Directive*** (WFD) is the most substantial piece of EC water legislation to date and replaces a number of existing Directives including the Surface Water Abstraction Directive. It establishes a framework for the protection of inland surface waters, transitional waters, coastal water and groundwater and is designed to improve and integrate the way water bodies are managed, including encouraging the sustainable use of water resources. The key objectives at European level are general protection of the aquatic ecology, specific protection of unique and valuable habitats, protection of drinking water resources, and protection of bathing water.

In accordance with Article 4(1), the Directive objectives for surface water, groundwater, transitional and coastal water bodies are to:

- prevent deterioration;
- reduce pollution;
- protect, enhance and restore condition;
- achieve 'good status' by 2015, or an alternative objective where allowed; and

- comply with requirements for protected areas .

The WFD adopts the 'polluters pays principle' in seeking to ensure that the costs and benefits of discharging pollutants to the water environment are appropriately valued, and that implementation of the Directive is achieved in a fair and proportionate way across all sectors.

The aim of the ***Marine Strategy Framework Directive 2008)*** is to protect more effectively the marine environment across Europe. It aims to achieve good environmental status of the EU's marine waters by 2021 and to protect the resource base upon which marine-related economic and social activities depend.

With specific regard to coastal water quality, the ***Bathing Waters Directive 2006/7/EC*** sets standards for the quality of bathing waters in terms of:

- the physical, chemical and microbiological parameters;
- the mandatory limit values and indicative values for such parameters; and
- the minimum sampling frequency and method of analysis or inspection of such water.

The ***Floods Directive 2007/60/EC*** aims to provide a consistent approach to managing flood risk across Europe. The approach is based on a 6 year cycle of planning which includes the publication of Preliminary Flood Risk Assessments, hazard and risk maps and flood risk management plans. The Directive is transposed into English law by the Flood Risk Regulations 2009.

The ***Urban Waste Water Treatment Directive 91/271/EEC*** has the objective of protecting the environment from the adverse effects of untreated 'urban waste water' ('sewage'). The directive establishes minimum requirements for the treatment of significant sewage discharges. An important aspect of the directive is the protection of the water environment from nutrients, (specifically compounds of nitrogen and phosphorus), and/or nitrates present in waste water where these substances have adverse impacts on the ecology of the water environment or abstraction source waters. It was transposed into English law through the Urban Waste Water Treatment (England and Wales) Regulations 1994 (as amended).

In addition, the following European Directives have relevance to the protection of the water environment and resources:

- Dangerous Substances Directive 76/464/EEC;
- Quality of Shellfish Waters Directive 79/923/EEC;
- Directive on Priority Substances 2008/105/EC;

- Groundwater Directive 80 /68/EEC;
- Waste Framework Directive 2008/98/EC;
- Industrial Emissions Directive 2010/75/EU; and
- Drinking Water Directive 98/83/EC.

5.2.2 National

UK

The ***Flood and Water Management Act 2010*** makes provisions about water, including those related to water resources, including;

- To widen the list of uses of water that water companies can control during periods of water shortage, and enable Government to add to and remove uses from the list.
- To encourage the uptake of sustainable drainage systems by removing the automatic right to connect to sewers and providing for unitary and county councils to adopt SUDS for new developments and redevelopments.
- To reduce 'bad debt' in the water industry by amending the Water Industry Act 1991 to provide a named customer and clarify who is responsible for paying the water bill.
- To make it easier for water and sewerage companies to develop and implement social tariffs where companies consider there is a good cause to do so, and in light of guidance that will be issued by the Secretary of State following a full public consultation.

The ***Marine and Coastal Access Act 2009*** sets out a number of measures including the establishment of Marine Conservation Zones (MCZs) and Marine Spatial Plans. The main objectives of the ***Marine Policy Statement (2011)*** are to enable an appropriate and consistent approach to marine planning across UK waters, and to ensure the sustainable use of marine resources and strategic management of marine activities from renewable energy to nature conservation, fishing, recreation and tourism.

England

In England, the implementation work related to the Water Framework Directive is undertaken by the Environment Agency, working in partnership with key partners. For these reason the majority of data and programmes regarding Water Quality and Resources cover both administrations and therefore England and Wales are considered collectively in this chapter.

There are 11 River Basin Districts in England and Wales which each require (under the Water Framework Directive) a ***River Basin Management Plan (RBMP)*** including objectives for surface water, groundwater, transitional and coastal water bodies.

The Government's 2011 White Paper '***Water for Life'*** sets out the Government's vision for future water management in which the water sector is resilient and which water is valued as a precious resource. The key reforms set out in the White Paper are:

- the introduction of a reformed water abstraction regime, as signaled in the Natural Environment White Paper changes to deal with the legacy of over-abstraction of our rivers;
- a new catchment approach to dealing with water quality and wider environmental issues;
- with the Environment Agency and Ofwat provide clearer guidance to water companies on planning for the long-term, and keeping demand down;
- consultation on the introduction of national standards and a new planning approval system for sustainable drainage; and
- collaboration with water companies, regulators and customers to raise awareness of the connection between how we use water and the quality of our rivers.

Water for people and the environment - Water resources strategy for England and Wales (2009) published by Environment Agency, includes the following objectives:

- enable habitats and species to adapt better to climate change;
- allow protection for the water environment to adjust flexibly to a changing climate;
- reduce pressure on the environment caused by water taken for human use;
- encourage options resilient to climate change to be chosen in the face of uncertainty;
- better protect vital water supply infrastructure;
- reduce greenhouse gas emissions from people using water, considering the whole life-cycle of use; and
- improve understanding of the risks and uncertainties of climate change.

Other relevant strategies include the Environment Agency's ***Catchment Abstraction Management Strategies*** (CAMS) which have identified a number of catchments in England and Wales which are designated as Over-Licensed or Over-Abstracted. That is, the current level of licensed abstraction could

result in an unacceptable stress on the catchment's ecology (designated over-licensed) or possibly is resulting in an unacceptable effect (designated over-abstracted).

National Policy Statements (2011 and 2012) brings together national government policy for nationally significant infrastructure projects (NSIPs) for energy, wastewater and ports infrastructure. The National Policy Statements set out the policy framework for decisions on major infrastructure projects that meet the NSIPs thresholds established in the Planning Act 2008.

The ***National Planning Policy Framework (NPPF) (2012)*** expects the planning system to contribute to conserving and enhancing the natural environment and reducing pollution, and take full account of flood risk. In particular, the planning system is expected to prevent new development from contributing to unacceptable levels of water pollution.

- Local planning authorities are expected to set out the strategic priorities for their area in the local plan including strategic policies to deliver the provision of infrastructure for water supply, wastewater, flood risk and coastal change management. In preparing the evidence base for their local plans, they are expected to work with other authorities and providers to assess the quality and capacity of the existing infrastructure and its ability to meet forecast demands. Public bodies have a duty to co-operate on planning issues that cross administrative boundaries particularly those which relate to strategic priorities.

- The Framework expects inappropriate development in areas of flood risk to be avoided and sets out how this should be achieved through the preparation of local plans and in determining planning applications. Supporting technical guidance has been provided to ensure the effective implementation of the policy.

- Local plans are expected to take account of climate change over the longer term including factors such as flood risk, coastal change and water supply. New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change.

5.2.3 South West Region

The Environment Agency is developing **Catchment Abstraction Management Strategies (CAMS)** which consider how much water can be abstracted from watercourses and groundwater without damaging the environment within a catchment - the most appropriate scale for planning for water. They recognise the needs of abstractors whilst also reflecting the requirements of the Water Framework Directive.

The water companies are required by provisions in the Water Resources Management Plan Regulations 2007 to prepare **Water Resources Management Plans** to address the challenges to water supplies

from growth, climate change and environmental legislation. They are also required to prepare **Drought Management Plans**. These set out how they will maintain the water supply during periods of low rainfall when supply becomes depleted. South West Water, Wessex Water and Bristol Water are currently consulting on an updated Drought Management Plan to replace their existing plans.

The Environment Agency also produces and monitors the delivery of action arising from **Catchment Flood Management Plans (CFMPs)** which give an overview of the flood risk across each river catchment. They recommend ways of managing those risks now and over the next 50-100 years. There are 15 CFMPs covering South West Region. These are; West Cornwall, East Cornwall, Tamar, North Devon, South Devon, Exe, West Somerset, Parrett, East Devon, West Dorset, Frome and Piddle, Dorset Stour, North and Mid Somerset, Bristol Avon, Hampshire Avon. They consider all types of inland flooding, from rivers, ground water, surface water and tidal flooding, but not flooding directly from the sea, (coastal flooding), which is covered in Shoreline Management Plans.

Shoreline Management Plans (SMPs) are produced by a partnership of organisations (including relevant local authorities, Natural England, English Heritage and Internal Drainage Boards) led by the Environment Agency. They are large-scale assessments of the risks associated with coastal processes. They seek to reduce these risks to people and the developed, historic and natural environments. Relevant plans for the South West of England are for Durlston Head to Rame Head, Rame Head to Hartland Point and Hartland Point to Anchor Head.

5.3 Overview of the Baseline

5.3.1 National

UK

The UK has a diversity of inland and coastal waters (such as reservoirs, lakes, rivers, canals, estuaries, transitional waters, and coastal waters). Protected water features include waters designated for human consumption (including those abstracted from groundwater); areas designated for the protection of economically significant aquatic species (e.g. shellfish or freshwater fish); bathing waters (under the Bathing Waters Directive); nutrient-sensitive areas; and areas with waters important to protected habitats or species under the Habitats Directive or the Birds Directive.

There are 182 protected areas in UK inshore waters with a marine element, which includes 81 Special Protection Areas (SPAs) with marine habitats for birds, 98 Special Areas of Conservation (SACs) with marine habitats or species and three Marine Nature Reserves. In total the area coverage of these sites

exceeds 1.8 million hectares, or 2.2% of UK waters.[87]

The principal aquifers of the UK are located in the lowlands of England. The most important are the Chalk, Permo-Triassic sandstones, the Jurassic limestones and the Lower Greensand. Around 81% of groundwater bodies in England are at risk of failing Water Framework Directive objectives because of diffuse pollution.

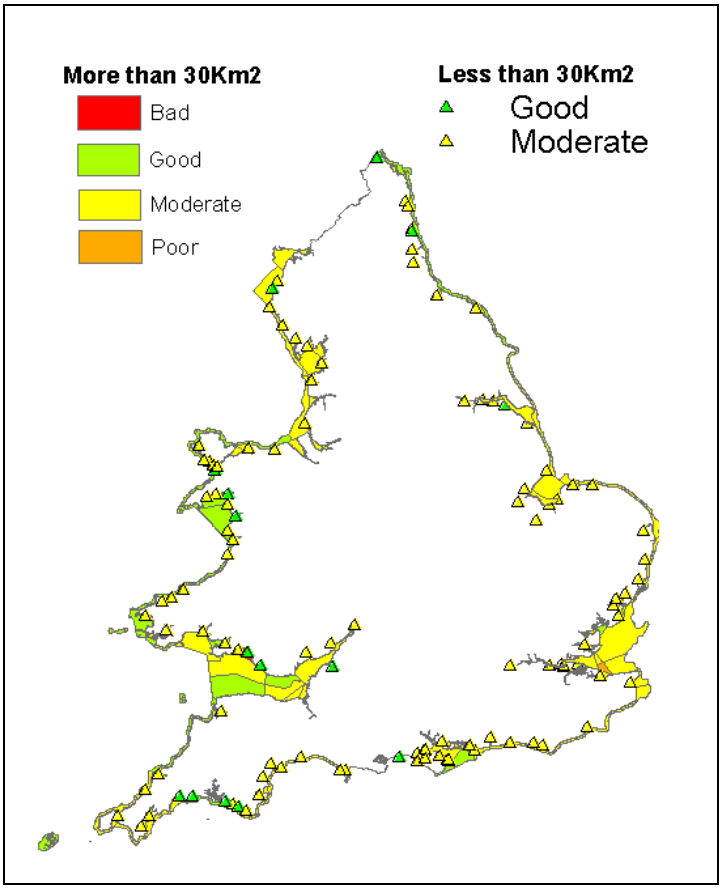
As the majority of data regarding water resources and quality is collected by the Environment Agency (covering both England and Wales), Scottish Environment Protection Agency and Northern Ireland's Department of Ireland, there is little available data on a UK level and therefore for this chapter the remainder of the baseline is considered by these divisions of administrations.

England

Coastal water quality has improved over the last two decades, however current WFD draft classification results and maps produced by the Environment Agency indicate that there are still a large proportion of coastal waters in England (and Wales) that are classified as being of Moderate Ecological Status (see Figure 5.1) i.e. are failing to meet 'Good Ecological Status' (GES) on the basis of a number of physio-chemical and biological standards and are therefore in need of measures to achieve GES.

[87] http://www.defra.gov.uk/foodfarm/fisheries/documents/mpp2009-10info.pdf

Figure 5.1 Ecological Status/Potential of Estuaries and Coasts in England and Wales



Source: *Framework Directive results and maps* available at http://www.environment-agency.gov.uk/research/library/data/97343.aspx (accessed 21/10/2009)

River water quality in England has been steadily increasing since 1990 and in 2009, 73% of rivers were of good biological quality. Between 2006 and 2007, the percentage of rivers of 'good' chemical quality rose from 74% to 76% (based on the General Quality Assessment system[88] which is based on 3 determinands - dissolved oxygen, biochemical oxygen demand and ammoniacal nitrogen). In 2009 this rose to 80 per cent. High levels of phosphorus can result in increased algal growth in freshwater and high levels of nitrate are of concern in relation to drinking water abstractions. Rivers with the highest concentrations of phosphate and nitrate are mainly in central and eastern England reflecting geology, agricultural inputs and higher population density.

The consumption of water abstracted from non-tidal surface and groundwater in England and Wales has

[88] The GQA system is being superseded by the Water Framework Directive regime, however the transition is on-going.

fallen from an estimated 41.2 thousand megalitres/day in 2000 to 33.6 thousand megalitres/day in 2009.

5.3.2 South West Region

Rivers

The South West region is predominantly located within the Environment Agency's South West River Basin District. Parts of the region also fall under the Severn and Thames Basin Districts.

Within these three River Basin Districts, there are 14 river catchment areas (9 in the South West District, 3 in the Thames and 2 in the Severn District) located within the South West. The groundwater resource is also important within the region, as are its estuaries and the coast. The following short description of the characteristics of each catchment, of the groundwater resource and the estuaries and the coast, taken from the relevant River Basin Management Plans, highlights the three key issues for this environmental assessment: (i) over abstraction in some areas of the region; (ii) the chemical and biological quality of surface and ground waters; and (iii) the risk of flooding.

Estuaries and Coastal Water Bodies

The South West has over 1,000 kilometres of coastline, 500 square kilometres of estuaries, 187 designated bathing waters (almost 40 per cent of the total for England and Wales), and 33 designated shellfish waters as well as many important marine species and habitats.

The South West's estuaries and coasts are vital to the region's economy, supporting nearly half of England's commercial fishing operations and half of England's shellfish waters. They also make a contribution to the tourism and leisure industry and the ports, harbours, shipping and associated industries they support.

To help protect the fish stocks and wildlife around the coast of the South West, Lundy Island has an established no-take zone, where all fishing activity is banned, and there are a number of voluntary no take zones, for instance at St Agnes, which contribute to the sustainability of the industry around these areas.

The South West River Basin District Management Plan identifies 23 estuaries in the District. Important estuaries include the Fal, Helford, Looe, Fowey, Camel, Tamar, Exe, Salcombe-Kingsbridge, Yealm, Dart, Taw-Torridge, Parrett, Poole Harbour, Christchurch Harbour and the Portland Harbours.

Parts of the Severn Estuary are also in the South West. The Severn Estuary is internationally recognised for nature conservation being designated as a Special Protection Area, Ramsar site and Special Area of

Conservation. The estuary is an important migratory route for salmon and internationally rare species such as shad. It supports traditional salmon fisheries and commercial elver fishing

Groundwater

There are 44 groundwater bodies in the South West River Basin District, where groundwaters are an important resource. Over the chalk geology in the east of the district, the majority of drinking water comes from groundwater, or from rivers where groundwater forms a significant part of the flow, and it is vital that the quality of these sources is maintained for the future. The main pressures on groundwaters are abstraction for drinking water supply and contamination with nitrates and pesticides. Additionally, in the west, historic mining has a significant influence on groundwater quality. That said, 84% of groundwater in the South West River Basin District is of good qualitative status. Groundwater quality in the Thames Basin District is considerably lower, at 35%, due to the industrial heritage of this area.

Water Resources

The South West is one of the wettest regions, with prevailing westerly winds bringing moisture-laden air from the Atlantic which falls as rain directly feeding river flows or percolating into the ground. However, some areas of the South West currently face a lack of water available for new abstractions due to unsustainable over-abstraction during the dry summer months, low flows and the future pressures of increased demand due to population growth. On average, each person in the South West uses 150 litres per head per day.

In addition, a total of 3,636 million litres a day (Ml/d) of water was abstracted from all non-tidal surface and groundwater in the South West in 2006, in order to meet the needs of public water supply and industry. This was 19% lower than 1995 (4,486 Ml/d).

The Environmental Agency's Catchment Abstraction Management Strategy for the South West will manage how much water the environment needs and the amount of water that can be abstracted. The first cycle of the Strategy found that over 25% of the South West surface water 'Water Resource Management Units' are either over licensed or over abstracted.

The number of households in the South West that pay for their water by metered supply is rising. Draft water company Water Resources Management Plans (WRMPs) show that in 2009/2010 an average of 51% of homes in the South West were metered. Water companies plan to increase this to almost 69% by 2015/2016.

Water Quality

The South West River Basin District Management Plan published in December 2009 identified that around 33% of surface waters in the District are at good or better (i.e. high) ecological status. However, this suggests that 66% of the water bodies in the region are failing to meet the 2015 target of 'good' ecological status.

Data from the respective River Basin District Management Plans indicates that 46% of all rivers and lakes in catchment areas have good or high biological status while 81% have good or high chemical status.

An assessment of the individual catchments is presented in **Table 5.1** below. This illustrates the variability across catchments.

Table 5.1 Catchments in the South West Region and their Ecological and Chemical Status[89]

Catchment	% good or high biological status	% good chemical status	% good status overall (ecological and chemical)
South West Region			
West Cornwall and the Fal	44	33	23
North Cornwall, Seaton, Looe and Fowey	58	100	35
Tamar	55	80	32
North Devon	69	71	35
South Devon	49	100	43
East Devon	33	100	27
South and West Somerset	35	60	23
Dorset	58	100	43

[89] Based on data from the Environment Agency River Basin Management Plans for the South West, Severn and Thames Districts

Catchment	% good or high biological status	% good chemical status	% good status overall (ecological and chemical)
Hampshire Avon	45	100	28
Thames Region			
Vale of White Horse	46	100	24
Kennet and Avon	43	88	34
Severn Region			
Severn Vale	38	88	7
Bristol Avon and North Somerset Streams	30	40	22

5.4 Environmental Characteristics of those Areas most likely to be Significantly Affected

5.4.1 National

In some urban areas in England there is relatively little water available per rata, and abstraction is above its sustainable level. The Environment Agency have derived assessments on availability of water resources for new abstraction based on Catchment Abstraction Management Strategy (CAMS) assessments and large areas of England, most notably in the South East, have been identified as areas where water for new abstractions will be limited to winter months when flows are high.[90]

This issue is likely to continue in the future based on projections on the future rainfall and demand has lead to the classification of all south-eastern areas as seriously water stressed. The remainder of the UK is classified as either having low or moderate water stress.

Recently published River Basin Management Plans (which have been established in accordance with the Water Framework Directive) have designated a number of freshwater (surface and groundwater), transitional (estuaries) and coastal water bodies in England as failing to meet "*Good Ecological Status*"

[90] http://sd.defra.gov.uk/2010/07/measuring-progress-sustainable-development-indicators-2010/

(GES) on the basis of a number of physio-chemical and biological standards. Flows in rivers and freshwater inputs to transitional waters are considered to be a 'supporting element' in the achievement of GES.

In Southern and Eastern regions of England, where rainfall is comparatively low, per capita water consumption tends to be higher than elsewhere. In some areas, abstraction is above its sustainable level and this combined with projections for rainfall and demand has lead to the classification of all south-eastern areas as seriously water stressed.

5.4.2 South West Region

The South West is one of the wettest regions however, some areas currently face a lack of water for new abstractions due to a combination of over-abstraction during dry summer months, low flows and the future pressures of increased demand due to population growth. Whilst 84% of the groundwater in the South West River Basin District is rated as being of good qualitative status, groundwater quality in the Thames Basin District is considerably lower, at 35%, due to the industrial heritage of this area.

Some 81% of rivers and lakes in the South West have good or high chemical status, whilst 46% have good or high biological status, but only around 33% of surface waters in the South West River Basin District are rated as being of good or better (i.e. high) ecological status. The Severn Vale catchment in the Severn Region has a particularly low ecological and chemical percentage (7%) for good status.

The two most common reasons for surface waters failing to meet 'good' status are diffuse pollution from agriculture and point source pollution from water industry sewage works both of which contribute to high nutrient levels in surface waters. Other key reasons are physical modification associated with flood protection, land drainage and urbanisation. Agriculture has a big role in maintaining and improving the quality of the rural environment. Agriculture accounts for approximately three quarters of the land area in the South West River Basin District and the impact of agriculture and other land uses is the main reason for failing to achieve Water Framework Directive targets in this catchment. Nutrient issues in the Taw and Torridge catchments, and the coastal waters that these rivers drain into, are causing problems.

The key pressure comes from the use of potentially polluting fertilisers, slurries and manures that contain high concentrations of nitrogen and phosphate, as well as chemicals such as pesticides. Agriculture is recognised as a source of diffuse pollution and a potential barrier to achieving the Water Framework Directive (WFD) objectives.

The increase in intensive agriculture and the use of nitrogen-based fertilisers has contributed to the increased levels of nitrates in surface and ground waters. Nitrate Vulnerable Zones (NVZs) are designated where agricultural nitrate pollution of surface and ground waters is high or rising. Arable farming practices in particular require high nitrogen input.

The main pressures on South West estuaries and coasts are pollution from industrial discharges, nutrient and microbiological contamination from run-off and sewage, sea level rise leading to coastal squeeze and potential over-exploitation of fisheries. The main reasons for less than good status are the physical modification of the coast and high levels of nutrients and tributyltin, which used to be used as an antifoulant on boat hulls, but is now banned.

The Severn Estuary, with its very high tidal range the estuary also presents a challenge for coastal and flood protection.

5.5 Likely Evolution of the Baseline

5.5.1 National

UK

The current trend in water condition is generally towards increased water quality across natural environments, drinking water and bathing waters[91]. Current climate change predictions indicate that rainfall patterns will become increasingly seasonal, with lower amounts of flow in the summer. This will lead to lower summer river flows, especially in those catchments with a low groundwater component. This could lead to increased abstraction pressure, increased stress on sensitive hydrological systems and a decrease in dilution potential leading to a failure against water quality targets. Increased flooding and storm events also have the potential to increase runoff of pollutants into controlled waters, thus reducing water quality. Population pressures are predicted to increase in certain parts of Great Britain, for example in the south-east. Increased population density will result in an increased pressure on natural resources and could exacerbate current problems or cause new ones.

The Marine and Coastal Access Act (2009) allows for the creation of Marine Conservation Zones (MCZs) in Great Britain (Northern Ireland MCZs will be introduced through separate legislation). MCZs will protect nationally important marine wildlife, habitats, geology and geomorphology. Sites will be selected to protect the range of marine wildlife[92]. This should lead to greater protection and improvement of marine habitats in the future.

In 2011, all but 14 of the 597 coastal bathing waters in the UK met the mandatory (basic) standards of the European Bathing Water Directive[93]. Under the revised Bathing Water Directive all bathing waters will be required to achieve at least 'sufficient' quality by 2015, which is twice as stringent as the current mandatory standard. The overall quality of bathing waters is therefore likely to increase as water quality

[91] Defra, Sustainable Development Indicators, 2009, http://www.defra.gov.uk/sustainable/government/progress/documents/SDIYP2009_a9.pdf
[92] Natural England. http://www.naturalengland.org.uk/ourwork/marine/protectandmanage/mpa/mcz/default.aspx
[93] Defra, Environmental Statistics – Key Facts Dec 2011

is improved to meet the increased standards.[94]

England

The Environment Agency's Catchment Abstraction Management Strategies (CAMS) have identified a number of catchments in England which are designated as Over-Licensed or Over-Abstracted. Climate change is likely to result in lower summer rainfalls and more frequent/sever winter flood events. Such changes are likely to increase pressure on summer freshwater water availability and increase pollutant runoff into controlled waters during flood events. Unsustainable groundwater and surface water abstraction may contribute to environmental damage of rivers and wetlands at 500 sites in England and Wales, important conservation sites, including sites of national and international conservation importance.

The Environment Agency aims that by 2030 water use per person in England should fall by 130 litres/ day.[95]

The WFD requires that river basin management plans are prepared by December 2009. The objectives of the river basin management plans are required to be achieved by 2015. Those objectives are to:

- prevent deterioration, enhance and restore bodies of surface water, achieve good chemical and ecological status of such water and reduce pollution from discharges and emissions of hazardous substances;
- protect, enhance and restore all bodies of groundwater, prevent the pollution and deterioration of groundwater, and ensure a balance between groundwater abstraction and replenishment; and
- preserve protected areas.

Defra aims that by 2030 at the latest, England has improved the quality of our water environment and the ecology which it supports, and continued to provide high levels of drinking water quality from its taps; sustainably manage risks from flooding and coastal erosion, with greater understanding and more effective management of surface water; ensure a sustainable use of water resources, and implement fair, affordable and cost reflective water charges; cut greenhouse gas emissions; and embed continuous adaptation to climate change and other pressures across the water industry and water users.[96]

Environment Agency aims to enhance water supply by up to 1,100Ml/d above present levels by the

[94] Environment Agency http://www.environment-agency.gov.uk/research/library/data/112170.aspx

[95] EU http://europa.eu/legislation_summaries/agriculture/environment/l28002b_en.htm

[96] Future Water, the Government's Water Strategy for England

improvement of existing schemes and the development of some new resources. [97].

There is a trend of improving quality of rivers within England; between 1990 and 2008 the percentage of rivers of good biological quality in England rose from 63 to 72%. Over the same time period the percentage of rivers of good chemical quality rose from 55 to 79%[98].

5.5.2 South West Region

Policy SS2 of RPG10 notes that the 11 Principal Urban Areas (PUAs) in the South West offer the best opportunity for accommodating the majority of development in the most sustainable way. Of the 11 PUAs, 6 are located in the Northern sub-region. Development in these areas will likely place pressure on water quality particularly as many of these areas suffer from poorer water quality than other parts of the region.

In addition to pressures from development, climate change will increase water demand. South West Water predict[99] a rise in household water demand of 1.4% by the 2020s and a rise in non-household demand of 3.2% as a consequence of climate change. Since the South West is a popular tourist area, there will be significant seasonal variances in water demand. In fact, the region has a higher seasonal variance than the other nine Water Companies and peak summer demand can be 25% higher than average daily demand throughout the year.

The Environment Agency predict that in the future, the conflicting demands for water resources between agriculture, an increasing population, and the environment will increase as climate change makes the region even drier, increasing demand on reducing supplies.

To counter the pressures on water quality caused by development and climate change, RPG10 Policy RE1 seeks generally to promote the sustainable use of water by ensuring water issues are taken into consideration and avoiding sites where water supply is likely to be unsustainable. South West Water's Strategic Direction Statement 2010-2035 also indicates that major investment will be required between 2015 and 2030 to adapt to the challenges of climate change.

[97] EA, Water Resources for the Future: A Strategy for England and Wales

[98] Defra, Sustainable Development Indicators (2010) http://sd.defra.gov.uk/2010/07/measuring-progress-sustainable-development-indicators-2010/

[99] http://www.southwestwater.co.uk/media/pdf/a/3/SWWSDS.pdf

5.6 Assessing Significance

Table 5.2 sets out guidance utilised during the assessment to help determine the relative significance of potential effects on the water quality and resources. It should not be viewed as definitive or prescriptive; merely illustrative of the factors that were considered as part of the assessment process.

Table 5.2 Approach to Determining the Significance of Effects on Water Quality and Resources

Effect	*Description*	*Illustrative Guidance*
++	Significant positive	• Alternative would lead to a major reduction in water use such that the risk of water shortages in the region are significantly decreased and abstraction is at least at a sustainable level in the long term. • Alternative would significantly decrease the amount of waste water, surface runoff and pollutant discharges so that the quality of that water receptors (including groundwater, surface water, sea water or drinking receptors) will be significantly improved and sustained and that all water targets (including those relevant to chemical and ecological condition) are reached and exceeded.
+	Positive	• Alternative would lead to a minor reduction in water use such that the risk of water shortages in the area is decreased in the short term and abstraction is closer to sustainable levels than prior to development. • Alternative would lead to minor decreases in the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors (including groundwater, surface water, sea water or drinking receptors) may be improved to some level temporarily and that some water targets (including those relevant to chemical and ecological condition) will be reached/exceeded.
0	No (neutral effects)	• Alternative would not significantly affect water demand and abstraction levels will not be altered. • Alternative would not change amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors will not be affected.
-	Negative	• Alternative would lead to a minor increase in water use such that the risk of water shortages in the area is increased to some level in the short term and abstraction is further removed from sustainable levels. • Alternative would lead to minor increases in the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors (including groundwater, surface water, sea water or drinking receptors) may be decreased to some level temporarily and it may prevent some water targets (including those relevant to chemical and ecological condition) from being achieved.
--	Significant negative	• Alternative would lead to major increases in water use such that the risk of water shortages in the area is significantly increased and abstraction is beyond sustainable levels. • Alternative would lead to an exceedence of an abstraction license limit. • Alternative would lead to major increases in the amount of waste water, surface runoff and/or pollutant discharges so that the quality of water receptors (including groundwater, surface water, sea water or drinking receptors) will be considerably increased and will prevent some or all water targets (including those relevant to chemical and ecological condition) from being achieved.
?	Uncertain	• From the level of information available the impact that the alternative would have on this objective is uncertain.

5.7 Assessment of Significant Effects of Retention, Revocation

and Partial Revocation

Table 5.3 summarises the significant effects identified in the detailed assessment of RPG10 policies against the water topic.

Table 5.3 Significant Effects against the Water Topic

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
RE1 Retention	++	++	++	This policy states that local authorities, the Environment Agency, water companies and other bodies should plan water infrastructure in accordance with the regional spatial strategy, conserve water through demand management, protect groundwater resources and protect and enhance river and coastal water quality. The policy also sets out that development plans should take account of water issues, ensuring the timely delivery of water infrastructure, avoiding sites where water supply/drainage is likely to be unsustainable, promoting the use of SuDS and encouraging the use of sites where water issues can be solved. This policy is reflected in the RES which promotes the efficient use of resources. Under Priority 1A 'Support business productivity', for example, the RES seeks increased business resource efficiency. In seeking to achieve the sustainable use of water resources and enhance water quality, retention has been assessed as having a significant positive effect against the water topic.
RE1 Revocation	++	++	++	In the short term there is not expected to be any significant change in the type and magnitude of effects associated with the revocation of Policy RE1 as most local plans have been in place since RPG10 was published (34 local authorities have plans in place which are in general conformity with RPG10). It is also expected that local authorities collaborating under the duty to co-operate together with the Environment Agency, water companies and Ofwat, informed by water company Water Resource Management Plans and the NPPF, would continue to ensure that adequate provision and efficient use is made of water infrastructure. The NPPF states that local planning authorities should set out the strategic priorities for the area in the local plan, including strategic policies to deliver the infrastructure for water supply and wastewater treatment (Paragraph 156) and expects local planning authorities to adopt proactive strategies to mitigate and adopt to climate change that take full account of water supply and demand considerations (Paragraph 94). The NPPF also states that local planning authorities should work with other authorities and providers to assess the quality and capacity of infrastructure for water supply and waste water and its treatment, and its ability to meet forecast demands (Paragraph 162). Water efficiency and demand management will largely continue to depend on measures that are applied outside the planning system, such as through the measures set out in Water Resource Management Plans and Drought Plans, fiscal measures and incentive schemes. In this context, the Government's 2011 White Paper "Water for Life" maintains the commitment for Government to work with the Environment Agency and Ofwat to provide clearer guidance to water companies on planning for the long-term and keeping demand down. However, the Code for Sustainable Homes encourages higher levels of water efficiency and local authorities can require housing developments in their area to meet specified Code levels. The timely provision of water infrastructure is expected to help conserve and enhance

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				water quality whilst it is expected that work led by the Environment Agency and the water companies with local authority involvement will continue under the requirements of the Water Framework Directive and in accordance with catchment level plans. In consequence, revocation has been assessed as having the same positive benefits as retention.
RE2 Retention	++	++	++	This policy seeks to protect the development of land liable to river and coastal flooding, promoting the adoption of a sequential approach to land allocation having regard to flood risk. It also encourages the use of SuDS and requires development plans to identify areas at risk from flooding and provide criteria for proposals in flood plains. In seeking to reduce flood risk, retention has been assessed as having a significant positive effect against the water topic.
RE2 Revocation	++	++	++	Significant positive effects associated with the revocation of Policy RE2 are expected to be similar to those identified in relation to its retention. The Flood and Water Management Act 2010 provides for better, more comprehensive management of flood risk for people, homes and businesses whilst the Flood Risk Regulations 2009 impose a duty on the Environment Agency and lead local flood authorities to take steps to identify and prepare for significant flood risk. The NPPF and technical guidance on flood risk published alongside the framework sets out how local planning authorities should plan for development which avoids and manages flood risk, and this policy would be unaffected by the revocation of the Regional Strategy. The NPPF makes clear that local planning authorities should adopt proactive strategies to mitigate and adapt to climate change, taking full account of flood risk (see paragraph 94). The policy on the location of new development in relation to flood risk is covered in the NPPF at paragraphs 100 to 104. In particular it sets out that inappropriate development should be avoided in areas at risk of flooding but, where development is necessary, that it should be made safe and avoids increasing flood risk elsewhere. To this end, local plans should apply a sequential, risk-based approach to the location of development to avoid, where possible, flood risk to people and property [adding the words] and manage any remaining risk. In preparing their plans local planning authorities should use their Strategic Flood Risk Assessments, and the Catchment Flood Management Plans and policies in Shoreline Management Plans and Flood Management Strategies produced by the Environment Agency. In consequence, the significant positive effects from addressing this issue will be similar to those from retaining the policy.

5.7.1 Effects of Revocation

Revocation of the Regional Strategy would remove those policies which seek to mitigate the adverse effects of development on water, principally Policy RE1. Given the legal requirements for water companies to work with local planning authorities to plan for water supply and waste water treatment, underpinned by the policies in the NPPF explained above, it is concluded that removal of Policy RE1 would not have any effect.

Notwithstanding, the assessment has identified the potential for adverse effects on water as a result of an increase in per capita consumption associated with new development. However, this effect is considered to be the same as under retention of the Regional Strategy which principally reflects the assumption that, whether the Strategy is revoked or not, the level of growth to be accommodated in the South West (and demand for water resources to supply new development) will be similar if not the same.

Policy RE2 seeks to protect the development of land liable to river and coastal flooding, promoting the adoption of a sequential approach to land allocation having regard to flood risk. Paragraph 94 in the NPPF states that local planning authorities should adopt proactive strategies to mitigate and adapt to climate change, taking full account of flood risk, coastal change and water supply and demand considerations

The Flood and Water Management Act 2010 contains provisions for regional working and co-operation such as the establishment of regional flood and coastal committees and the bringing together of lead local flood authorities, who will have a duty to co-operate, to develop local strategies for managing local flood risk. In addition, the Flood Risk Regulations 2009 impose a duty on the Environment Agency and lead local flood authorities to take steps to identify and prepare for significant flood risk.

The NPPF (paragraph 100) seeks to avoid inappropriate development in areas at risk of flooding by directing development away from areas at highest risk, but where development is necessary, making it safe without increasing flood risk elsewhere. Technical guidance on flood risk published alongside the NPPF sets out how this policy should be implemented. Local plans should be supported by Strategic Flood Risk Assessments and develop policies to manage flood risk from all sources, taking account of advice from the Environment Agency and other relevant flood risk management bodies, such as lead local flood authorities and internal drainage boards. Local plans should apply a sequential, risk-based approach to the location of development to avoid where possible flood risk to people and property and manage any residual risk, taking account of the impacts of climate change. This includes applying a sequential test to steer new development to areas with the lowest probability of flooding.

When determining planning applications, local planning authorities should ensure flood risk is not increased elsewhere. A site-specific flood risk assessment is required for proposals of 1 hectare or greater in Flood Zone 1; all proposals for new development (including minor development and change of use) in Flood Zones 2 and 3, or in an area within Flood Zone 1 which has critical drainage problems (as notified to the local planning authority by the Environment Agency); and where proposed development or a change of use to a more vulnerable class may be subject to other sources of flooding. It is therefore concluded that removal of Policy RE2 will have no effects.

5.7.2 Effects of Partial Revocation

The effects of partial revocation concern either:

- Revoking all the quantified and spatially specific policies (for instance where a quantum of development, land for development or amounts of minerals to be extracted or waste disposal is allocated to a particular location in the region) and retaining for a transitional period the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period all the spatially specific policies where a quantum of development or land for development is allocated to a particular location in the region and revoking the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period policies, ambitions and/or priorities, the revocation of which may lead to likely significant negative environmental effects.

There were no likely significant effects on water associated with the revocation or retention of the quantitative and spatially specific policies as no quantitative policies were identified in the assessment as having likely significant effects on this topic.

The assessment has also found that there are no policies in RPG10 where the act of revocation will cause a significant negative effect whilst retaining the same policy will maintain a significant environmental benefit.

5.7.1 Effects of Retention

Increased demand on water resources in the region arising from new development will continue under retention of the Regional Strategy. Ultimately the effect will depend on the exact quantum of growth in the region, its broad location and actions required (mainly through the Water Framework and other Directives) to achieve greater water efficiency and improved water quality.

5.8 Mitigation Measures

Given that all likely significant effects identified would be positive, no mitigating measures are proposed for this topic.

6. Air Quality

6.1 Introduction

The overview of plans and programmes and baseline information contained in this section provides the context for the assessment of potential effects of the proposals to revoke the regional strategies on air quality. Information is presented for both national and regional levels.

Air quality within this context concerns the levels of pollutants emitted into the air and their significance, in terms of the risk of adverse effects on the environment and/or human health. Carbon dioxide and other greenhouse gas emissions are excluded from the air quality topic and are reported under the climate change and adaptation topic.

There are links between the air quality topic and other topics in the SEA, specifically population, human health, climate change and material assets.

6.2 Summary of Plans and Programmes

6.2.1 International

The ***Air Quality Framework Directive*** 96/62/EC and its Daughter Directives set a framework for monitoring and reporting levels of air pollutants across EU member states, setting limits or reductions for certain air pollutants.

The ***Ambient Air Quality and Cleaner Air for Europe Directive*** 2008/50/EC consolidated earlier air quality directives and also defines and establishes objectives and targets for ambient air quality to avoid, prevent or reduce harmful effects on human health and the environment as a whole. It sets legally binding limits for concentrations in outdoor air of major air pollutants that impact on public health such as particulate matter (PM10 and PM2.5) and nitrogen dioxide (NO2). The 2008 directive replaced nearly all the previous EU air quality legislation and was made law in England through the ***Air Quality Standards Regulations 2010***, which also incorporates the 4th air quality daughter directive 2004/107/EC that sets targets for levels in outdoor air of certain toxic heavy metals and polycyclic aromatic hydrocarbons. Equivalent regulations exist in Scotland, Wales and Northern Ireland.

The UK monitors and models air quality to assess compliance with the air quality limit and target values set out in the EU legislation above. The results of the assessment are reported to the commission on an annual basis. Air quality monitoring is also carried out by local authorities to meet local air quality management objectives.

In early 2011, the European Commission began a review of EU air quality policy which will culminate with the publication of new proposals on ambient air quality and emissions ceilings in 2013. On 30 June 2011, the Commission launched a public consultation inviting views on the best way to improve the EU's air quality legislation. The consultation closed in October 2011.

The ***EU Thematic Strategy on Air Quality (2005)*** identifies that despite significant improvements in air quality across the EU, a number of serious air quality issues still persist. The strategy promotes an approach, which focuses upon the most serious pollutants, and that more is done to integrate environmental concerns into other policies and programmes. The objective of the strategy is to attain levels of air quality that do not give rise to significant negative impacts on and risks to human health and the environment. The strategy emphasises the need for a shift towards less polluting modes of transport and the better use of natural resources to help reduce harmful emissions.

The ***Industrial Emissions Directive (IED) 2010/75/EU*** combines seven existing air pollution directives, including the Large Combustion Plant Directive and the Integrated Pollution Prevention and Control (IPPC) Directive. As with previous directives aimed at minimising emission release, part of the benefit of the Industrial Emissions Directive is that it includes several new industrial processes, sets new minimum emission limit values (ELVs) for large combustion plant and addresses some of the implementation issues of the IPPC.

The ***National Emissions Ceilings Directive 2001/81/EC*** came into force in 2001, and Member States were required to transpose it into their national legislation by November 2002. This Directive sets 'ceilings' (maximum values to be achieved by 2010) for total national emissions of four pollutants: sulphur dioxide; oxides of nitrogen; volatile organic compounds; and ammonia. These four pollutants contribute to acidification, eutrophication, and formation of ground level ozone.

6.2.2 National

UK

The ***Air Quality Standards Regulations 2010*** transpose into UK law Directive 2008/50/EC on ambient air quality and cleaner air for Europe and Directive 2004/107/EC relating to arsenic, cadmium, mercury, nickel and polycyclicaromatic hydrocarbons in ambient air. The objective of the Regulations is to improve air quality by reducing the impact of air pollution on human health and ecosystems. The standards set out air quality objectives, limit values and target values for pollutants, namely benzene, 1,3 butadiene, carbon monoxide, lead, nitrogen dioxide, PM_{10}, sulphur dioxide and PM_{25}.

The ***Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007)*** sets out a way forward for work and planning on air quality issues.

The ***Environment Act 1995*** was enacted to protect and preserve the environment and guard against pollution to air, land or water. It requires local authorities to undertake local air quality management (LAQM) assessments against the standards and objectives prescribed in regulations. Where any of these objectives are not being achieved, local authorities must designate air quality management areas and prepare and implement remedial action plans to tackle the problem.

The ***Ozone-Depleting Substances (Qualifications) Regulations 2009*** introduces controls on the production, use and emissions from equipment of a large number of "controlled substances" that deplete the ozone layer.

England

The ***National Planning Policy Framework (NPPF) (2012)*** expects the planning system to prevent new development from contributing to unacceptable levels of air pollution. Planning policies and decisions are therefore expected to ensure that new development is appropriate for its location and take into account "*The effects (including cumulative effects) of pollution on health, the natural environment or general amenity, and the potential sensitivity of the area or proposed development to adverse effects from pollution*". (paragraph 120).

The Framework expects planning policies to "*sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan*."(paragraph 124). In doing so, local planning authorities are expected to focus on whether the development itself is an acceptable use of the land, and the impact of the use, rather than the control of processes or emissions themselves where these are subject to approval under pollution control regimes.

6.2.3 South West Region

There are 41 Air Quality Management Areas (AQMAs) that have been designated in 22 local authorities in the region. Most AQMAs within the region are established due to high levels of nitrogen dioxide (NO2) as a result of traffic. Each local authority has then developed an Air Quality Action Plan for the designated AQMAs. The majority of the action plans focus on measures dealing with road traffic in and include setting up Clean Air or Low Emissions zones.

6.3 Overview of the Baseline

6.3.1 National

UK

Air quality in the UK is generally good. In 2008 urban background particulate levels averaged 20 micrograms per cubic metre (µg m-3) (Air Quality Strategy Objective and EU Limit Value is 40µg m-3); roadside particulate levels averaged 28µg m-3; urban background ozone levels averaged 59µg m-3; and rural ozone levels averaged 71µg m-3.[100] The long-term decrease in urban background particulate concentrations has levelled off in the last two years, remaining at 19 micrograms per cubic metre (µg m-3) since 2008. Roadside levels increased slightly in 2010 to 23µg m-3, although this followed a relatively large decrease in 2009, and there is an overall decreasing trend.

In 2010, 234 Local Authorities in the UK (58% of all UK authorities) had declared Air Quality Management Areas (AQMAs), a designation made by a Local Authority where an assessment of air quality results in the need to devise an action plan to improve the quality of air.[101] AQMAs are predominantly in urban areas along busy and congested road networks and are generally related to nitrogen dioxide (NO_2) (in 93% of cases) and particulates (PM_{10}) (in 33% of cases). Transport is identified as the main source of pollution in 92% of all AQMAs.[101]

In the UK 26 days of moderate or high air pollution were recorded in urban areas, and 45 days of moderate or high air pollution were recorded in rural areas respectively in 2008.

England

Within England, in December 2009, there were 203 local authorities with AQMAs, 33 of which were within London. In 83.7% of cases the AQMA is required for NO_2 pollution and 31.5% they were required for PM_{10} pollution. In 94% of cases the source of pollution was from transport and 4.4% the source was from industry.[101]

Overall, trends in PM_{10} concentrations for all metrics in all parts of England appear to have levelled out in recent years. However, four sites in England (London Marylebone Road, London Camden roadside, Brighton roadside and Bradford Centre) were over the 24 hour objective for PM_{10} meaning that more

[100] Defra, Environment in your Pocket Statistics, 2009, http://www.defra.gov.uk/evidence/statistics/environment/eiyp/

[101] Defra, Review of local air quality management, 2009, http://archive.defra.gov.uk/environment/quality/air/airquality/local/documents/laqm-report.pdf

than the 35 days were recorded as being in exceedance of a 24 hour average value of 50µg.m^{-3}.[102]

In 2003 it was estimated that 2161.7 km of road exceeded an annual mean value of 31.5 µg.m^{-3} (closely equivalent to the objective value), 935.9 km of which was within London making up 43.2% of the total length of road exceedance.[102]

In 2003 the population mean weighted $PM_{2.5}$ concentration for England (excluding London) was 14.4µg.m-^{3}, 17.4µg.m^{-3} in Inner London and 16.9µg.m^{-3} in Outer London.[102]

Four sites in England (London Marylebone Road; London A3 roadside; Camden roadside and Bristol Old Market roadside) exceeded the AQS 1 hour objective for NO_2 meaning there were more than 18 exceedences of the 200µg/m3 target in 2005.[102]

6.3.2 South West Region

As noted above, in the South West there are 41 AQMAs that have been designated in 22 local authorities in the region. Most AQMAs within the region are established due to high levels of nitrogen dioxide (NO2) as a result of traffic. Three AQMAs have been established to monitor both nitrogen dioxide and particulate matter (Bristol, Mid Devon, and Wiltshire).

The majority of the AQMA action plans focus on measures dealing with road traffic, such as:

- local traffic management schemes;
- Low Emissions Strategies;
- setting up Clean Air or Low Emissions zones; and
- working with the Highways Agency to tackle pollution on the motorways/trunk roads.

A recent review of local air quality management for Defra [103] concluded that national policy interventions have resulted in substantial reductions in emissions over recent years, with PM10 emissions in the UK down by 17.4% and NO_x emissions down by 16.3% over the period 2000 to 2006. The largest single source of pollution in both cases continues to be road transport, accounting for 33% of emissions in the case of NOx (down from 43% in 2000) and 21% of PM_{10}. Gas sources (i.e., domestic, industrial-commercial gas consumption and gas leakage) are, however, predicted to overtake road transport as the

[102] Air Quality Strategy for England, Scotland, Wales and Northern Ireland, Vol 2 (2007) http://archive.defra.gov.uk/environment/quality/air/airquality/strategy/documents/air-qualitystrategy-vol2.pdf

[103] Michael Faulkner and Priscilla Russell (2010) Review of Local Air Quality Management (http://archive.defra.gov.uk/environment/quality/air/airquality/local/documents/laqm-report.pdf)

main source of NO_x emissions in London by 2010.

However, ambient air quality has not been improving at the same rate as emissions. There was no marked downward UK-wide trend over the period 2000 to 2008 for either NO_2 or PM_{10}. Across the UK, levels of roadside pollution are predictably worse than at other sites, with the average level for NO_2 concentrations across central Government's monitoring network exceeding objective levels and the EU limit value of 40µg m-^{3}.

The relationship between emitted and ambient pollution is not straightforward. An increase in the emission of primary NO_2 from diesel engines (as opposed to NO which subsequently oxidises in the atmosphere) is part of the reason why ambient NO_2 has not declined at the rate expected. PM_{10} ambient concentrations include significant contributions either formed by chemical reactions in the atmosphere or from emissions not characterised within emission inventories.

Acid Rain

Since 1980, sulphur dioxide emissions in the UK have decreased by 75%, leading to 78% less dry deposition and 61% less wet deposition.

Narrator Brook, an upland stream which drains into Burrator Reservoir on Dartmoor, is one of the 22 UK acid monitoring network sites and the only site in the South West. Measurements of water quality in this stream have showed a reduction in acidity from pH 5.71 measured in the period 1991 – 1996 to pH 6.05.[104]

6.4 Environmental Characteristics of those Areas most likely to be Significantly Affected

6.4.1 National

UK

Air quality has improved in the UK over the last sixty years as a result of the switch from coal to gas and electricity for heating of domestic and industrial premises, stricter controls on industrial emissions, higher standards for the composition of fuel and tighter regulations on emissions from motor vehicles. However, poor air quality - particularly from vehicles - remains a significant issue for community health and for biodiversity, especially in/downwind of urban areas and major transport networks.

[104] UK Acid Waters Monitoring Network at http://awmn.defra.gov.uk/resources/annualreports/index.php

In 2005, 29% of monitoring sites within the UK exceeded the annual mean NO_2 objective of 40µg.m^{-3} and 4% of monitoring sites exceeded the 1 hour objective of 200µg.m^{-3} more than 18 times a year.[105]

In 2005, roughly 40% of the 85 monitoring network sites exceeded the Air Quality's Strategy objective for O_3.[105]

Air pollution is a significant cause of decline in the condition of 55 of UK SSSIs.[106] However, it is often very difficult to determine the effects of air pollution on SSSIs, given the complex interactions between pollution impacts, management and abiotic influences. As a result, the impacts of air pollution, and the identification of air pollution as an adverse activity affecting condition, are considered to be substantially under-reported.[106]

Research by the Government has found that in a number of urban areas, the least affluent members of society tend to be exposed to the highest levels of air pollution[107]. This is particularly the case in England, where AQMAs declared for NO_2 are often in the most socially deprived areas people in deprived communities exposed to 41% higher concentrations of NO_2 than those people living in average communities[108], although this is less marked in Wales and Scotland. The report concluded that measures to improve air quality can have a more pronounced effect in deprived areas and could help to reduce this social inequality[109].

6.4.2 South West Region

Figure 6.1 shows trends in the number of days of poor air quality in the South West. In urban areas, air pollution in 2008 was recorded as moderate or higher on 26 days on average per site, compared with 23 days in 2007, and 59 days in 1993. This series has shown a high degree of year-on-year variability. In rural areas, air pollution in 2008 was moderate or higher for 45 days on average per site, compared with 30 days in 2007. This series has also fluctuated significantly over time.

[105] UK Air Quality Archive, www.airquality.co.uk/archive

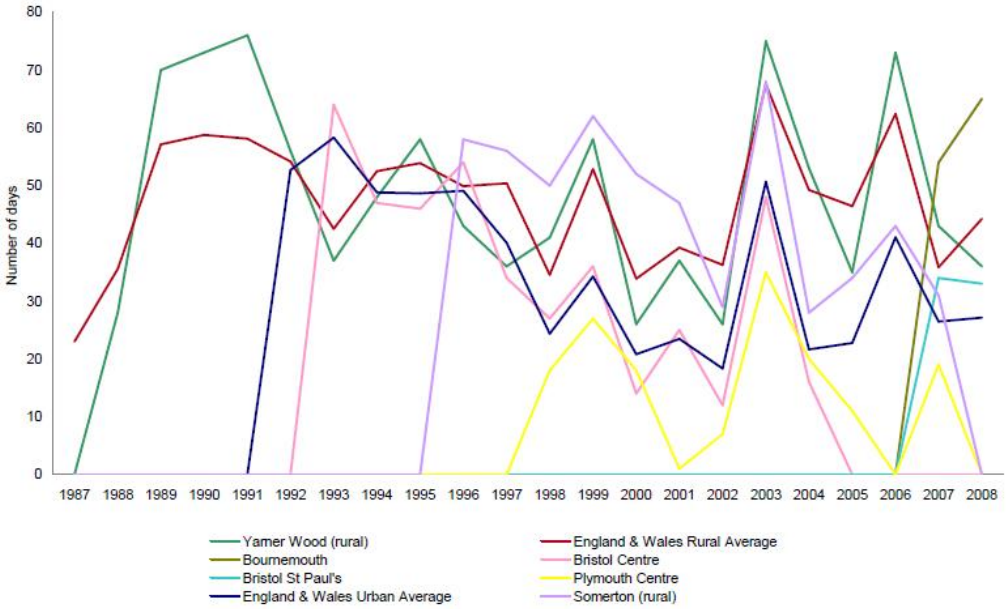
[106] Joint Nature Conservation Committee (2006) Common Standards Monitoring for Designated Sites: First Six Year Report, http://www.jncc.gov.uk/pdf/CSM_06summary.pdf

[107] Dept. for Communities and Local Government (2006) Air Quality and Social Deprivation in the UK: an environmental inequalities analysis, www.airquality.co.uk/reports/cat09/0701110944_AQinequalitiesFNL_AEAT_0506.pdf

[108] UK Air Quality Archive, www.airquality.co.uk/archive

[109] Air Quality Strategy for England, Scotland, Wales and Northern Ireland (2007) http://www.official-documents.gov.uk/document/cm71/7169/7169_i.asp

Figure 6.1 Days with moderate or higher air pollution in the South West with England & Wales comparison



Source: Defra (2009)

In the South West, Bournemouth and Bristol St Pauls were monitored urban sites, recording 65 and 33 days of poor air quality respectively. As with the national trend, these two sites have shown significant variability. However, the number of poor air quality days increased by 11 days in Bournemouth between 2007 and 2008 and by 1 day in Bristol St Pauls over the same period.

Only Yarner Wood was monitored for rural air quality in the region in 2008, which recorded 36 days of poor air quality. Although this was eight days below the national average and seven days below the 2007 figure for the region, there is no clear trend in rural air quality due to significant year-on-year variability.[10]

Defra's provisional health objective is that the daily maximum 8 hour running mean should not exceed a concentration of 50 parts per billion on more than 10 days a year at any one location. In 2007, the number of days exceeding the concentration of 50 parts per billion ranged from 54 days in Plymouth Centre to 71 days in Yarner Wood. Yarner Wood and Somerton, the two rural monitoring sites in the region, were both above the UK average of 67 days for rural sites, whilst Bournemouth and Bristol St Pauls both registered above the UK average of 57 days for urban sites, with 68 and 59 days respectively. Plymouth Centre recorded just below the UK average with 54 days.

Bath is particularly susceptible to pollutants from road traffic as the city is set in a valley surrounded by

hills which can trap the pollution within the city.

6.5 Likely Evolution of the Baseline

6.5.1 National

The current trend in air condition is generally towards improved air quality, both in rural and urban settings[110].

Between 1990 and 2008 there was no clear long-term trend in ozone levels with increases in urban background ozone levels of 40.5%, however between 1980 and 2007 nitrogen oxides (NOx) fell by 42%, particulates (PM_{10}) fell by 59% and sulphur dioxide (SO2) by 84% (between 1990 and 2007).[111]

Reductions are a product of: improved technology; changes in energy generation; targeted air quality management policies; and reductions in specific greenhouse gases, CO_2, CH_4, N_2O, hydrofluorocarbons (HFCs), perfluorocarbons (PFCs) and sulphur hexafluoride (SF_6).

Projections of UK total emissions:[112]

Best case scenario (full air quality target compliance):

- NOx: 2010 = 1136.4 ktonnes/yr; 2015 = 963.1 ktonnes/yr; 2020 = 799.1 ktonnes/yr.
- PM10: 2010 = 133.5 ktonnes/yr; 2015 = 129.4 ktonnes/yr; 2020 = 134.4 ktonnes/yr.

Worst case scenario (extension of 2003 baseline):

- NOx: 2010 = 1151.0 ktonnes/yr; 2015 = 1030.3 ktonnes/yr; 2020 = 910.7ktonnes/yr.

Measurements and modelling show that, without further measures, objectives for particles such as particulate matter (PM10), nitrogen dioxide (NO2), ozone (03) and polycyclic aromatic hydrocarbons (PAHS) are unlikely to be achieved in some parts of urban areas within the UK[113].

[110] http://www.defra.gov.uk/sustainable/government/progress/documents/SDIYP2009_a9.pdf
[111] http://www.defra.gov.uk/evidence/statistics/environment/eiyp/
[112] http://www.airquality.co.uk/reports/reports.php?action=category&section_id=17
[113] Defra (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, http://www.official-documents.gov.uk/document/cm71/7169/7169_i.asp

England

PM_{10} pollution overall has been decreasing in recent years and this is predicted to continue in the future. By 2015 71.7km of main urban road is predicted to be in exceedance of 31.5µg/m^3 (roughly equivalent to the Stage 1 PM10 24 hour limit value and objective), this is a 96.7% decrease compared to the 2003 baseline.[114]

Concentrations of NO_2 have been declining on average, although London Marylebone Road (the site with the highest NO_2 levels in England) and several other sites, are showing increasing concentrations in the most recent years. By 2015, 1,331 km of main urban road is predicted to be in exceedence of the annual mean objective of 40µg.m^{-3}, this is an 80.2% decrease compared to the 2003 baseline.

6.5.2 South West Region

The baseline information presented above highlights that air pollution in the region has fluctuated since 1987. However, it is likely that increasing levels of traffic associated with new development will lead to additional congestion and potentially decreasing levels of air quality, particularly within urban areas and around strategic transport corridors. Higher temperatures experienced during the summer as a result of a changing climate can also be expected to amplify the potential negative effects of poor air quality. However, background air quality across the UK could improve as a result of tightening EU emission standards for cars and lorries and cleaner energy generation. Further, the spatial strategy set out within RPG10, which seeks to focus growth at existing centres, will help reduce the net distance that people in the region need to travel (e.g. to access work, services and facilities) and, alongside investment in public transport infrastructure, is expected to have benefits in terms of potentially reducing air pollution across the road network.

6.6 Assessing significance

Table 6.1 sets out guidance utilised during the assessment to help determine the relative significance of potential effects on the air quality objective. It should not be viewed as definitive or prescriptive; merely illustrative of the factors that were considered as part of the assessment process.

Table 6.1 Approach to determining the significance of effects on air quality

Effect	*Description*	*Illustrative Guidance*

[114] Defra (2007) The Air Quality Strategy for England, Scotland, Wales and Northern Ireland, /www.official-documents.gov.uk/document/cm71/7169/7169_i.asp

Effect	Description	Illustrative Guidance
++	Significant positive	• Alternative would significantly improve local air quality through a sustained reduction in concentrations of pollutants identified in the national air quality objectives. • Alternative has a strong and sustained positive effect on local communities and biodiversity due to a significant reduction in air and odour pollution and particulate deposition.
+	Positive	• Alternative would lead to a minor improvement in local air quality from a reduction in concentrations of pollutants identified in the national air quality objectives. • Alternative has a positive effect on local communities and biodiversity due to a reduction in air and odour pollution and particulate deposition.
0	No (neutral effects)	• Alternative would not affect local air quality. • Alternative has no observable effects on local communities and biodiversity within the region.
-	Negative	• Alternative would result in a minor decrease in local air quality. • Alternative has a negative effect on local communities and biodiversity due to an increase in air and odour pollution and particulate deposition.
--	Significant negative	• Alternative would cause a significant decrease in local air quality (e.g. leading to an exceedence of air Quality Objectives for designated pollutants and the designation of a new Air Quality Management Area). • Alternative has a strong and sustained negative effect on local communities and biodiversity due to significant increase in air and odour pollution and particulate deposition.
?	Uncertain	• From the level of information available the effects the impact that the alternative would have on this objective is uncertain.

6.7 Assessment of Significant Effects of Retention, Revocation and Partial Revocation

Table 6.2 summarises the significant effects identified in the detailed assessment of RPG10 policies against the air quality topic.

Table 6.2 Significant effects against the air quality topic

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
EN2 Retention	++	++	++	This policy relates specifically to air quality and sets out that development plans should include policies on the location of potentially polluting developments and sensitive developments in the vicinity of existing sources of pollution. The policy also looks to the

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				air quality management process and to the designation of AQMAs, stating that the planning process should have particular consideration to air quality in these areas. RES Regional Priority 3B 'Promote and enhance what is best about the region' reflects this policy in seeking to enhance environmental quality in order to raise the profile and image of the South West. In promoting the consideration of air quality as part of the plan preparation process, retention has been assessed as having a significant positive effect against the air topic.
EN2 Revocation	++	++	++	The NPPF states that 'planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of AQMAs and the cumulative impacts on air quality from individual sites in local areas' (Paragraph 124). Given the strong emphasis on air quality considerations within the NPPF (and existing air quality targets/legislation), it is expected that there will be similar significant positive effects in respect of the air topic to those identified for retention.
TRAN1 Retention	++	++	++	This policy seeks to reduce the need to travel by car. It sets out that development plans and local transport plans should focus development in existing towns alongside smaller scale housing and facilities provision in rural service centres to meet local needs. It also encourages mixed-use schemes and requires major development to be located on sites with, or incorporate, a good choice of sustainable transport. The policy is reflected under RES Priority 3A 'Improve transport networks' which seeks increased reliability of public transport infrastructure and promotes smarter travel choices Reducing the need to travel by car and encouraging the use of sustainable transport modes will help to minimise emissions to air and improve air quality. In consequence, retention has been assessed as having a significant positive effect against the air topic.
TRAN1 Revocation	++	++	++	In the short term there is not expected to be any significant change in the type and magnitude of effects associated with the revocation of Policy TRAN1 as most local plans have been in place since RPG10 was published (34 local authorities have plans in place which are in general conformity with RPG10). Section 4 (paragraphs 29-41) of the NPPF addresses the promotion of sustainable transport. The Framework refers to local planning authorities supporting a pattern of development which, where reasonable to do so, facilitates the use of sustainable modes of transport (paragraph 30). Further, paragraph 34 sets out that plans and decisions should ensure that developments that generate significant movements are located where the need to travel is minimised whilst paragraph 37 stipulates that planning policies should aim for a balance of land uses in order to minimise journey lengths. Revocation will not affect the existing Local Transport Plans adopted across the region which all seek to promote more sustainable forms of transport. In consequence, revocation has been assessed as having the same positive benefits as retention.
TRAN3 Retention	++	++	++	Policy TRAN3 relates to transport within and between the region's main urban centres and seeks to bring about a shift from car use to public transport, walking and cycling and encourages the use of heavy rail. It also sets out that local authorities, transport operators and other bodies should identify locations within urban areas which will maximise opportunities for transport integration and use of sustainable transport modes. In reducing the need to travel by car, this policy is expected to help tackle congestion and reduce emissions, contributing to improvements in air quality in the region's urban areas. This particularly reflects the fact that many of the region's main centres suffer

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				from existing air quality issues including, for example, Bristol. This policy is reflected under RES Priority 3A 'Improve transport networks' which seeks increased reliability of public transport infrastructure and promotes smarter travel choices with a view to reducing congestion in region's main urban areas. In consequence, retention has been assessed as having a significant positive effect against the air topic.
TRAN3 Revocation	++	++	++	In the short term there is not expected to be any significant change in the type and magnitude of effects associated with the revocation of Policy TRAN3 as most local plans have been in place since RPG10 was published (34 local authorities have plans in place which are in general conformity with RPG10). As highlighted above in respect of the revocation of Policy TRAN1, section 4 of the NPPF (paragraphs 29-41) addresses the promotion of sustainable transport. This includes ensuring developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised. Revocation will not affect the existing Local Transport Plans adopted across the region which all seek to promote more sustainable forms of transport. In consequence, revocation has been assessed as having the same positive benefits as retention.
TRAN5 Retention	++	++	++	This policy seeks the use of demand management measures (such as car parking and charging policies) and refers to regional parking standards to achieve a modal shift towards more sustainable transport. Such measures are likely to help discourage car use (helping to tackle congestion) and minimise emissions, contributing to improvements in air quality in localised areas. The policy is reflected under RES Priority 3A 'Improve transport networks' which seeks increased reliability of public transport infrastructure and promotes smarter travel choices with a view to reducing congestion in region's main urban areas In consequence, retention has been assessed as having a significant positive effect against the air topic.
TRAN5 Revocation	++	++	++	Section 4 (paragraphs 29-41) of the NPPF addresses the promotion of sustainable transport. This includes ensuring developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised National policy on local parking standards is set out in paragraph 39 of the NPPF. This leaves decisions on standards to the discretion of local authorities, whereas Policy TRAN4 adheres to the parking policy in the now withdrawn PPG13 which set quantified maximum parking standards across England and allowed regional strategies and local planning authorities only to adopt more rigorous standards. In line with the duty to co-operate local authorities are likely to consider setting consistent standards across local authority boundaries where it makes sense to do so, and to utilise the range of powers to control parking provision and enforcement powers under Part 6 of the Traffic Act 2004. Many local authorities in the South West may opt to set rigorous maximum standards similar to those referred to in Policy TRAN4 (although it is noted that the draft revised South West RSS did not identify specific standards). Revocation will result in no significant difference in effects to air where they do so. However, other local authorities may decide to take a less restrictive approach and allow higher parking provision where they consider this justified – for example by design considerations. The difference in

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				effects compared to local policy in line with Policy TRAN4 is uncertain but a substantial increase in parking provision over and above Policy TRAN4 standards could encourage significantly more trips by car and a corresponding rise in emissions to air and reduced air quality, depending on where the development was located. Notwithstanding, the NPPF is clear that developments that generate significant movement should be located where the need to travel will be minimised and the use of sustainable transport modes can be maximised. In consequence, revocation has been assessed as having the same positive benefits as retention.
TRAN10 Retention	++	++	++	Policy TRAN10 seeks to bring about a shift from car use to walking, cycling and public transport including by promoting attractive, safe and convenient pedestrian and cycle networks, requiring major developments to provide a choice of access by public transport, walking and cycling and seeking assessments and travel plans for all new major developments. If successful this could reduce private car use, reducing congestion and improving air quality. This policy is reflected under RES Priority 3A 'Improve transport networks' which seeks increased reliability of public transport infrastructure and promotes smarter travel choices. In consequence, retention has been assessed as having a significant positive effect against the air topic.
TRAN10 Revocation	++	++	++	In the short term there is not expected to be any significant change in the type and magnitude of effects associated with the revocation of Policy TRAN10 as most local plans have been in place since RPG10 was published (34 local authorities have plans in place which are in general conformity with RPG10). Section 4 (paragraphs 29-41) of the NPPF addresses the promotion of sustainable transport. This includes ensuring developments that generate significant movement are located where the need to travel will be minimised and the use of sustainable transport modes can be maximised. Paragraph 35 of the NPPF outlines that developments should be located and designed where practical to: • give priority to pedestrian and cycle movements, and have access to high quality public transport facilities; and • create safe and secure layouts which minimise conflicts between traffic and cyclists or pedestrians, avoiding street clutter and where appropriate establishing home zones. Further, the NPPF also requires the preparation of transports statements/assessments and travel plans for all developments likely to generate significant movements Policy TRAN10 does include reference to regional accessibility standards (set out at Annex A to RPG10). In line with the duty to co-operate local authorities may consider setting consistent standards across local authority boundaries where it makes sense to do so. This may lead to standards similar to in RPG10. Revocation will result in no significant difference in environmental effects where they do so. However, other local authorities may decide to take a less restrictive approach. The difference in effects compared to local policy in line with Policy TRAN10 can only be guessed, but substantially lower accessibility standards could increase car travel and a corresponding rise in air pollution, depending on where the development was located. Notwithstanding, the NPPF is clear that developments that generate significant movement should be located where the need to travel will be minimised and the use of sustainable transport modes can be maximised. Due to the provisions of the NPPF and the ongoing presence of the Local Transport

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				Plans, there would be similar significant benefits to air quality following revocation.

6.7.1 Effects of Revocation

A significant concern for the region is the increase in transport linked to the anticipated level of growth in homes and employment as well as airport development and minerals extraction. This could contribute significantly to air pollution particularly in those areas which are already subject to Action Plans for Air Quality Management.

The Regional Strategy therefore contains a range of policies which seek to address transport growth and to achieve more sustainable transport modes such as increased use of public transport, walking and cycling. Policies are also in place to concentrate growth in areas where access to public transport is possible. Other policies look to discourage car use and minimise the requirement for long distance travel including by promoting investment in public transport infrastructure and locating of facilities, such as waste facilities, in areas that minimise travel. There is also a specific air quality policy (Policy EN2) in place. Taken together the policies have the potential to limit the effects of traffic growth and contribute to improving air quality with the related benefits to human health, climate change and biodiversity. However, much will depend on a number of factors including whether the population does change behaviour.

It is difficult to predict the impact of revocation of these policies. However, the legal requirement to achieve the air quality standards set by European Directives, underpinned by national and locally derived solutions (for example, Action Plans for Air Quality Management Areas) is likely to have a greater effect on air quality than the policies in the Regional Strategy. This is reflected in paragraph 124 of the NPPF which states that planning policies should sustain compliance with and contribute towards EU limit values or national objectives for pollutants, taking into account the presence of Air Quality Management Areas and the cumulative impacts on air quality from individual sites in local areas. Planning decisions should ensure that any new development in Air Quality Management Areas is consistent with the local air quality action plan.

The spatial strategy set out in RPG10 seeks to focus development at the region's PUAs, improving the correlation between jobs, housing and services that will reduce the need to travel and reliance on the car. There is more uncertainty with respect to the type and magnitude of effects associated with the revocation of these policies on air quality in the medium to long term given that the distribution of development across the region may change. In this context, revocation could lead to a greater

proportion of development being directed away from the region's PUAs which may lead to an increase in travel (but may improve urban air quality).

6.7.2 Effects of Partial Revocation

The effects of partial revocation concern either:

- Revoking all the quantified and spatially specific policies (for instance where a quantum of development, land for development or amounts of minerals to be extracted or waste disposal is allocated to a particular location in the region) and retaining for a transitional period the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period all the spatially specific policies where a quantum of development or land for development is allocated to a particular location in the region and revoking the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period policies, ambitions and/or priorities, the revocation of which may lead to likely significant negative environmental effects.

The likely significant effects on air quality associated with the revocation and retention of the quantitative and spatially specific policies are summarised in **Table 6.2** for policies TRAN3, TRAN5 and TRAN10. However, in no instances were the air quality effects associated with the revocation or retention of these policies considered to be negative.

The combination of NPPF guidance, Local Transport Plan preparation and joint working on issues such as parking, accessibility and transportation infrastructure provision are expected to deliver similar significant positive effects to retention.

The assessment has also found that there are no policies in RPG10 where the act of revocation will cause a significant negative effect whilst retaining the same policy will maintain a significant environmental benefit.

6.7.3 Effects of Retention

Many of the policies contained within RPG10 seek to change behaviour (such as transport choice) or are outside the direct control of the planning system. Although the effects of encouraging walking/cycling will depend on the ability to change travel behaviour and the demand for transport, as well as other factors outside the scope of the planning system, policies which may encourage walking and cycling or public transport provision and use would have a beneficial effect on air quality.

Whether the Regional Strategy is revoked or not, the anticipated level of growth in homes and employment is expected to increase emissions to air which may generate localised adverse effects on air quality, particularly within urban areas. However, concentrating growth at the region's PUAs is likely to reduce the need to travel and reliance on the car which in-turn is expected to generate positive effects in relation to air quality.

6.8 Mitigation Measures

Given that all likely significant effects identified would be positive, no mitigating measures are proposed for this topic.

7. Climate Change

7.1 Introduction

The overview of plans and programmes and baseline information contained in this section provides the context for the assessment of potential effects of the proposals for revoking the regional strategies on climate change. Information is presented for both national and regional levels.

Climate change within this context in concerned with increasing the likelihood of climate change effects through greenhouse gas emissions and the ability to adapt to predicted climate change effects.

There are links between the climate change and other topics in the SEA, specifically biodiversity and nature conservation, air, climate change and material assets.

7.2 Summary of Plans and Programmes

7.2.1 International

The ***United Nations Framework Convention on Climate Change*** (UNFCCC) sets an overall framework for international action to tackle the challenges posed by climate change. The Convention sets an ultimate objective of stabilising greenhouse gas concentrations *"at a level that would prevent dangerous anthropogenic (human induced) interference with the climate system."* The Convention requires the development and regular update of greenhouse gas emissions inventories from industrialised countries, with developing countries also being encouraged to carry out inventories. The countries who have ratified the Treaty, known as the Parties to the Convention, agree to take climate change into account in such matters as agriculture, industry, energy, natural resources and where activities involve coastal regions. The Parties also agree to develop national programmes to slow climate change.

The ***Kyoto Protocol***, adopted in 1997, is the key international mechanism agreed to reduce emissions of greenhouse gases. The Kyoto Protocol sets binding targets for 37 industrialised countries and the European Community for reducing greenhouse gas emissions. These targets equate to an average of 5% reductions relative to 1990 levels over the five-year period 2008-2012. The key distinction between this and the UNFCCC is that the Convention encourages nations to stabilise greenhouse gases while the Kyoto Protocol commits them to doing so through greenhouse gas reductions. Countries must meet their targets primarily through national measures however, the Kyoto Protocol offers them an additional means of meeting their targets by way of three market-based mechanisms: emissions trading, the clean development mechanism (CDM) and Joint Implementation (JI).

The Protocol's first commitment period started in 2008 and ends in 2012. At the Durban conference in December 2011, governments decided that the Kyoto Protocol would move into a second commitment period in 2013, in a seamless transition from the end of the second commitment period in 2012. Governments of Parties to the Kyoto Protocol also made a few amendments to the Protocol, among others, the range of greenhouse gases covered. A major outcome of was the establishment of the Durban Platform for Enhanced Action, which spelt out a path to negotiate a new legal and universal emission reduction agreement by 2015, to be adopted by 2020.

In March 2007 the EU's leaders endorsed an integrated approach to climate and energy policy that aims to combat climate change and increase the EU's energy security while strengthening its competitiveness. They committed Europe to transforming itself into a highly energy-efficient, low carbon economy. It set a series of demanding climate and energy targets to be met by 2020, known as the "20-20-20" targets. These are:

- a reduction in EU greenhouse gas emissions of at least 20% below 1990 levels;
- 20% of EU energy consumption to come from renewable resources; and
- a 20% reduction in primary energy use compared with projected levels, to be achieved by improving energy efficiency.

To secure a reduction in EU greenhouse gases, the ***EU Emissions Trading Scheme (EU ETS),*** a Europe wide scheme had been introduced in 2005. EU ETS puts a price on carbon that businesses use and creates a market for carbon. It allows countries that have emission units to spare (emissions permitted to them but not "used") to sell this excess capacity to countries which are likely to exceed their own targets. Since carbon dioxide (CO_2) is the principal greenhouse gas, this is often described as a carbon market or trading in carbon; the total amount of carbon emissions within the trading scheme being limited, and reduced over time. The ***Integrated Climate and Energy Package*** included a revision and strengthening of the Emissions Trading System (ETS). A single EU-wide cap on emission allowances will apply from 2013 and will be cut annually, reducing the number of allowances available to businesses to 21% below the 2005 level in 2020. The free allocation of allowances will be progressively replaced by auctioning, and the sectors and gases covered by the system will be somewhat expanded.

- The **Renewable Energy Directive** 2009/28/EC mandates levels of renewable energy use within the European Union. The directive requires EU member states to produce a pre-agreed proportion of energy consumption from renewable sources such that the EU as a whole shall obtain at least 20% of total energy consumption from renewables by 2020. This is then apportioned across member states. The UK's target is for 15% of energy consumption in 2020 to be from renewable sources. Under Article 4 of the directive each

Member State is also required to complete a National Renewable Energy Action Plan that will set out the trajectory and measures that will enable the target to be met.

- The ***EU Sixth Environmental Action Plan (EAP) (2002-2012)*** reviews the significant environmental challenges and provides a framework for European environmental policy up to 2012. The four priority areas are Climate Change; Nature and Biodiversity; Environment and Health; Natural Resources and Waste. The European Commission has recently consulted on the EU environment policy priorities for 2020: Towards a 7th EU Environment Action Programme. This looks to further integrating climate and environment into other policies and instruments.

7.2.2 National

UK

In the UK, the ***Climate Change Act 2008*** introduces legislative targets for reducing the UK's impacts on climate change and the need to prepare for its now inevitable impacts. The Act sets binding targets for a reduction in CO_2 emissions of 80% by 2050, compared to a 1990 baseline. Interim targets and five-year carbon budget periods will be used to ensure progress towards the 2050 target. The Climate Change Act 2008 also requires the Government, on a regular basis, to assess the risks to the UK from the impact of climate change and report to Parliament. The first ***Climate Change Risk Assessment*** was published in 2012. Government will be required to publish and regularly update a programme setting out how the UK will address these likely impacts, based on the principles of sustainable development, thereby ensuring that environmental, economic and social issues are all fully considered. The Climate Change Act 2008 also introduced powers for Government to require public bodies and statutory undertakers (in this context these are utilities companies which provide a public service) to carry out their own risk assessments and make plans to address those risks.

The ***Carbon Plan: Delivering our low carbon future (2011)*** sets out how the UK will achieve decarbonisation within the framework of energy policy: to make the transition to a low carbon economy while maintaining energy security, and minimising costs to consumers, particularly those in poorer households. It includes proposals for energy efficiency, heating, transport and industry.

The ***Energy Act 2011*** provides for some of the key elements of the Government's energy programme and including a step change in the provision of energy efficiency measures to homes and businesses. It also makes improvements to the framework for enabling and securing low carbon energy supplies and fair competition in the energy markets.

England

The **National Planning Policy Framework** (2012) provides a set of core land-use planning principles that should underpin both plan-making and decision-taking. These include supporting "*the transition to a low carbon future in a changing climate, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy)*". The Framework underlines that planning's role in tackling climate change is central to the economic, social and environmental dimensions of sustainable development. Local planning authorities are therefore expected to adopt proactive strategies to mitigate and adapt to climate change (in line with the objectives and provisions of the Climate Change Act 2008), taking full account of flood risk, coastal change and water supply and demand considerations.

To support the move to a low carbon future, local planning authorities are expected to plan for new development in locations and ways which reduce greenhouse gas emissions; actively support energy efficiency improvements to existing buildings and have a positive strategy to promote energy from renewable and low carbon sources. Local plans are also expected to take account of climate change over the longer term, including factors such as flood risk, coastal change, water supply and changes to biodiversity and landscape. New development should be planned to avoid increased vulnerability to the range of impacts arising from climate change.

7.2.3 South West Region

The Climate South West (2010) report *Warming to the Idea: Building Resilience to Extreme Weather and Climate Change in the South West* highlights a range of potential climate change effects for the South West region.

7.3 Overview of the Baseline

7.3.1 National

UK

In 2010, UK emissions of the basket of six greenhouse gases covered by the Kyoto Protocol were estimated to be 590.4 million tonnes carbon dioxide equivalent (MtCO2e)[115]. This was 3.1% higher than

[115]DECC Statistical Release February 2012, http://www.decc.gov.uk/assets/decc/11/stats/climate-change/4282-statistical-release-2010-uk-greenhouse-gas-emissi.pdf

the 2009 figure of 572.5 million tonnes. Between 2009 and 2010 the largest increases were experienced in the residential sector, up 15.1%(11.8 MtCO2e), and the energy supply sector, up by 2.8%(5.6 MtCO2e). Emissions from all other sectors were relatively stable, compared to 2009 levels.

Carbon dioxide (CO_2) is the main greenhouse gas, accounting for about 84 per cent of total UK greenhouse gas emissions in 2010[91]. In 2010, UK net emissions of carbon dioxide were estimated to be 495.8 million tonnes (Mt). This was around 3.8% higher than the 2009 figure of 477.8 Mt. There were notable increases in emissions from the residential sector, up by 15.8%(11.8 Mt), and from the energy supply sector, up 3.1%(5.8 Mt). Again, emissions from all other sectors were relatively unchanged from 2009.

All areas of the UK are getting warmer, and the warming is greater in summer than in winter[116].

There is little change in the amount of precipitation (rain, hail, snow etc) that falls annually, but more is falling in the winter, with drier summers, for much of the UK[116]. Sea levels are rising, and are greater in the south of the UK than the north[116]. The widespread flooding events of 2007 cannot be directly attributed to climate change but it is expected to see more extreme rainfall events in the future, and hence more flooding as our climate changes.

England

In 2009 England's net emissions of CO_2 (by end user) were estimated to be 372 million tonnes, giving an estimate of 7.2 tonnes of CO_2 emissions per capita[117]. This compares to emissions of 433 million tonnes, giving an estimate of 8.6 tonnes of CO_2 emissions per capita in 2005.

In 2008, 29% of CO_2 emissions were from the energy supply sector, 20.3% from road transport, 31.1% from business and 24.1% from residential fossil fuel use.[118]

The 10 warmest years on record have occurred since 1997. Global temperatures for 2000-2008 now stand almost 0.2% warmer than the average for the decade 1990-1999.

Rainfall has decreased in summer and increased in winter since records began in 1766. Winter rainfall has been increasingly falling as heavy events over the past 45 years (rather than longer, more gentle rainfall). This kind of intense rainfall is a key factor in river and surface water flooding.

[116] Department for Energy and Climate Change: 2007 Greenhouse Gas Emissions, Final Figures 3rd February 2009, http://www.decc.gov.uk/assets/decc/202_20090326104955_e_@@_greenhousegasemissions.pdf
[117] DECC Statistical Release September 2011, http://www.decc.gov.uk/assets/decc/11/stats/climate-change/2750-statistical-summary-la-co2-emissions.pdf
[118] DECC http://www.decc.gov.uk/assets/decc/Statistics/climate_change/localAuthorityCO2/457-local-regional-co2-2005-2008-full-data.xls

The frequency of dry summers has increased over the decades, with 10 of the driest summers occurring in the last 30 years.

Sea levels around the UK have risen by 1mm/yr in the twentieth century, (corrected for land movement). The rate for the 1990s and 2000s has been higher. Rising sea levels are the result of various factors including the warming up and expansion of the ocean and the melting of low latitude glaciers due to climate change.

7.3.2 South West Region

Climate Change

Annual average daily mean temperature in the South West has increased by 1.37°C between 1961 and 2006, similar to annual trends in London, South East and East of England. However, this increase has been larger in winter (1.72°C) than in summer (1.41°C). A similar pattern exists for changes in average daily minimum and maximum temperature.

Table 7.1 Observed change in average daily temperature in the South West between 1961 and 2006, based on a linear trend (statistically significant at the 95% level)

	Spring	Summer	Autumn	Winter	Annual
Change in daily mean temperature (°C)	+1.40	+1.41	+1.15	+1.72	+1.37
Change in daily minimum temperature (°C)	+1.55	+1.65	+1.26	+1.89	+1.54
Change in daily maximum temperature (°C)	+1.23	+1.18	+1.07	+1.58	+1.21

Source: South West Observatory website on Observed Climate Trends in the South West, Temperature http://www.swenvo.org.uk/themes/atmosphere/climate-change/

Between 1961 and 2006, there has been increased seasonal and annual total precipitation in the South West, with the largest increase seen in autumn (28.6%). The only exception to this pattern is a small decrease in total precipitation during summer (8.8%). During the same time period, the South West has also experienced a small increase in the number of days of rain in autumn and winter and a small decrease in the number of days of rain in spring and summer.

Table 7.2 Observed change in precipitation totals and the number of days of rain in the South West between 1961 and 2006, based on a linear trend

	Spring	Summer	Autumn	Winter	Annual
Change in total precipitation (%)	4%	-8.8%	28.6%	15.9%	9.7%
Change in number of days with ≥1 mm rain	-1.4 days	-1.3 days	4.1 days	2.2 days	1.9 days

Source: South West Observatory website on Observed Climate Trends in the South West, Precipitation http://www.swenvo.org.uk/themes/atmosphere/climate-change/

Carbon Emissions

In 2009, the South West's net emissions of CO_2 were estimated to be 36 million tonnes, giving an estimate of 6.9 tonnes of CO_2 emissions per capita. This compares to emissions of 43 million tonnes, giving an estimate of 8.3 tonnes of CO_2 emissions per capita in 2005[119].

Table 7.3 Carbon Emissions (By End User in kt of CO_2)

Year	Industry and Commercial	Domestic	Road Transport	LULUCF	Total	Population ('000s, mid-year estimate)	Per Capita Emissions (t of CO2)
2005	16,015	13,157	11,906	859	41,937	5,085	8.3
2006	15,888	13,199	11,794	834	41,714	5,124	8.1
2007	15,454	12,713	11,880	816	40,862	5,178	7.9
2008	14,714	12,695	11,519	797	39,725	5,211	7.6
2009	12,560	11,619	11,049	801	36,029	5,231	6.9

Source: http://www.decc.gov.uk/assets/decc/11/stats/climate-change/2751-local-and-regional-co2-emissions-estimates.xls [Accessed June 2012]

Table 7.4 below sets out a summary, for each local authority area in the South West region, of carbon emissions within the scope of influence of local authorities for the industrial, domestic and transport sectors in the years 2005 and 2009, plus the per capita emissions and their percentage reductions since 2005.

[119] DECC Statistical Release, September 2011: http://www.decc.gov.uk/assets/decc/11/stats/climate-change/2751-local-and-regional-co2-emissions-estimates.xls

Table 7.4 CO2 emissions in the South West Region from 2005 to 2009

County and Unitary Authorities	Year	*Industry and Commercial (kt)*	*Domestic (kt)*	*Road Transport (kt)*	Total CO2 Emissions (kt)	Population ('000s, mid-year estimate)	Per Capita Emissions (t)	% per capita reduction since 2005
Bath & NE Somerset	2005	*402.6*	*439.3*	*259.2*	1101.1	172.6	6.4	
	2009	*325.0*	*380.2*	*235.2*	940.4	177.7	5.3	17.0%
Bournemouth	2005	*330.2*	*422.0*	*194.6*	946.8	160.5	5.9	
	2009	*289.2*	*357.7*	*173.3*	820.1	164.9	5.0	16.0%
Bristol, City of	2005	*1001.0*	*909.7*	*470.5*	2381.2	408.0	5.8	
	2009	*818.6*	*776.4*	*430.7*	2025.7	433.1	4.7	20.0%
Cornwall	2005	*1475.2*	*1460.2*	*1067.2*	4002.5	517.8	7.7	
	2009	*1192.7*	*1323.4*	*1007.8*	3523.8	531.1	6.6	14.0%
Devon	2005	*2195.2*	*1953.0*	*1631.3*	5779.5	728.6	7.9	
	2009	*1695.5*	*1749.1*	*1522.6*	4967.1	747.4	6.7	16.0%
Dorset	2005	*974.4*	*1105.5*	*890.4*	2970.3	400.1	7.4	
	2009	*847.1*	*972.7*	*819.2*	2639.0	404.2	6.5	12.0%
Gloucestershire	2005	*1827.5*	*1505.4*	*1048.7*	4381.6	576.3	7.6	
	2009	*1559.2*	*1326.8*	*949.4*	3835.5	589.2	6.5	14.0%
Isles of Scilly	2005	*7.3*	*8.9*	*0.5*	16.8	2.1	8.0	
	2009	*6.4*	*8.1*	*0.5*	15.1	2.2	6.8	14.0%
North Somerset	2005	*473.9*	*492.7*	*292.6*	1259.2	197.9	6.4	
	2009	*393.0*	*435.2*	*270.8*	1099.0	209.1	5.3	17.0%
Plymouth	2005	*615.9*	*523.0*	*349.7*	1488.6	248.2	6.0	
	2009	*509.7*	*442.3*	*320.2*	1272.2	256.7	5.0	17.0%
Poole	2005	*443.2*	*355.1*	*200.0*	998.3	138.2	7.2	
	2009	*392.8*	*304.7*	*178.4*	875.9	141.2	6.2	14.0%
Somerset	2005	*1675.4*	*1373.3*	*1091.2*	4139.8	515.0	8.0	
	2009	*1438.1*	*1229.0*	*1009.0*	3676.1	523.5	7.0	13.0%
South Gloucestershire	2005	*1069.7*	*582.6*	*418.1*	2070.4	255.4	8.1	
	2009	*596.0*	*511.0*	*386.0*	1493.0	262.2	5.7	30.0%
Swindon	2005	*744.5*	*454.3*	*320.0*	1518.7	186.9	8.1	
	2009	*613.8*	*403.7*	*301.0*	1318.5	198.8	6.6	18.0%
Torbay	2005	*255.8*	*312.9*	*154.3*	723.1	132.9	5.4	
	2009	*190.0*	*265.3*	*143.7*	599.0	134.0	4.5	18.0%
Wiltshire	2005	*1423.6*	*1259.6*	*1015.9*	3699.0	444.5	8.3	
	2009	*1221.8*	*1133.6*	*935.5*	3290.9	456.1	7.2	13.0%
South West Region	**2005**	***14915.1***	***13157.4***	***9404.2***	**37476.7**	**5085.0**	**7.4**	
	2009	***12088.9***	***11619.1***	***8683.1***	**32391.1**	**5231.4**	**6.2**	**16.0%**
England	*2005*	*152136.2*	*126347.7*	*85903.5*	*364387.3*	*50465.9*	*7.2*	
	2009	*126875.6*	*110275.1*	*78725.5*	*315876.2*	*51810.3*	*6.1*	*16.0%*

Source: DECC Local Authority Subset Dataset (2005-2009) at http://www.decc.gov.uk/assets/decc/11/stats/climate-change/2767-emissions-within-the-scope-of-influence-of-local-a.xls [Accessed June 2012]

In 2009 Devon had the highest proportion of the region's total emissions at 15% (4,967.1kt). This was

followed by Gloucestershire with 12% (3,835.5kt). Except for the Isles of Scilly, Torbay had the lowest emissions, with 2% (599kt) of the regional total.

Per capita emissions in the South West in 2009 were highest in Somerset (7.0t), which was 0.8 tonnes higher than the regional average of 6.2 tonnes and 0.9 tonnes higher than the average for England. Per capita emissions were lowest in Torbay (4.5t) and Bristol (4.7t), which were up to 1.7 tonnes lower than the regional average of 6.2 tonnes and about 1.6 tonnes lower than the average for England as a whole.

Renewable Energy[120]

At present only 1.6% of the region's energy is produced from renewable sources. There was a significant increase in the number of renewable energy installations in the South West between 2009/10 and 2010/11, due in part to the Feed-in Tarrifs which were made available in 2010. In 2011, the South West's renewable energy production stood at 200 MWs which was an increase of 12.8% compared to the 2010

There were 2,451 new renewable energy electricity projects installed in 2010/11 in the South West, of which 97% were domestic installations with the majority solar PV. Only 8 of the new installations exceeded 50kW.

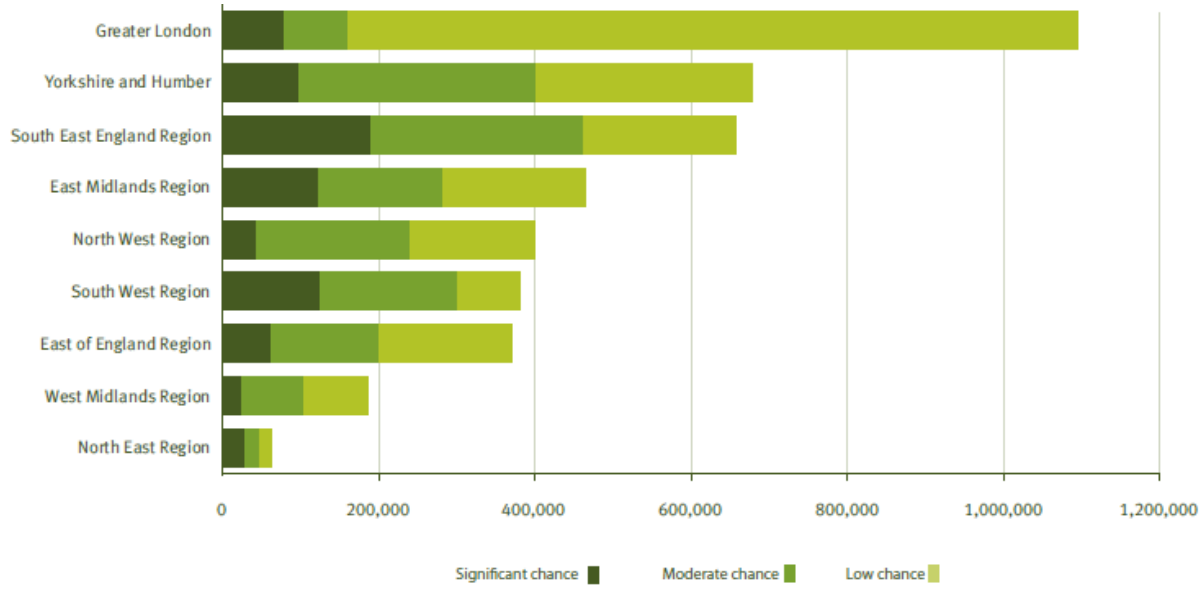
Technologies using waste as fuel accounted for 78% of the total renewable electricity produced in the region in 2008/2009. Landfill gas remained the greatest contributor, with 48% (74.8 MW) of the total. This was followed by onshore wind (36%), sewage gas combined heat and power (8%) and small scale hydro (6%) technologies.

Flooding

Climate change will influence future flooding events and vulnerable areas are most at risk from future events. It is estimated that under 400,000 people live in floodplains within the South West region; the fourth lowest number of any region in England.

Figure 7.1 Regions ranked by the number of people living in the floodplain

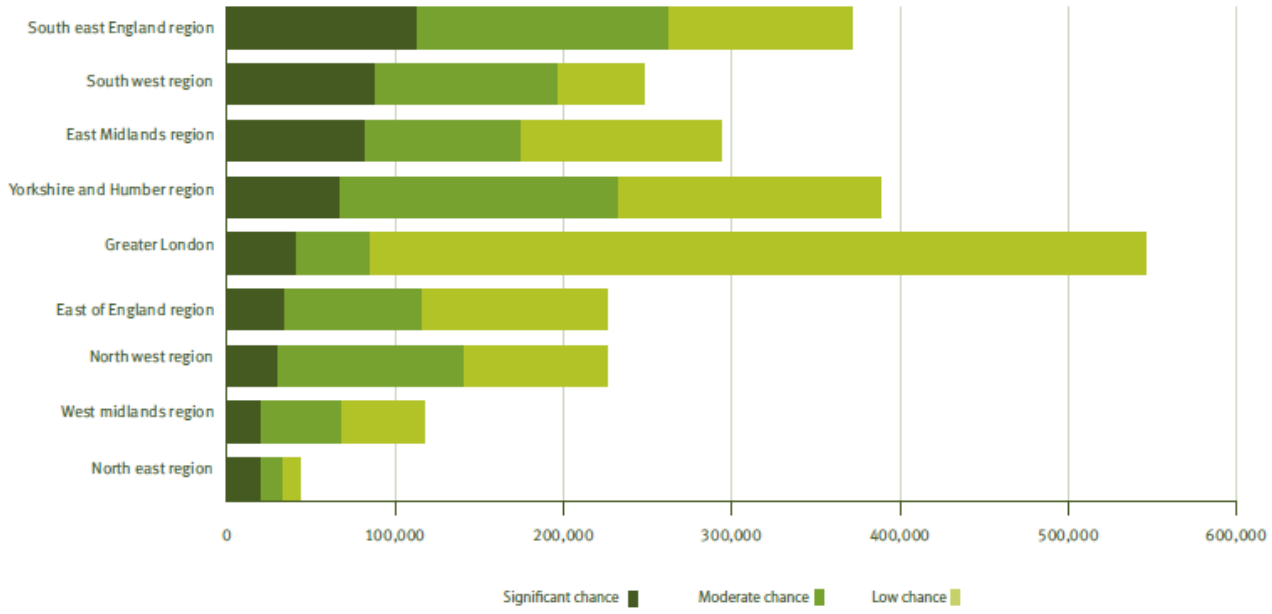
[120] South West Observatory website on Energy, Key Trends http://www.swenvo.org.uk/themes/energy



Source: Flooding in England: A National Assessment of Flood Risk, Environment Agency, 2009

However, of all the regions in England, the South West has the second highest number of properties (just over 100,000 properties) at significant risk of flooding from rivers and the sea.

Figure 7.2 Regions ranked by the number of properties at significant risk of flooding



Source: Flooding in England: A National Assessment of Flood Risk, Environment Agency, 2009

Absolute sea level (i.e. corrected for land movement) around the South West has risen by around 1

mm/yr over the 20th century (Proudman Oceanographic Laboratory), and there are indications that the increase has been at a faster rate than this in the 1990s and 2000s. The nature of land movement in the South West (where land levels are generally getting lower through time) is likely to enhance the effect of rising sea levels[121].

7.4 Environmental Characteristics of those Areas most likely to be Significantly Affected

7.4.1 National

UK

The main source for determining how the climate of the UK may change is the UK Climate Impacts Programme scenarios, published in 2009 and known as UKCP09. The UKCP09 findings indicate that all areas of the UK are getting warmer, and the warming is greater in summer than in winter. There is little change in the amount of precipitation (rain, hail, snow etc) that falls annually, but more is falling in the winter, with drier summers, for much of the UK. Sea levels are rising, and are greater in the south of the UK than the north[122].

The Climate Change Risk Assessment[123] (2012) outlines some of the most important risks and opportunities that climate change may present. It provides an indication of their potential magnitude, when they might become significant and the level of confidence in each finding. As well as the overall picture, specific findings are presented for five complementary themes: Agriculture & Forestry, Business, Health & Wellbeing, Buildings & Infrastructure and the Natural Environment. Key messages from the assessment include:

- Flood risk is projected to increase significantly across the UK. Increases in the frequency of flooding would affect people's homes and wellbeing, especially for vulnerable groups (e.g. those affected by poverty, older people, people in poor health and those with disabilities), and the operation of businesses and critical infrastructure systems. Annual damage to UK properties due to flooding from rivers and the sea currently totals around £1.3 billion. For England and Wales alone, the figure is projected to rise to between £2.1 billion and £12 billion by the 2080s, based

[121] Paragraph 7.7.8 of the South West Observatory's State of the South West 2010 report http://www.swo.org.uk/sotsw2010/environment/climate-change

[122] DECC (2007) http://www.decc.gov.uk/en/content/cms/what_we_do/lc_uk/loc_reg_dev/ni185_186/ni185_186.aspx

[123] Defra (2012) http://randd.defra.gov.uk/Document.aspx?Document=Summary_of_Key_Findings.pdf

on future population growth and if no adaptive action is taken.

- UK water resources are projected to come under increased pressure. This is a potential consequence of climate-driven changes in hydrological conditions, as well as population growth and the desire to improve the ecological status of rivers. By the 2050s, between 27 million and 59 million people in the UK may be living in areas affected by water supply-demand deficits (based on existing population levels). Adaptation action will be needed to increase water efficiency across all sectors and decrease levels of water abstraction in the summer months.

- Potentially, there are health benefits as well as threats related to climate change, affecting the most vulnerable groups in our society. These are likely to place different burdens on National Health Service (NHS), public health and social care services. For example, premature deaths due to cold winters are projected to decrease significantly (e.g. by between 3,900 and 24,000 by the 2050s) and premature deaths due to hotter summers are projected to increase (e.g. by between 580 and 5,900 by the 2050s). Other health risks that may increase include problems caused by ground-level ozone and by marine and freshwater pathogens.

- Sensitive ecosystems are likely to come under increasing pressure. Although some species could benefit, many more would be negatively impacted. These impacts would have knock-on effects on habitats and on the goods and services that ecosystems provide (e.g. regulating water flows, pollination services).

The UK is experiencing sea level rise of approximately 1mm per year. Global sea-level is rising at about 3mm per year[124]. Central England's temperature has risen by about 0.7ºC over the last century, with 2004 being the warmest on record[125]. Sea-surface temperatures around the UK coast have risen over the past three decades by about 0.7ºC. Global average temperatures are rising at about 0.2ºC per decade. Severe windstorms around the UK have become more frequent in the past few decades, though not above that seen in the 1920s. Annual mean precipitation over England and Wales has not changed significantly since records began; however seasonal rainfall appears to be decreasing in summer and increasing in winter[124] .

Key climate change include that the UK climate is warming and becoming more seasonal; climate changes are more pronounced in south-east of the UK compared to the north-west; sea levels are rising, and UK greenhouse gas emissions are falling with a target of an 80% cut in emissions by 2050 (compared to 1990 levels).

[124] Defra, Environment in your Pocket Statistics, 2009, http://www.defra.gov.uk/evidence/statistics/environment/eiyp/

7.4.2 South West Region

Greenhouse gas emissions from the South West contribute to the UK and global totals. They therefore play an important role in the achieving the UK targets for reducing greenhouse gas emissions, although the influence on global effects is minimal. However, climate change will have direct effects across the region.

Agriculture is an important user of water in the region, with many crops requiring irrigation to ensure high quality and good yields. It is also expected that as the climate changes, there will be significant effects on biodiversity and the distribution of species and habitats. In built up areas the urban heat island effect is likely to intensify.

7.5 Likely Evolution of the Baseline

7.5.1 National

UK

There has been a steady decrease in the 6 greenhouses gases of the Kyoto basket since 1990. In 2009 566.3 million tonnes of CO_2 equivalent were emitted from the UK, which was a 27.2% decrease compared to volumes emitted in 1990 and a 8.2% decrease compared to values in 2008. However, provisional results for 2010 estimate 582.4 million tonnes of CO2 equivalent were emitted giving an increase of 2.8% compared to 2009 values[126].

UKCP09 provides the following prediction on changes to climate within the UK based on the medium emission scenario with 90% probability[127]:

- **2080 mean winter temperature**: the central estimates of change are projected to be generally between 2 and 3ºC across most of the country, with slightly larger changes in the south-east and slightly smaller in the north-west of Britain.
- **2080 mean summer temperature**: a more pronounced south to north gradient exists with changes in some parts of southern England being just over 4ºC and in parts of northern Scotland about 2.5ºC.

[126] DECC (2011) 2010 Provisional GHG emissions http://www.decc.gov.uk/publications/basket.aspx?filetype=4&filepath=Statistics%2fclimate_change%2f1514-ghg-emissions-provisional-2010.xls&minwidth=true#basket

[127] UKCP09 http://ukclimateprojections.defra.gov.uk/content/view/515/499/

- **2080 mean summer daily maximum temperature**: central estimates show a gradient between parts of southern England, where they can be 5ºC or more, and northern Scotland, where they can be somewhat less than 3ºC.

- **2080 mean annual precipitation**: shows little change (few percent or zero).

- **2080 mean winter precipitation:** increases are in the range +10 to +30% over the majority of the country. Increases are smaller than this in some parts of the country, generally on higher ground.

- **2080 mean summer precipitation**: general south to north gradient, from decreases of almost 40% in SW England to almost no change in Shetland.

- The range of absolute sea level rise around the UK (before land movements are included) and across the three emissions scenarios is projected to be between 12 and 76 cm for the period 1990–2095, which is a wider spread than that of the global average.

- The projected long-term future trends in storm surge that we find in UKCP09 are physically small everywhere around the UK, and in many places can be accounted for by natural variability. The surge level we expect to be exceeded on average once in 2, 10, 20 or 50 yr is not projected to increase by more than 9 cm by 2100 anywhere around the UK coast (not including the mean sea level change). The largest trends are found in the Bristol Channel and Severn Estuary.

- Seasonal mean and extreme waves are generally expected to increase to the South West of the UK, reduce to the north of the UK and experience a small change in the southern North Sea. Changes in the winter mean wave height are projected to be between –35 and +5cm. Changes in the annual maxima are projected to be between –1.5 and +1m.

The Climate Change Act 2008 was passed in November 2008 and creates a new approach to managing and responding to climate change in the UK. This includes putting in place legally binding targets with the aim of reducing emissions by at least 80% by 2050 (compared to 1990 levels) and a set of five-year carbon budgets (legally binding limits on the total quantity of greenhouse gas emissions that the country produces over a five year period) to 2022. Included within the Fourth Carbon Budget the Committee on Climate Change is the recommendation for an indicative 2030 target to reduce emissions by 60% relative to 1990 levels (46% relative to 2009 levels)[128].

The Carbon Plan 2011 explains that if the UK is to cut emissions by 80% by 2050, there will have to be

[128] Committee on Climate Change (2010) Fourth Carbon Budget, http://www.theccc.org.uk/reports/fourth-carbon-budget

major changes in how energy is generated and used. Energy efficiency will have to increase dramatically across all sectors. The oil and gas used to drive cars, heat buildings and power industry will, in large part, need to be replaced by electricity, sustainable bioenergy, or hydrogen. Electricity will need to be decarbonised through renewable and nuclear power, and the use of carbon capture and storage (CCS). The electricity grid will be larger and smarter at balancing demand and supply. In the next decade, the UK is expected to complete the installation of proven and cost effective technologies that are worth installing under all future scenarios. All cavity walls and lofts in homes, where practicable, are expected to be insulated by 2020. The fuel efficiency of internal combustion engine cars will improve dramatically, with CO_2 emissions from new cars set to fall by around a third. Many of our existing coal-fired power stations will close, replaced primarily by gas and renewables. More efficient buildings and cars will cut fuel costs. More diverse sources of electricity will improve energy security and reduce exposure to fossil fuel imports and price spikes. As part of this, the UK is committed to delivering 15% of its energy from renewable sources by 2020.

England

In 2009 England's emissions of the basket of six greenhouse gases covered by the Kyoto Protocol were provisionally estimated to be 436 million tonnes CO_2 equivalent which is a 29.5% decrease compared to emissions in 1990[129].

UKCP09 provides the following changes in climate for England in 2080 based on a medium emission scenario with 90% probability[130]:

- **2080 mean winter temperature**: a change in temperature from 4.0ºC in the Northwest to 4.7ºC in the South and East of England.
- **2080 mean summer temperature**: a change in temperature from 5.4ºC in Yorkshire to 6.5ºC in the South East.
- **2080 mean winter precipitation:** increases are in the range 41% in the East Midlands to 54% in the South West.
- **2080 mean summer precipitation**: no change is expected in Yorkshire to a 7% increase in the South East and London.

England shares the same targets related to climate change and energy use as the rest of the UK.

[129] National Atmospheric Emissions Inventory , Devolved Administration End User GHG Emissions Data http://uk-air.defra.gov.uk/reports/cat07/1109061103_DA_GHGI_report_2009_Main_text_Issue_1.pdf
[130] UKCP09 http://ukclimateprojections.defra.gov.uk/content/view/515/499/

Although there are additional targets on a regional and local authority level contained within strategies there are too many to mention for the purposes of this report.

7.5.2 South West Region

Based on UKCP09 forecasts, the data in **Table 7.5** below provides an overview of the projected changes in climate for the South West for the 2020s, 2050s and 2080s under the central estimate of the medium emissions scenario.

Table 7.5 South West climate change projections for 2020, 2050 and 2080

Potential change		In the 2020s	In the 2050s	In the 2080s
Hotter summers	Increase in summer mean temperature	+1.6oC (0.5oC to 2.7oC)	2.7oC (1.3oC to 4.6oC)	3.1oC (1.4oC to 5.1oC)
	Increase in mean daily maximum temperature	2.1oC (0.5oC to 4oC)	3.8oC (1.4oC to 6.8oC)	4.3oC (1.7oC to 7.6oC)
	Increase in mean daily minimum temperature	1.6oC (0.5oC to 2.9oC)	2.9oC (1.2oC to 5oC)	3.3oC (1.5oC to 5.5oC)
Warmer winters	Increase in mean temperature	+1.3oC (0.6oC to 2oC	2.1oC (1.1oC to 3.2oC)	2.3oC (1.3oC to 3.5oC)
Change in precipitation	Change in annual mean precipitation	0% (-5% to 6%)	0% (-5% to 6%)	0% (-6% to 6%)
Wetter winters	Change in winter mean precipitation	7% (-2% to 20%)	17% (4% to 38%)	18% (3% to 41%)
Drier summers	Change in summer mean precipitation	-8% (-27% to 14%)	-20% (-42% to 7%)	-20% (-45% to 8%)

Source: South West Observatory website on Observed Climate Trends in the South West, Climate change projections in the South West (UKCP09) http://www.swenvo.org.uk/themes/atmosphere/climate-change/

Climate change is expected to increase the risk of river and urban flooding in the South West. The long, varied coastline of the South West will also be affected by rising sea levels and more frequent storms with an expected increase in the risk of flooding for low lying coastal communities. **Table 7.6** highlights projected sea level rise in the region.

Table 7.6 Projected sea level rise in the South West 2040s and 2080s (Under a medium emissions scenario, central estimate, including land movement)

	2040	2080
Weston-super-Mare	18 cm	37 cm
Newlyn	20 cm	40 cm
Poole	18 cm	37 cm

Source: South West Observatory (2010) State of the Environment 2010, available from http://www.swenvo.org.uk/themes/atmosphere/climate-change [Accessed June 2012]

In the South West region, around 81,019 households and businesses are within the Environment Agency's Flood Zone 2 and have an annual probability of flooding of between 1 in 1000 (0.1%) and 1 in 100 (1%) in the case of river flooding, or 1 in 200 (0.5%) in relation to coastal flooding. By the 2080's, it is expected that inland flooding will have increased by four to six times compared to present levels, with a 1 in 100 event becoming a 1 in 17 event.

The Climate South West (2010) report *Warming to the Idea: Building Resilience to Extreme Weather and Climate Change in the South West*, highlights a range of other potential climate change effects for the South West region including (but not limited to):

- potential increases in water demand for household, irrigation and industrial uses, as population rises, summer rainfall decreases and temperatures increase;
- potential decreases in water supply as summer rainfall decreases and temperatures rise;
- increased risk of flushing of nitrates and harmful organisms such as cryptosporidium into groundwater and watercourses in wetter winters with consequent human health impacts. More prolonged dry periods will also increase this risk, due to the organisms being washed into watercourses when the first flush of rainstorms arrive;
- reduced water quality in summer as lower river flows will mean less dilution of pollutants; and
- reduced summer rainfall and more frequent droughts will put pressure on water supplies.

The South West is likely to see less than 5% of the region's energy being produced from renewable sources by 2020. Analysis by Regen SW indicated that generating 15% to 20% of all energy consumed in the South West from renewables was theoretically possible by 2020, but would require urgent changes in national policy and stronger support from decision makers at a local level[10].

7.6 Assessing significance

Table 7.7 sets out guidance utilised during the assessment to help determine the relative significance of potential effects on climate change. It should not be viewed as definitive or prescriptive; merely illustrative of the factors that were considered as part of the assessment process.

Table 7.7 Approach to determining the significance of effects on climate change and energy use

Effect	*Description*	*Illustrative Guidance*
++	Significant positive	• Alternative would significantly reduce carbon footprint of region (by >34% by 2020 compared to a 1990 baseline). • Alternative will increase resilience/decrease vulnerability to climate change in the wider environment.
+	Positive	• Alternative would reduce carbon footprint of region (by <34% by 2020 compared to 1990). • Alternative may increase resilience/decrease vulnerability to climate change in the wider environment
0	No (neutral effects)	• Alternative would not lead to an overall change in greenhouse gas emissions in a way that will not contribute to climate change or resilience to climate change within the wider environment.
-	Negative	• **Alternative would increase carbon footprint of region (by <10% by 2020 compared to 1990).** • Alternative may decrease resilience/increase vulnerability to climate change in the wider environment. • Alternative could result in increase in people or property at risk or affected by flooding, coastal inundation or sea level rise.
--	Significant negative	• **Alternative would increase carbon footprint of region (by >10% by 2020 compared to 1990).** • Alternative will decrease resilience/increase vulnerability to climate change in the wider environment. • Alternative could result in increase in significant number of people or property affected by flooding, coastal inundation or sea level rise.
?	Uncertain	• From the level of information available the impact that the alternative would have on this objective is uncertain.

7.7 Assessment of Significant Effects of Retention, Revocation and Partial Revocation

Table 7.8 summarises the significant effects identified in the detailed assessment of RPG10 policies against the climate change topic.

Table 7.8 Significant effects against the climate change and energy use topic

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
RE2 Retention	++	++	++	This policy seeks to protect the development of land liable to river and coastal flooding, promoting the adoption of a sequential approach to land allocation having regard to flood risk. It also encourages the use of SuDS and requires development plans to identify areas at risk from flooding and provide criteria for proposals in flood plains. In seeking to reduce flood risk, retention has been assessed as having a significant positive effect against the climate change topic.
RE2 Revocation	++	++	++	The NPPF and technical guidance on flood risk published alongside the framework sets out how local authorities should manage flood risk and would be unaffected by revocation of the Regional Strategy. Following revocation, local authorities will be expected to continue to work together across administrative boundaries and with the Environment Agency to plan development that properly minimises the effects of climate change, particularly from flooding and coastal change. For flooding matters, local authorities already have a duty to co-operate under the Floods and Water Management Act 2010. This contains provisions that cover regional working and co-operation such as the establishment of Regional Flood and Coastal Committees and the bringing together of lead local flood authorities (unitary and county councils), who will have a duty to co-operate, to develop local strategies for managing local flood risk. In addition, the Flood Risk Regulations 2009 imposes a duty on the Environment Agency and lead local flood authorities to determine whether a significant flood risk exists in an area and if so to prepare flood hazard maps, flood risk maps and flood risk management plans. In consequence, the significant positive effects from addressing this issue will be similar to those from retaining the policy.
RE5 Retention	++	++	++	This policy seeks to reduce reliance on landfill, promoting a mix of waste recovery methods and seeking to increase recycling/composting. Reducing the volume of waste sent to landfill will result in a decrease in greenhouse gas emissions associated with the landfill process itself, the reduction in the need for the extraction of new resources (and associated emissions) linked with increased recycling and the potential for renewable energy generation from, for example, anaerobic digestion and energy from waste facilities. Policy RE5 also gives priority to the provision of facilities at or near to the region's PUAs which should help to minimise the transportation of waste and associated emissions which will generate additional benefits in relation to climatic factors. In consequence, retention has been assessed as having a significant positive effect against the climate change topic.
RE5 Revocation	++	++	++	Revocation is likely to result in similar significant positive effects on climatic factors as those associated with retention. Waste planning authorities will still be required to comply with national policy in Planning Policy Statement 10, the NPPF and the National Waste Management Plan for England as it emerges, as well as their legal obligations under the Waste (England and Wales) Regulations 2011. Whilst Policy RE5 contains 'regional' targets, these are not apportioned at the sub-regional scale and in any case (being based on the Waste Strategy 2000) they have been subsequently revised. Further, although sub-regional municipal and commercial and industrial waste capacity targets were included in the draft revised RSS (see Appendix C), waste planning authorities will still be required to plan for the waste management needs in their area, driving waste management up the hierarchy, helping to implement the international and national waste legislation and take more responsibility for their own waste. Each waste planning authority should set out its ambitions for additional waste management capacity required,

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				based on an assessment of existing and forecast waste arisings, and should monitor to enable it to adapt if required. All 6 waste plans in the South West were adopted following the publication of RPG10. Three (Devon, Bournemouth/Dorset/Poole, and Gloucestershire) seek to comply with the objectives set out in the plan, whilst the remaining (Plymouth, Wiltshire and the Bath and North Somerset joint waste core strategies) draw on Waste Strategy 2007 and more up-to-date objectives. Bath and North East Somerset seek to exceed European obligations. Achievement of present legal and national targets will require a step change in provision for recycling, composting and recovery, but decisions about how targets are met should take account of local circumstances. The policy allows for the range, type, capacity and location of new waste and/or expanded waste management facilities and their operational arrangements to be determined by the waste planning authority (or authorities) concerned, informed by relevant appraisals. The duty to co-operate will assist to ensure waste planning authorities work together, whilst ensuring waste is handled safely, and enabling waste to be disposed of in one of the nearest appropriate installations. Additionally, in line with paragraph 218 of the Framework, waste planning authorities may also continue to draw on evidence that informed the preparation of regional strategies to support local plan policies, supplemented as needed by up-to-date, robust local evidence.
RE6 Retention	++	++	++	This policy stipulates that local authorities, energy suppliers and other bodies should reduce greenhouse gas emissions, increasing renewable energy production and promoting energy conservation measures (e.g. through design, layout and construction techniques). The RES also highlights energy use and climate change as a critical issue and under Priority 1A 'Support business productivity' seeks increased business resource efficiency. In consequence, retention has been assessed as having a significant positive effect against the climate change topic.
RE6 Revocation	++	++	++	RPG10 refers to national targets for reductions in greenhouse gas emissions (to 2012 only) and also sets out a target for a minimum of 11-15% of electricity production to be from renewable energy sources by 2010 although this is not apportioned between local authorities and in any case the targets are outdated. It should also be noted that the draft revised RSS included county level onshore renewable electricity capacity targets to 2010 alongside region-wide targets to 2020 which equated to approximately 20% of regional electricity demand to be generated from renewable sources. However, there is already in place a nationally legally-binding target to ensure 15% of energy comes from renewable sources by 2020 (in accordance with the Renewables Energy Directive (2009/28/EC)) including approximately 30% of electricity demand. The UK National Renewable Action Plan 2010 sets out the UK's path to meet it. The renewable energy policies in all adopted local plans and/or core strategies in the region have been examined and are presented in Appendix C. The analysis shows that, consistent with that approach, local plans and/or core strategies do not include overall targets for the production of renewable energy at local authority level. Some local plans (particularly those adopted before or around the same time as RPG10) do not contain policies on renewable energy and for these authorities there is clear policy gap. Other plans contain policies that support the production of renewable energy but do not include a target for its generation for the local authority areas. Many of the more recently adopted local plans and core strategies as well as emerging plans in the region contain policies which encourage a certain proportion of on-site renewable and/or decentralised renewable or low carbon energy and require it to be provided for developments over a certain specified size. One of the 12 core principles of planning set out in paragraph 17 of the NPPF is to support the transition to a low carbon future, taking full account of flood risk and coastal

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy). Similarly, paragraph 94 of the NPPF states that local planning authorities should adopt proactive strategies to mitigate and adapt to climate change in line with the provisions of the Climate Change Act 2008. Under the Climate Change Act 2008, the UK now has a legally binding target to reduce greenhouse gas emissions by 80% by 2050 and a reduction in emissions of at least 34% by 2020, based on a 1990 baseline. There is also a carbon budgeting system that caps emissions over five-year periods, with the first three carbon budgets covering 2008-12, 2013-17 and 2018-22. Under the Renewable Energy Directive, there is also now a legally-binding target to ensure 15% of energy comes from renewable sources by 2020 in the UK. The Carbon Plan 2011 sets out how the UK is to meet this. National Planning Statement EN-3 Renewable Energy Infrastructure is identified as being helpful to local planning authorities (LPAs) in preparing their local impact reports. In England and Wales this NPS is likely to be a material consideration in decision making on relevant applications that fall under the Town and Country Planning Act 1990 (as amended). Whether, and to what extent, this NPS is a material consideration will be judged on a case by case basis. The NPS covers energy from biomass >50MW, offshore wind >100MW and onshore wind >50MW. Taking into account the coverage of renewable energy policies in adopted and emerging local authority plans, the (more recent) national targets for greenhouse gas emissions reduction and renewable energy and the provisions of the NPPF and National Planning Statement EN-3, it is expected that the significant positive effects associated with revocation will be similar to those from retention.

7.7.1 Effects of Revocation

The South West will be increasingly affected by climate change as the century progresses. A decrease in summer rainfall and an increasing unpredictability in weather patterns is likely to lead to water stress within the region, particularly in the summer months when visitor numbers are at their highest. The effects of flash flooding have already been felt in some communities and these types of events are likely to increase in number as a result of climate change.

There are two key aspects to climate change considered in this assessment. The first is the extent to which the region mitigates its emissions of greenhouse gases. The second is the extent to which RPG10 facilitates adaptation to the effects of climate change.

The overarching spatial approach of RPG10 which is to concentrate development within the PUAs, accessible to local services and facilities is supported by specific topic based policies concerned with the promotion of sustainable (low and carbon-free) modes of transport and the recycling and re-use of aggregates and minerals. In combination these policies will have a positive effect in the reduction of greenhouse gas emissions. This generally positive approach is further strengthened by specific policies

concerned with the minimisation of waste (Policy RE5) and the generation of renewable energy (Policy RE6) which are considered to generate significant positive effects on this topic.

Revocation of policies RE5 and RE6 will not affect the performance of the region in respect of its ability to mitigate climate change. Almost all of the local planning authorities in the region have adopted local plans and/or core strategies which include policy approaches that are complementary to RPG10 and these are unlikely to change significantly in the short to medium term. Furthermore Government legislation sets targets for renewable energy generation and waste recycling which are higher than those required by RPG10. For example, the Climate Change Act 2008 creates a new approach to managing and responding to climate change in the UK and it includes legally binding targets with the aim of reducing emissions by at least 80% by 2050 (compared to 1990 levels). In addition the Renewable Energy Directive sets a target of 15% renewable energy generation, and 30% renewable electricity generation, by 2020. The Carbon Plan 2011 explains that there will have to be major changes in how energy is generated and used. Energy efficiency will have to increase dramatically across all sectors including through more efficient buildings and cars.

The NPPF seeks to support the move to a low carbon future via planning policy, by stating that local planning authorities should plan for new development in locations and ways which reduce greenhouse gas emissions; actively support energy efficiency improvements to existing buildings; and when setting any local requirement for a building's sustainability, do so in a way consistent with the Government's zero carbon buildings policy and adopt nationally described standards. Specifically, local planning authorities are expected to identify opportunities where development can draw its energy supply from decentralised, renewable or low carbon energy supplies.

RPG10 Policy RE2 Flood Risk was considered to have significant positive effects with regard to its ability to support the adaptation of the region to the effects of climate change. Revocation of this policy will not affect the positive outcomes identified. This is because good urban design which is promoted within the NPPF will play an important role in climate change adaptation combining green infrastructure linked to Sustainable Drainage Systems (SuDS) within and around developments with designs for buildings and spaces that require less water and support concepts such as urban cooling.

One of the 12 core principles of planning set out in paragraph 17 of the NPPF is to support the transition to a low carbon future, taking full account of flood risk and coastal change, and encourage the reuse of existing resources, including conversion of existing buildings, and encourage the use of renewable resources (for example, by the development of renewable energy). Similarly, paragraph 94 of the NPPF states that local planning authorities should adopt proactive strategies to mitigate and adapt to climate change.

Following revocation of regional strategies, local authorities will be expected to continue to work together across administrative boundaries and with the Environment Agency to plan development that properly

minimises the effects of climate change, particularly from flooding and coastal change. For flooding matters, local authorities already have a duty to co-operate under the Floods and Water Management Act 2010. This contains provisions that cover regional working and co-operation such as the establishment of Regional Flood and Coastal Committees and the bringing together of lead local flood authorities (unitary and county councils), who will have a duty to co-operate, to develop local strategies for managing local flood risk. In addition, the Flood Risk Regulations 2009 imposes a duty on the Environment Agency and lead local flood authorities to determine whether a significant flood risk exists in an area and if so to prepare flood hazard maps, flood risk maps and flood risk management plans.

7.7.2 Effects of Partial Revocation

The effects of partial revocation concern either:

- Revoking all the quantified and spatially specific policies (for instance where a quantum of development, land for development or amounts of minerals to be extracted or waste disposal is allocated to a particular location in the region) and retaining for a transitional period the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period all the spatially specific policies where a quantum of development or land for development is allocated to a particular location in the region and revoking the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period policies, ambitions and/or priorities, the revocation of which may lead to likely significant negative environmental effects.

The likely significant effects on climate change associated with the revocation and retention of the quantitative policies are summarised in **Table 7.9** for policies RE5 and RE6. However, in no instances were the climate change effects associated with the retention or revocation of these policies considered to be negative. With respect to Policy RE6 in particular, revocation will not affect the intent to reduce greenhouse gas emissions. One of the 12 core principles of planning set out in paragraph 17 of the NPPF is to support the transition to a low carbon future. Further, whilst RPG10 refers to national targets for greenhouse gas emissions and regionally-set targets for electricity production from renewable sources, these are now outdated and have been superseded by the targets set out under the Climate Change Act 2008 and Renewable Energy Directive.

The assessment has found that there are no policies in RPG10 where the act of revocation will cause a significant negative effect whilst retaining the same policy will maintain a significant environmental benefit.

7.7.3 Effects of Retention

Retaining the Regional Strategy would see continuation of the baseline identified above. The more recent legislative and national policy requirements which have come into effect since the Regional Strategy was adopted would in most cases steer development choices in the region, particularly as the relevant targets contained within the Regional Strategy are becoming increasingly out of date.

7.8 Mitigation Measures

Given that all likely significant effects identified would be positive, no mitigating measures are proposed for this topic.

8. Material Assets

8.1 Introduction

The overview of plans and programmes and baseline information contained in this section provides the context for the assessment of potential effects of the proposals on revoking the regional strategies on material assets including waste and minerals. Information is presented for both national and regional levels.

Waste management in this context is defined as the processing, recycling or disposal of a range of waste types including municipal, commercial and industrial, construction, excavation and demolition and hazardous wastes. However, it is important to note that consideration of the management of waste links to a number of other SEA topics, the most relevant being climate change given the potential for waste to be recovered for energy use.

8.2 Summary of Plans and Programmes

8.2.1 International

The ***Waste Framework Directive*** 75/442/EEC as amended by 91/156/EEC, 91/92/EEC and 2008/98/EC provides the overarching framework for waste management at the EU level. It relates to waste disposal and the protection of the environment from harmful effects caused by the collection, transport, treatment, storage and tipping of waste. In particular, it aims to encourage the recovery and use of waste in order to conserve natural resources. The key principles of the Directive include the 'Waste Management Hierarchy' which stipulates waste management options based on their desirability. In order, these are: prevention; preparing for re-use; recycling; other recovery, e.g. energy recovery; and disposal. Key objectives are to reduce the adverse impacts of the generation of waste and the overall impacts of resource use. This should be done through a variety of mechanisms, including:

- by 2020 requiring member states to recycle 50% of their household waste and 70% of their non-hazardous construction and demolition waste;
- applying the waste hierarchy - promoting waste minimisation followed by reuse and recycling , other recovery (such as energy recovery) and disposal - as a priority order in waste prevention and management legislation and policy;
- ensuring that four specified materials (paper, metal, plastics and glass) are collected separately by 2015,

- taking measures as appropriate to promote the re-use of products and preparing for re-use activities; and
- extending the self-sufficiency and proximity principles to apply to installations for recovery of mixed municipal waste from households.

The Directive was transposed into English legislation through the Waste (England and Wales) Regulations 2011 (SI2011 No.988).

A compromise agreement was reached between the Council of Environment Ministers and the European Parliament in June 2008 on revisions to the Waste Framework Directive. The main changes include EU-wide targets for reuse and recycling 50% of household waste by 2020, and for reuse, recycling and recovery of 70% of construction and demolition waste by 2020. In this context, the ***Landfill Directive*** (European Commission, 1999) focuses on waste minimisation and increasing levels of recycling and recovery. The overall aim of the Directive is to prevent or reduce as far as possible negative effects on the environment, in particular the pollution of surface water, groundwater, soil and air and on the global environment, including the greenhouse effect as well as any resulting risk to human health from the landfilling of waste, during the whole lifecycle of the landfill. The Directive sets the target of reducing biodegradable municipal waste landfilled to 35% of that produced in 1995 by 2020.

There are a number of **Producer Responsibility Directives** relating specifically to consumer products. Their purpose is to require businesses to reuse, recover and recycle waste which comes from products they produce, and each Directive sets national targets for recovery and recycling of these wastes.

The ***EU Thematic Strategy on the Prevention and Recycling of Waste (2002-2012)*** is a long-term strategy aims to help Europe become a recycling society that seeks to avoid waste and uses waste as a resource.

The ***Basel Convention*** came into force in 1992 and is a global agreement, ratified by several member countries and the European Union, for addressing the problems and challenges posed by hazardous waste. The key objectives of the Basel Convention are:

- to minimise the generation of hazardous wastes in terms of quantity and hazardousness;
- to dispose of them as close to the source of generation as possible; and
- to reduce the movement of hazardous wastes.

8.2.2 National

UK

Environmental Permitting (England and Wales) Regulations 2010 SI 675 provides a system for environmental permits and exemptions for industrial activities, mobile plant, waste operations, mining waste operations, water discharge activities, groundwater activities and radioactive substances activities. It also sets out the powers, functions and duties of the regulators.

England

The **Waste Strategy (2007)** translates the principles of the previous EU Waste Framework Directive into UK policy. Its key objectives include:

- Decoupling waste growth (in all sectors) from economic growth and put more emphasis on waste prevention and re-use.
- Meeting and exceeding the Landfill Directive diversion targets for biodegradable municipal waste in 2010, 2013 and 2020.
- Increase diversion from landfill of non-municipal waste and secure better integration of treatment for municipal and non-municipal waste.
- Secure the investment in infrastructure needed to divert waste from landfill and for the management of hazardous waste.
- Get the most environmental benefit from that investment, through increased recycling of resources and recovery of energy from residual waste using a mix of technologies.

The Strategy sets national targets for:

- Reducing the amount of household waste that is not either re-used, recycled or composted.
- Recycling and composting of household waste – at least 40% by 2010, 45% by 2015 and 50% by 2020.
- Recovery of municipal waste – 53% by 2010, 67% by 2015 and 75% by 2020.

The Coalition Government carried out a ***National Review of Waste Policy in England (2011)***, looking at the most effective ways of reducing waste, maximising the money to be made from waste and recycling and considering how waste policies affect local communities and individual households. The

report set out a number of 'Principal Commitments' which aims to achieve a more sustainable approach to the use of materials, deliver environmental benefits and support economic growth. These include:

- promoting resource efficient product design and manufacture and target those waste streams with high carbon impacts, both in terms of embedded carbon (food, metals, plastics, textiles) and direct emissions from landfill (food, paper and card, textiles, wood);
- promoting the use of life cycle thinking in all waste policy and waste management decisions and the reporting of waste management in carbon terms, as an alternative to weight-based measures;
- developing a comprehensive Waste Prevention Programme and in the meantime will work with businesses and other organisations across supply chains on a range of measures designed to drive waste reduction and re-use as part of a broader resource efficiency programme; and
- continue to help local communities develop fit for purpose local solutions for collecting and dealing with household waste and work with councils to meet households' reasonable expectations for weekly collections, particularly of smelly waste.

Defra's ***Strategy for Hazardous Waste Management in England (2010)*** sets out the following principles for hazardous waste management:

- waste hierarchy;
- infrastructure provision;
- reduce our reliance on landfill;
- no mixing or dilution;
- treatment of hazardous organic wastes; and
- end reliance on the use of Landfill Directive waste acceptance criteria derogations.

PPS10: Planning for Sustainable Waste Management (2005) sets out the national planning framework in relation to waste. It states that planning has a key role in delivering sustainable waste management through both the development of appropriate strategies for growth, regeneration and the prudent use of resources and by providing sufficient opportunities for the development of new waste management facilities. PPS10 states that:

- Waste planning authorities should identify in their plans (development plan documents) sites and areas suitable for new or enhanced waste management facilities for the waste management needs of their area. Development plans form the framework within which decisions on proposals

for development are taken.

- The regional planning body should convene a broadly-based 'Regional Technical Advisory Board' (RTAB) to provide advice on the preparation of the strategy for waste management in the Regional Spatial Strategy and its implementation. PPS10 sets out the role and composition of a RTAB - it should be broadly based drawing from those with a direct interest in and knowledge of sustainable waste management.

- In deciding which sites and areas to identify for such facilities, waste planning authorities should assess their suitability against criteria set out in PPS10. This includes the physical and environmental constraints on development and the cumulative effect of previous waste disposal facilities on the well-being of the local community.

  - The ***Natural Environment White Paper (2011)*** sets out the ambition that the use of peat will be reduced to zero in England by 2030. This will contribute to the protection of important lowland peat habitats (both here and overseas) and significant carbon stores, and will promote a shift towards the greater use of waste-derived and by-product materials. It also sets ambitious targets for reducing use within individual sectors, to drive action and provide clarity about the long-term direction of policy.

  - The ***Resource Security Action Plan (2012)*** provides a framework for business action to address risks about the availability of some non-renewable raw materials (including minerals), and sets out high level actions to build on the developing partnership between Government and businesses to address resource concerns. This Action Plan emphasizes the need to make best use of resources currently in use, reducing as far as practicable the quantity of material used and waste generated, and using as much recycled and secondary material as possible, before securing the remainder of material needed through new primary extraction.

  - With the exception of PPS10 which will remain in place until the National Waste Management Plan is published, the ***National Planning Policy Framework (2012)*** has replaced Planning Policy Statements, Planning Policy Guidance notes, Minerals Planning Statements, Minerals Planning Guidance and some Circulars. It sets out the Government's planning policies for England and how these are expected to be applied including in plan making and decision-taking on planning applications.

  - The Framework expects local planning authorities to set out the strategic priorities for the area in the local plan and include strategic policies to deliver the provision of infrastructure for waste management and the provision of minerals. In doing so, they should work with other relevant organisations and providers to assess the quality and capacity of infrastructure

for waste and its ability to meet forecast demands. Specifically, minerals planning authorities are expected to develop and maintain an understanding of the mineral resource in their areas and assess the projected demand for their use, taking full account of opportunities to use materials from secondary and other sources which could provide suitable alternatives to primary materials.

- In order to facilitate the sustainable use of minerals, the Framework sets out a number of expectations relating to specific minerals for local authority plan-making and decisions on planning applications. In doing so the Framework it includes safeguards so as to ensure permitted operations do not have unacceptable adverse impacts on the natural and historic environment or human health.

8.2.3 South West Region

There are fifteen waste and minerals planning authorities in the region, who under the Planning and Compulsory Purchase Act 2004 have responsibilities for producing waste management strategies and mineral plans. These plans include aims to progressively reduce the amount of waste which goes to landfill, achieve self-sufficiency in managing local wastes; and provide alternative waste management treatment facilities to landfill.

8.3 Overview of the Baseline

8.3.1 National

UK

In 2004, total UK non-radioactive waste arisings were around 335 million tonnes. Of this 32% was construction and demolition waste; 29% was mining and quarrying waste; 13% was industrial waste; 12% was commercial waste; 9% was household waste; 5% was dredging waste; and agricultural and sewage wastes made up for less than 1% each. Commercial and industrial waste arisings were therefore around 0.84 million tonnes in 2004. In 2007, 73 million tonnes of waste were sent to landfill (a decrease of 19.5% since 2002). The amount of waste recycled or composted has increased accounting for 34% of waste in 2007/08[131].

In 2002, 41% of commercial and industrial waste arisings were landfilled; 33% were recycled; 9% were

[131] Defra, Sustainable Development Indicators in your Pocket 2009, http://www.defra.gov.uk/sustainable/government/progress/documents/SDIYP2009_a9.pdf

reused; 4% were treated; 4% were thermally treated; 4% were unrecorded; 3% went to land recovery; 2% were transferred; and 1% was unsampled[132].

The total hazardous waste produced in UK in 2009 was 4,437,212 tonnes[133].

England

In 2004, total non-radioactive waste arisings in England were around 272,000,000 tonnes. Of this 32% was construction and demolition waste; 30% was mining and quarrying waste; 13% was industrial waste; 11% was commercial waste; 9% was household waste; 5% was dredged material; and agricultural and sewage wastes made up for less than 1% each[134].

The generation of household waste continued to decrease between the financial years 2009/10 and 2010/11, with a 0.9 per cent reduction to 23.5 million tonnes. This continues the slowing in a reduction of household waste since 2007/08.[135]

Waste to landfill has decreased minimally between 2009 and 2010. It fell by less than two per cent between 2009 and 2010 and has fallen by around 46 per cent since 2000. One of the principal reasons is the implementation of the Landfill Directive. Many older landfill sites that did not meet the stringent requirements of the Directive had to close by July 2009 at the latest and diversion targets for biodegradable municipal waste to landfill increase year on year. Also the slow down in economic growth in 2010 is associated with the minimal decrease in waste generated.[136]

The proportion of household waste sent for recycling, composting or reuse between April 2010 to March 2011 in England was 41.5 per cent, increasing from 39.7 per cent in the year April 2009 and March 2010.

A total of 47.9 million tonnes of commercial and industrial (C&I) waste were generated in England in 2009, a decrease from 67.9 million tonnes in 2002-3. C&I waste was roughly evenly split between the commercial and industrial sectors.

During 2010 in England and Wales over 3.7 million tonnes of hazardous waste were managed,

[132] Defra, edigest waste statistics, http://www.defra.gov.uk/environment/statistics/waste/wrindustry.htm

[133] Environment Agency 2009 Hazardous Waste Arisings figures, http://www.environment-agency.gov.uk/static/documents/Research/EWHaz09_Final.xls

[134] Waste Strategy for England 2007, Defra, http://www.defra.gov.uk/environment/waste/strategy/strategy07/documents/waste07-strategy.pdf

[135] http://www.defra.gov.uk/statistics/files/mwb201011_statsrelease_v2.pdf

[136] http://www.environment-agency.gov.uk/research/library/data/132641.aspx

generated from nearly 160,000 businesses and industry, with:

- 14 per cent landfilled;
- 25 per cent transferred, before final disposal or recovery;
- 21 per cent treated;
- 30 per cent recycled, recovered or re-used;
- 9 per cent incinerated.

This compared to the total hazardous waste produced in England alone in 2009 was 4,095,477 tonnes.[137]

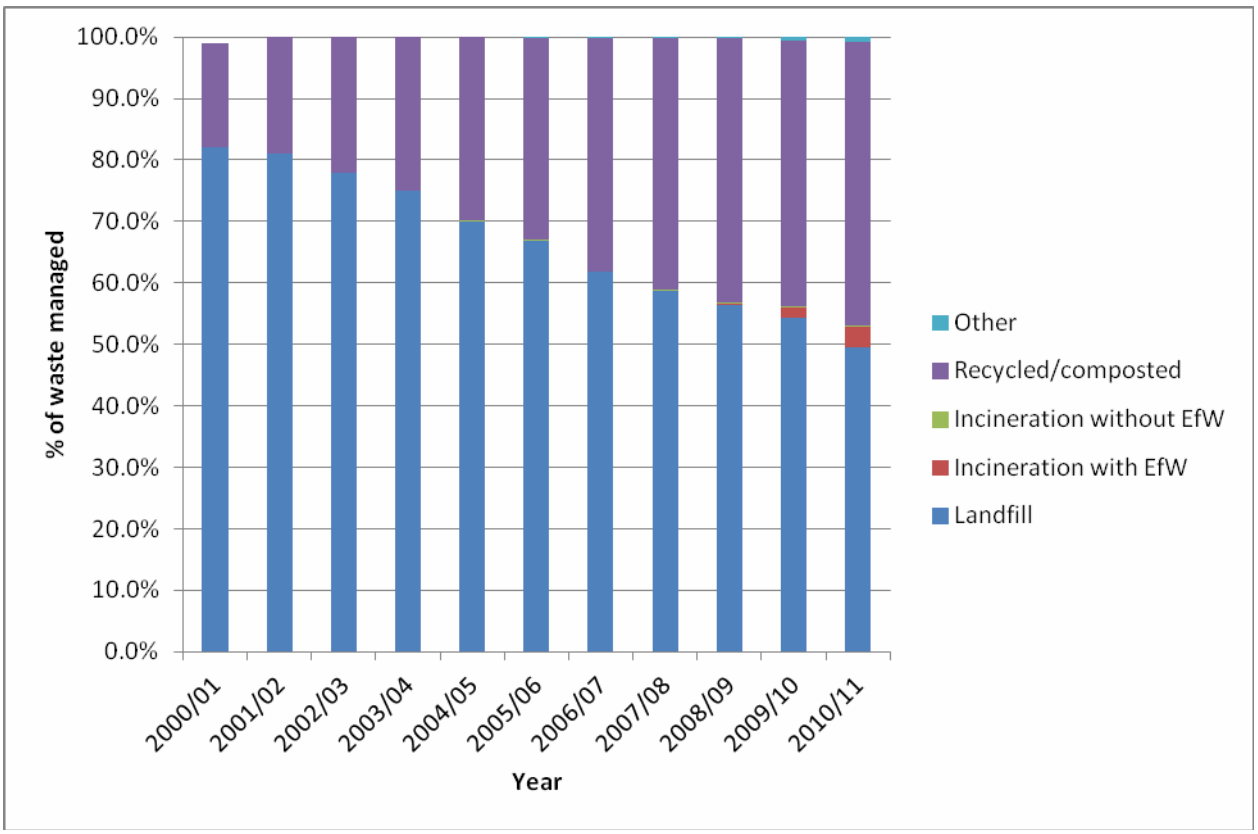
8.3.2 South West Region

Waste

Total municipal waste generation has generally declined in the South West since 2004/05 and for the period 2010/11 was 2,709,000 tonnes. **Figure 8.1** shows methods of local authority collected waste management in the South West and highlights that the region has reduced the proportion of waste sent to landfill since 2000/01, from 82.0% to 49.6% in 2010/11 (a reduction of 858,000 tonnes). Conversely, the proportion of waste that has had some value recovered has increased with recycling/composting rates growing by 29.1% over the same period and the volume of waste sent to incineration with EfW increasing to 89,000 tonnes (3.3% of all local authority waste collected).

[137] Environment Agency 2009 Hazardous Waste Arisings figures, http://www.environment-agency.gov.uk/static/documents/Research/EWHaz09_Final.xls

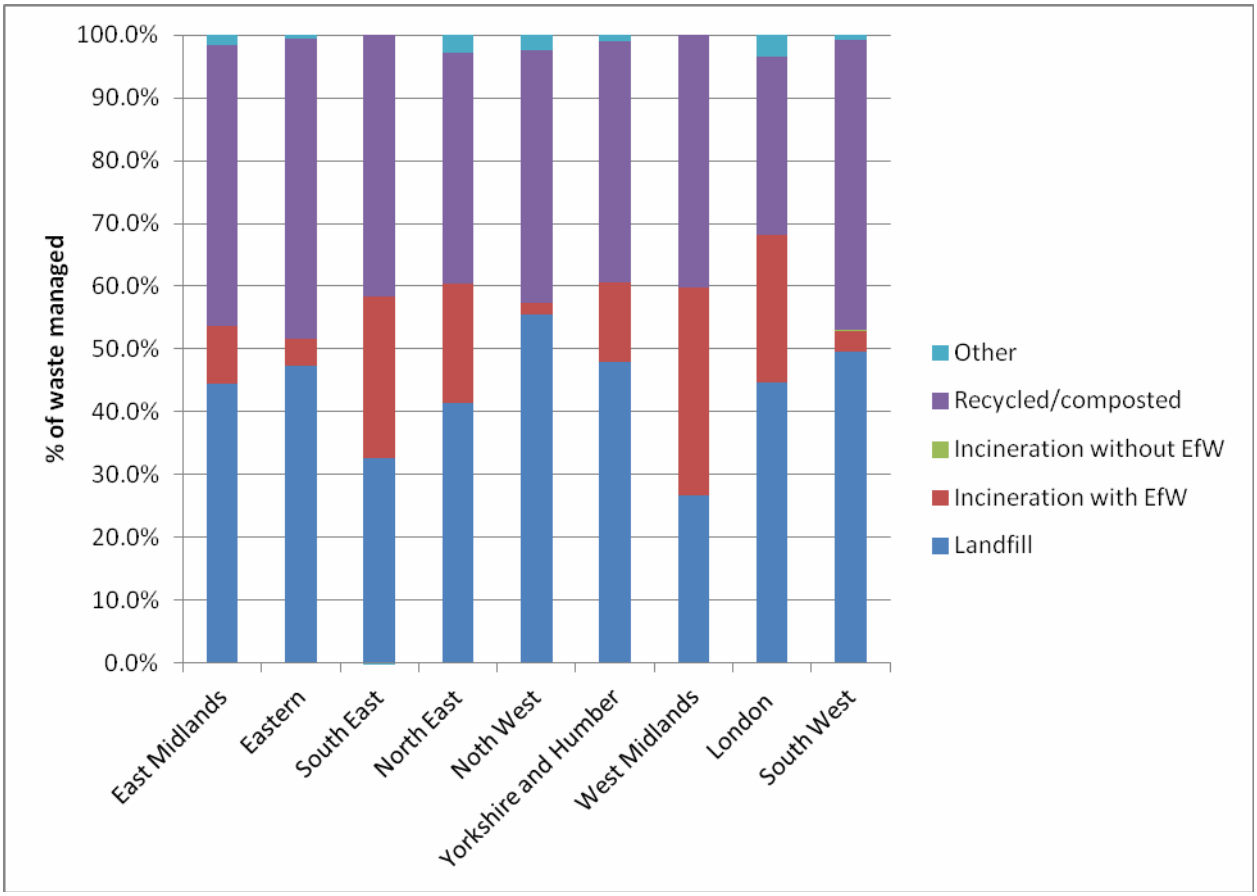
Figure 8.1 Treatment of waste in the South West over the period 2000/01 to 2010/11



Source: Defra (2012) Local authority collected waste statistics, available from http://www.defra.gov.uk/statistics/environment/waste/wrfg23-wrmsannual/ [Accessed June 2012]

Figure 8.2 shows methods of local authority waste management by region for 2010/11 and highlights that the proportion of waste sent to landfill is greater in the South West than any other English region with the exception of the North West although the proportion recycled/composted is the second highest (behind the East of England). In terms of incineration with EfW, management rates vary considerably across the regions with the proportion of waste managed by this method in the South West significantly lower than London, West Midlands, North East and Yorkshire and Humber.

Figure 8.2 Treatment of waste in each region at 2010/11



Source: Defra (2012) Local authority collected waste statistics, available from http://www.defra.gov.uk/statistics/environment/waste/wrfg23-wrmsannual/ [Accessed June 2012]

Commercial and industrial waste arisings stood at 3,977,139 tonnes in 2009 (the lowest of all 9 English regions) of which 51.0% was recycled, composted or reused and 23.5% was disposed to land. Of the remaining waste, 5.7% was subject to thermal treatment, 4.8% was sent for non-thermal treatment and 4.5% went to land recovery (the management of around 10% of waste arisings was classified as 'unknown'), similar to national trends.

Minerals

A range of minerals are exploited in the South West, including aggregates such as crushed rock, land and marine won sand and gravel, china and ball clays, and natural building stones. Other minerals found in the region include peat, coal, oil, gas and brick clay. Their exploitation is recognised as generating locally significant employment, and about 0.5% of Gross Value Added (GVA) in the South

West.

The South West Regional Aggregates Working Party Annual Report 2009[138] provides information and data on the extraction, sales, supply and demand for primary aggregates, as well as information on marine and recycled and secondary aggregates for the South West region. The main findings of the report are summarised below.

Crushed Rock

Production (sales) of crushed rock aggregates (limestone, igneous rock and sandstone) was 17.21mt in 2009, a 15.3% decrease on 2008: these were made up of limestone (88.6%); igneous rock (9.12%) and sandstone (2.31%). For the past 10 years production has been in the order of 20-25mt each year, a level just below the annualised amount of 25.75mt in the 2005 - 2020 guidelines, but the noticeable decline in production in 2009 reflected the prevailing economic climate. Approximately 69% of crushed rock sales were in the South West. Somerset, continues to be the main producing area accounting for about half of the region's sales (56.2% in 2009).

Permitted reserves in the region in 2009 amounted to 867mt at active and inactive sites which represented a landbank of 50.4 years' production at the 2009 level of output; in 2008 the corresponding landbank was 44 years. In addition, 306mt of crushed rock aggregate reserves were associated with dormant sites. All crushed rock producing MPAs, except Gloucestershire, have a substantial landbank of permitted reserves.

Land Won Sand and Gravel

Production (sales) of land won sand and gravel was only 3.15mt in 2009, a decrease of 22.2% on 2008 production. Notwithstanding the economic climate, land won sand and gravel production in the South West has fallen from a consistent level of 4-5mt each year in the 1990s. Dorset continues to be the main production area and in 2009 accounted for about 41% of sales. Regional sales have consistently been below the annualised amount of 5.3mt in the 2005 - 2020 guidelines. Approximately 83% of land won sand and gravel sales were in the South West.

Permitted reserves in the region were only c40.5mt in 2009, representing a landbank of about 13 years at the 2009 level of production. This was slightly higher than the c10 year landbank in 2008 and again reflects the downturn in production and reserves permitted between the two years. However, if the average of the previous three years' production or the regional apportionment are used then the 2009

[138] South West Regional Aggregates Working Party (2011) Annual Report 2009, available from http://www.communities.gov.uk/publications/planningandbuilding/swannual2009 [Accessed June 2009]

landbank falls to only 10.8 years and 7.6 years respectively.

Notwithstanding this overall landbank situation, there are serious concerns about the availability of the resources that might be needed to maintain, in the longer term, even the minimum sand and gravel landbank (7 years) as advised under current government guidance.

Marine Dredged Sand and Gravel

In 2009 marine dredged landings in the region, mainly sand dredged from licensed areas in the Bristol Channel, amounted to only 0.481mt, representing only 64% of the 2008 landings. Approximately 89% of marine dredged aggregate sales were in the South West. Avonmouth in Bristol was the main wharf where 0.337mt were landed compared to 0.534mt in 2008.

Secondary and Recycled aggregates

Approximately 1.5mt of secondary aggregates (china clay aggregates and slate waste) were sold from the region in 2009. Sand was also produced at ball clay workings in Devon and Dorset but for reporting purposes the amounts were included with primary sand and gravel.

8.4 Environmental Characteristics of those Areas most likely to be Significantly Affected

8.4.1 National

UK

Although reuse and recycling rates for industrial wastes are increasing, due to the combined effects of statutory, reputational and financial drivers, there are still high levels of waste being disposed of, with limited opportunity for recycling hazardous and very low-level radioactive materials. There is pressure to achieving as close to zero landfill as possible throughout the UK[139, 140].

Commercial and industrial waste data is not routinely collated. Defra carried out a national survey of commercial and industrial waste at the end of 2010. This survey collected data from 4,074 businesses, plus data from pollution, prevention and control returns (PPC) and other sources, and was designed to

[139] Wales Waste Information 2008, Environment Agency, http://www.environment-agency.gov.uk/research/library/data/111408.aspx

[140] Scotland's Zero Waste Plan Data, Scottish Environment Protection Agency, June 2010, http://www.sepa.org.uk/waste/waste_data/zero_waste_plan_data.aspx

produce estimates of arisings at a national level. Commercial and industrial waste is subject to similar pressures as municipal waste, namely increased waste prevention, adoption of recycling and reuse alternatives and reduced reliance on landfill.

8.4.2 South West region

Waste

RPG10 Policy RE5 on the Management and Transportation of Waste seeks to recycle or compost at least 30% of household waste by 2010 and 33% by 2015. **Table 8.1** below indicates that by 2010-11, all but three of the region's local authorities (i.e. Isles of Scilly 19%; Stroud 25%; West Somerset 28%) had exceeded the 2010 target of 30% for the percentage of household waste sent for reuse, recycling or composting. In addition, all but four of the local authorities in the region (over 90% of all authorities) had reached or exceeded by 2010/11 the 2015 RPG10 policy target of 33% (i.e. the above mentioned 3 authorities, plus Purbeck).

Table 8.1 South West Region Local Authority Waste Performance Indicators for 2010/11

South West Region Local Authorities (41 authorities in total)	Authority Type	Residual household waste per household (kg/household)	Percentage of household waste sent for reuse, recycling or composting	Percentage of municipal waste sent to landfill (16 authorities in total)
Council of the Isles of Scilly	Unitary	1,424.58	19%	0%
Bath and North East Somerset Council	Unitary	529.68	46%	53%
Bristol City Council	Unitary	536.24	37%	58%
Cornwall	Unitary	700.86	36%	62%
West Devon Borough Council	Collection	379.40	52%	-
Torridge District Council	Collection	491.96	44%	-
Torbay Council	Unitary	541.12	40%	59%
Teignbridge District Council	Collection	356.31	57%	-
South Hams District Council	Collection	365.67	55%	-
Plymouth City Council	Unitary	661.29	33%	61%
North Devon District Council	Collection	532.06	44%	-
Mid Devon District Council	Collection	480.11	49%	-
Exeter City Council	Collection	451.18	37%	-

South West Region Local Authorities (41 authorities in total)	Authority Type	Residual household waste per household (kg/household)	Percentage of household waste sent for reuse, recycling or composting	Percentage of municipal waste sent to landfill (16 authorities in total)
East Devon District Council	Collection	353.07	49%	-
Devon County Council	Disposal	492.69	55%	44%
Poole Borough Council	Unitary	662.85	40%	47%
Bournemouth Borough Council	Unitary	333.94	64%	18%
Weymouth and Portland Borough Council	Collection	342.47	43%	-
West Dorset District Council	Collection	447.25	34%	-
Purbeck District Council	Collection	414.07	32%	-
North Dorset District Council	Collection	478.38	34%	-
East Dorset District Council	Collection	471.97	42%	-
Christchurch Borough Council	Collection	461.45	34%	-
Dorset County Council	Disposal	471.91	53%	44%
Tewkesbury Borough Council	Collection	389.50	54%	-
Stroud District Council	Collection	538.41	25%	-
Gloucester City Council	Collection	462.59	46%	-
Forest of Dean District Council	Collection	567.07	39%	-
Cotswold District Council	Collection	354.63	60%	-
Cheltenham Borough Council	Collection	586.59	35%	-
Gloucestershire County Council	Disposal	543.85	46%	56%
North Somerset Council	Unitary	527.99	51%	47%
West Somerset District Council	Collection	515.85	28%	-
Taunton Deane Borough Council	Collection	379.98	45%	-
South Somerset District Council	Collection	388.07	42%	-
Sedgemoor District Council	Collection	439.49	42%	-
Mendip District Council	Collection	442.71	41%	-
Somerset County Council	Disposal	513.33	51%	52%
South Gloucestershire Council	Unitary	623.16	45%	51%
Swindon Borough Council	Unitary	473.97	50%	53%
Wiltshire	Unitary	621.49	42%	38%

Source: http://www.defra.gov.uk/statistics/environment/waste/wrfg23- wrmsannual/

RPG10 Policy RE5 on the Management and Transportation of Waste also seeks to recover value from 45% of municipal waste by 2010 and 67% by 2015. This means that local authorities would need to have less than 55% of their municipal waste sent to landfill at 2010. Table 8.1 above indicates that 11 of the 16 local authorities in the region (69% of all authorities) sent less than 55% of their municipal waste to landfill during 2010/11. Also, at the time of 2010/11, only 2 of the 16 local authorities disposing of municipal waste had sent less than the regional target percentage for 2015 (i.e. less than 33%).

Minerals

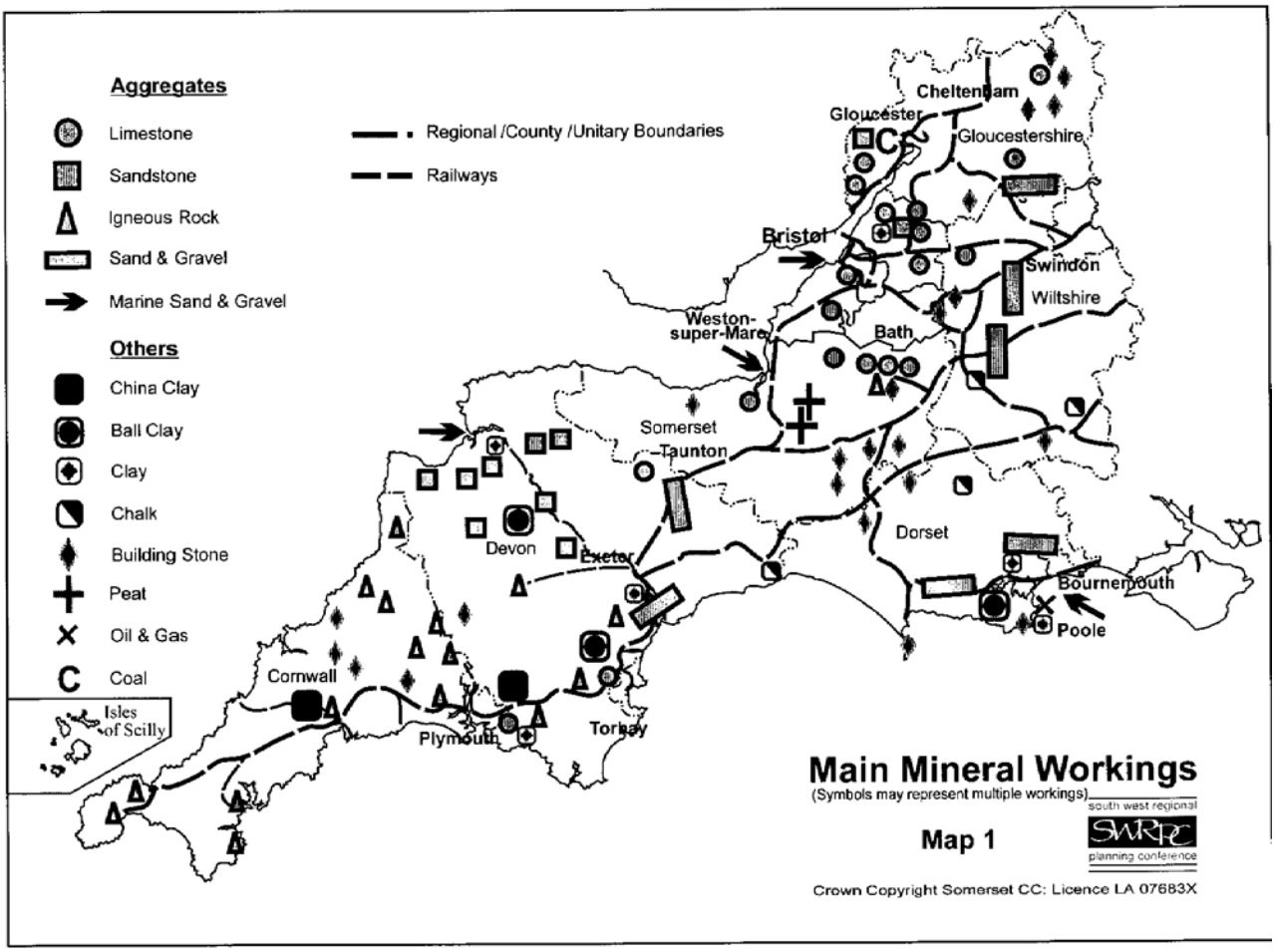
The region has a long history of mining and quarrying and a wide variety of important mineral deposits. Many deposits have been worked out, are no longer worked today, or are now only undertaken on a very small scale, such as the Bristol, Somerset and Forest of Dean coalfields, Cornwall's tin mining industry and the production of celestite crystals from the north-east Bristol area. Today, the minerals industry in the South West is dominated by quarrying for crushed rock aggregates and sand and gravel.

The Mendips in the Somerset area provide most of the region's crushed rock production, with much of the production transported by rail to locations outside the South West.

The Cotswold Water Park, on the Gloucestershire and Wiltshire border in the Upper Thames Valley, is a major supplier of sharp sand and gravel. The Water Park contains significant areas of exhausted workings that have been reclaimed for a variety of predominantly water based uses. Another area in Wiltshire, around Calne and Compton Bassett, produces soft sand. The area between Dorchester and Poole in Dorset is also a major sand and gravel producer, where both Drift and Solid deposits are worked.

Additionally, china clay in Cornwall and West Devon, ball clay in Devon and South Dorset, and many types of building stone (e.g. Cotswold and Bath limestone) are quarried and mined, whilst oil and gas is obtained both onshore and offshore, such as around Poole in Dorset. Parts of Wiltshire and Dorset provide supplies of chalk, whilst clay is quarried in particular locations across the whole region, including chalk and clay production for cement manufacturing at Westbury. Dredging for sand and gravel in the Bristol Channel and off the South Coast also makes a contribution to the land won supplies of aggregates. **Figure 8.3** below shows the distribution across the region of the main mineral working areas.

Figure 8.3 Main Mineral Workings in the South West Region



Source: Draft Regional Planning Guidance for the South West, Background Paper 11, Minerals and Waste, 1999

8.5 Likely Evolution of the Baseline

8.5.1 National

UK

Non-radioactive waste management in the UK is moving towards greater reuse and recycling and less landfill. Between 2002 and 2007 in the UK, there was 19.5% decrease in waste disposed of in landfill sites. This includes waste produced by households, commerce and industry and construction and demolition.[141]

Hazardous waste production in England and Wales has decreased since 2004 by 17%. The majority of the decrease is due to the reduction in liquid inputs to one treatment facility on Teesside in 2009.[142]

England

In England, the total amount of non-radioactive waste sent to landfill has decreased from 80,000,000 tonnes annually in 2000/01 to 72, 500,000 tonnes in 2004/05 at licensed landfill sites with falls from 50% to 44% for industrial and commercial waste between 1998/99 and 2002/03. Between 1998/99 and 2002/03 there was a 1% reduction in the total amount (in tonnes) of commercial and industrial waste produced in England. Within this total, industrial waste had reduced to 38,000,000 tonnes in 2002/3 while the amount of commercial waste had grown to 30,000,000 tonnes. During this period, the tonnage of commercial and industrial waste sent to landfill has decreased, with more waste handled by transfer stations and treatment facilities[143]. In 2002/3 for the first time, recycling and reuse had overtaken landfill as the most common method of waste management. Overall 44% was sent to landfill and 45% recycled.

Defra has established targets for England which includes a greater focus on waste prevention seeking to achieve a fall of 50% per person of household waste arising. Recycling and composting of household waste targets have been established - at least 40% by 2010, 45% by 2015 and 50% by 2020; and recovery of municipal waste - 53% by 2010, 67% by 2015 and 75% by 2020.[144]

On the basis of the policies set out in Waste Strategy for England 2007, levels of commercial and industrial waste landfilled are expected to fall by 20% by 2010 compared to 2004. The Government is committed to Waste Framework Directive target to recover at least 70% of construction and demolition

[141] Waste Strategy for England 2007, Defra

[142] Environment Agency Waste Trends, http://www.environment-agency.gov.uk/research/library/data/123472.aspx

[143] Commercial and Industrial Waste in England: Statement of aims and actions 2009, Defra, October 2009, http://www.defra.gov.uk/environ ment/waste/topics/documents/commercial-industrial-waste-aimsactions-091013.pdf

[144] Waste Strategy for England 2007, Defra

waste by 2020.

8.5.2 South West Region

Waste

The region's authorities include future recycling and recovery targets for different waste streams in their respective waste plans which have regard to either the targets in RPG10 or the national targets as set out in the Waste Strategy for England, 2007. For example, the West of England Joint Waste Core Strategy, adopted in March 2011, has used, in respect of municipal waste arisings, the same household recycling and composting targets that are proposed in the Waste Strategy for England, 2007:

- 40% at 2010
- 45% at 2015
- 50% at 2020

The Joint Waste Core Strategy explains that, whilst there is no nationally established recycling or composting target for the commercial and industrial waste stream, the municipal waste targets have also been applied in the plan to the management of commercial and industrial wastes. In respect of construction, demolition and excavation (CD&E) waste, the West of England Joint Waste Core Strategy sets out at paragraph 6.4.3 that the national position has also been used to establish targets and consequently forecast tonnage of CD&E wastes arising within the plan area requiring diversion from landfill.

The national trend in waste being disposed of to landfill has been reflected in the South West region which has reduced the proportion of waste sent to landfill since 2000/01, from 82.0% to 49.6% in 2010/11 (a reduction of 858,000 tonnes). At 2010, there were 43,000 tonnes of incineration capacity and 42.6 million cubic metres of landfill capacity available in the South West. The region had nearly 6 years of landfill life for non hazardous wastes remaining at the end of 2010[145]. Landfill capacity across the South West is shown in **Table 8.2**.

[145] Environment Agency (2011) Waste Inputs and Capacity 2012 http://www.environment-agency.gov.uk/research/library/data/132647.aspx#South_West [Accessed June 2012]

Table 8.2 Landfill Capacity (2010) (000's cubic metres)

Landfill Type	Area							SOUTH WEST
	Cornwall	Devon	Dorset	Gloucestershire	Somerset	West of England Unitaries	Wiltshire	
Hazardous Merchant	-	-	-	1,477	226	-	546	2,249
Hazardous Restricted	-	-	-	-	-	-	-	-
Non Hazardous with SNRHW cell*	-	706	-	-	2,459	-	2,203	5,369
Non Hazardous	3,536	2,835	3,040	5,197	2,498	1,860	6,882	25,849
Non Hazardous Restricted	42	-	-	-	-	4,700	-	4,742
Inert	572	2,433	430	-	881	100	-	4,415
Total	4,151	5,974	3,470	6,674	6,063	6,660	9,631	42,624

Source: Environment Agency (2011) Waste Inputs and Capacity 2012, available from http://www.environment-agency.gov.uk/research/library/data/132647.aspx#South_West [Accessed June 2012]

Overall, the regions' landfill capacity has reduced by 29.5% since 2000/01 (when capacity was 55.3 million cubic meters in 2000/01) and the amount of waste sent to landfill by 39.7%.

Minerals

Minerals plans have traditionally looked to the regional strategies to provide the context, in particular, for the future allocation of land for the extraction of minerals. For example, the Wiltshire & Swindon Minerals Core Strategy, adopted in 2009, followed the sub-regional apportionment that the South West Regional Assembly set for the region for the period 2001 – 2016. In the case of aggregates, for example, the minerals planning authorities were provided with a target production (in million tonnes per annum) that covered the 16-year plan period. The authorities were required to test this apportionment through the preparation of their respective Minerals Local Development Documents.

The NPPF requires, as set out in paragraph 145, that minerals planning authorities should continue to plan for a steady and adequate supply of aggregates, but this should be monitored by preparing an annual Local Aggregate Assessment, either individually or jointly by agreement with another or other mineral planning authorities. This annual assessment will need to be based on a rolling average of 10 years sales data and other relevant local information. The assessment is also to take into account all

supply options, including marine dredged, secondary and recycled sources, and involve partnership working through an Aggregate Working Party. The Wiltshire & Swindon Minerals Core Strategy example included provision until 2016, plus a 7-year landbank plus an additional 3 years worth of supply. The NPPF seeks landbanks of at least 7 years for sand and gravel and at least 10 years for crushed rock. The NPPF goes on to mention (in paragraph 146) other mineral stocks, such as:

- at least 10 years of permitted reserves for individual silica sand sites (e.g. in Wiltshire);
- at least 15 years of permitted reserves for cement primary (chalk and limestone) and secondary (clay and shale) materials to maintain an existing plant (e.g. the cement works at Westbury in Wiltshire), and for silica sand sites where significant new capital is required; and
- at least 25 years of permitted reserves for brick clay, and for cement primary and secondary materials to support a new kiln.

The minerals authorities are therefore likely to ensure, through their plans, that an adequate supply of minerals continues to be provided along the lines that preceded in the NPPF.

8.6 Assessing significance

Table 8.3 sets out guidance utilised during the assessment to help determine the relative significance of potential effects on the land use and materials objective. It should not be viewed as definitive or prescriptive; merely illustrative of the factors that were considered as part of the assessment process.

Table 8.3 Approach to determining the significance of effects on material assets

Effect	*Description*	*Illustrative Guidance*
++	Significant positive	• Alternative will increase capacity of waste management infrastructure. • Alternative would create no additional hazardous or non-recyclable waste, whilst maximising the proportion of materials that are re-useable or recyclable. • Alternative will ensure the safe handling of radioactive and hazardous wastes.
+	Positive	• Alternative would not create an increase in the volume of hazardous and non-recyclable wastes that require disposal. • Alternative would increase the volume of materials reused and recycled. • Alternative will ensure the safe handling of radioactive and hazardous wastes.
0	No (neutral effects)	• Alternative would not create an increase in the volume of hazardous and non-recyclable wastes that require disposal. • Alternative will have no effect on the capacity of waste management infrastructure.

Effect	Description	Illustrative Guidance
-	Negative	• Alternative will result in an increase in radioactive waste for disposal. • Alternative will increase volumes of hazardous and non-recyclable waste that would require disposal. • Alternative may have a limited adverse impact on the capacity of existing waste management systems.
--	Significant negative	• Alternative will generate high volumes of radioactive waste for disposal. • Alternative will generate a high volume of hazardous and non-recyclable waste that would require disposal. • Alternative will impede the achievement of government and national targets for minimising, recovering and recycling waste. • Alternative will have a significant adverse impact on the capacity of existing waste management systems (e.g. leading to the permitting of additional landfill capacity to accommodate waste). • Alternative may increase risks associated with the handling of radioactive and hazardous wastes.
?	Uncertain	• From the level of information available the effects the impact that the alternative would have on this objective is uncertain.

8.7 Assessment of Significant Effects of Retention, Revocation and Partial Revocation

Table 8.4 summarises the significant effects identified in the detailed assessment of RPG10 policies against the material assets topic.

Table 8.4 Significant effects against the material assets topic

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
EC1 Retention	--	--	--	This policy supports the sustainable development of the regional economy. Employment development will require the extraction and use of a significant volume of raw materials during construction and will generate waste during both the construction and operation of sites. In consequence, retention has been assessed as having a significant negative effect against the material assets topic.
EC1 Revocation	--	--	--	The revocation of the Regional Strategy is unlikely to lead to local authorities not providing an enabling context for job growth. In consequence, it is expected that revocation is likely to result in similar significant negative effects on material assets as those associated with retention of the policy.

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
EC3 Retention	--	--	--	This policy requires local authorities and other bodes to provide for a range and choice of employment sites to meet the projected needs of local businesses and new investment including for regional and local clusters. The development of employment sites will require the extraction and use of a significant volume of raw materials and will generate waste during both the construction and operation of sites. In consequence, retention has been assessed as having a significant negative effect against the material assets topic.
EC3 Revocation	--	--	--	Revocation is unlikely to lead to local authorities not identifying and allocating in their local plans employment sites. In consequence, it is expected that revocation is likely to result in similar significant negative effects on material assets as those associated with retention of the policy.
EC4 Retention	--	--	--	This policy seeks the identification of major strategic sites by the regional planning body and regional development agency for inclusion in structure plans. The development of major strategic sites will require the extraction and use of a significant volume of raw materials and will generate waste during both the construction and operation of sites. In consequence, retention has been assessed as having a significant negative effect against the material assets topic.
EC4 Revocation	--	--	--	Revocation is unlikely to lead to local authorities not identifying and allocating in their local plans (where appropriate) strategic employment sites. In consequence, it is expected that revocation is likely to result in similar significant negative effects on material assets as those associated with retention of the policy.
HO1 Retention	--	--	--	This policy concerns regional housing provision up to 2016. Housing development will require the extraction and use of a significant volume of raw materials and will generate waste (both construction and municipal waste arisings). In consequence, retention has been assessed as having a significant negative effect against the material assets topic.
HO1 Revocation	--	--	--	Revocation of the Regional Strategy will not remove the need for more houses within the region and in this respect paragraph 159 of the NPPF states that local planning authorities should have a clear understanding of housing needs in their area. In consequence, it is expected that revocation is likely to result in similar significant negative effects on material assets as those associated with retention.
RE5 Retention	++	++	++	This policy seeks to reduce reliance on landfill, promoting a mix of waste recovery methods and seeking to increase recycling/composting. In so far as waste is a material asset, increasing recovery, recycling and composting capacity, as well as possibly energy from waste, would all result in a significant positive effect. In consequence, retention has been assessed as having a significant positive effect against the material assets topic.
RE5 Revocation	++	++	++	Revocation is likely to result in similar significant positive effects on material assets as those associated with retention of the policy. Waste planning authorities will still be required to comply with national policy in Planning Policy Statement 10, the NPPF and the National Waste Management Plan for England as it emerges, as well as their legal obligations under the Waste (England and Wales) Regulations 2011. Whilst Policy RE5 contains 'regional' targets, these are not apportioned at the sub-regional scale and in any case (being based on the Waste Strategy 2000) they have been subsequently revised. Further, although sub-regional municipal and commercial and industrial waste capacity targets were included in the draft revised RSS (see Appendix C), waste planning

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				authorities will still be required to plan for the waste management needs in their area, driving waste management up the hierarchy, helping to implement the international and national waste legislation and take more responsibility for their own waste. Each waste planning authority should set out its ambitions for additional waste management capacity required, based on an assessment of existing and forecast waste arisings, and should monitor to enable it to adapt if required. All 6 waste plans in the South West were adopted following the publication of RPG10. Three (Devon, Bournemouth/Dorset/Poole, and Gloucestershire) seek to comply with the objectives set out in the plan, whilst the remaining (Plymouth, Wiltshire and the Bath and North Somerset joint waste core strategies) draw on Waste Strategy 2007 and more up-to-date objectives. Bath and North East Somerset seek to exceed European obligations. Achievement of present legal and national targets will require a step change in provision for recycling, composting and recovery, but decisions about how targets are met should take account of local circumstances. The policy allows for the range, type, capacity and location of new waste and/or expanded waste management facilities and their operational arrangements to be determined by the waste planning authority (or authorities) concerned, informed by relevant appraisals. The duty to co-operate will assist to ensure waste planning authorities work together, whilst ensuring waste is handled safely, and enabling waste to be disposed of in one of the nearest appropriate installations. Additionally, in line with paragraph 218 of the Framework, waste planning authorities may also continue to draw on evidence that informed the preparation of regional strategies to support local plan policies, supplemented as needed by up-to date, robust local evidence.

8.7.1 Effects of Revocation

The significant adverse effects on material assets are all linked to the increased use of construction materials and energy associated with the quantum of development proposed across the region. House building performance in the region is below the regional housing target set out within Policy HO1 and this may continue in the short term. However the number of homes involved (16,000 homes were constructed in 2011/12) is still considered significant with regard to the use of material assets. In the longer term the number of houses constructed is expected to rise, encouraged by Government policy and fiscal incentives. The negative effects identified for the retention of Policy HO1 will therefore be maintained under revocation.

In addition to housing, the NPPF seeks to boost significantly the supply of land for employment. This is likely to lead to similar significant adverse effects on material assets as retention of the Regional Strategy, with the economic development role of SWDA replaced by the six LEPs that have been established in the region.

RPG10 Policy RE5 seeks to reduce waste and promote recycling. Viewing waste as a resource will, in the longer term, have a significant impact on material assets by replacing primary aggregate with recycled construction waste, and making effective use of recovered energy. This reflects national policy

and legislation which remains in place, and consequently the positive effects on material assets will remain following revocation.

8.7.2 Effects of Partial Revocation

The effects of partial revocation concern either:

- Revoking all the quantified and spatially specific policies (for instance where a quantum of development, land for development or amounts of minerals to be extracted or waste disposal is allocated to a particular location in the region) and retaining for a transitional period the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period all the spatially specific policies where a quantum of development or land for development is allocated to a particular location in the region and revoking the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period policies, ambitions and/or priorities, the revocation of which may lead to likely significant negative environmental effects.

The likely significant effects on material assets associated with the revocation and retention of the quantitative and spatially specific policies are summarised in **Table 8.4** for policies HO1 and RE5. The revocation of Policy HO1 was assessed as having a significant negative effect in respect of material assets associated with the extraction and use of raw materials and generation of waste linked with housing development, but this was the same as retention.

The retention and revocation of Policy RE5 was assessed as having a significant positive effect on material assets. This policy includes regional targets for recycling/composting, recovery and landfilling reduction but does not apportion targets by waste planning authority. All 6 waste plans in the South West were adopted following the publication of RPG10. Three (Devon, Bournemouth/Dorset/Poole, and Gloucestershire) seek to comply with the objectives set out in the plan, whilst the remaining (Plymouth, Wiltshire and the Bath and North Somerset joint waste core strategies) draw on Waste Strategy 2007 and more up-to-date objectives.

The assessment has found that there are no policies in RPG10 where the act of revocation will cause a significant negative effect whilst retaining the same policy will maintain a significant environmental benefit.

8.7.3 Effects of Retention

Demand for construction materials will continue if the Regional Strategy is retained and will continue to have significant adverse effects on material assets. Optimum use of recycled materials will reduce, but

not remove, the significant effects.

8.8 Mitigation Measures

Negative effects associated with new housing development (Policy HO1) may be mitigated to a degree through other policies in the NPPF including those which seek good design and the sustainable use of minerals. PPS10 also seeks to drive waste management up the hierarchy which will help reduce the volume of waste generated by new development and support the reuse/recycling of construction and demolition waste, replacing primary aggregate.

9. Cultural Heritage

9.1 Introduction

The overview of plans and programmes and baseline information contained in this section provides the context for the assessment of potential effects of the proposals to revoke regional strategies on cultural heritage. Information is presented for both national and regional levels.

Cultural heritage, including architectural and archaeological heritage, within this context is defined as below-ground and upstanding evidence of past human activity and encompasses artefacts, buried and underwater archaeological sites, earthworks, buildings, battlefields, historic gardens, historic landscapes, wrecks, hedgerows and ancient woodland.

There are links between the cultural heritage topic and other topics in the SEA, specifically landscape and land use (as part of soils and geology).

9.2 Summary of Plans and Programmes

9.2.1 International

The ***World Heritage Convention*** aims to promote co-operation amongst nations to protect heritage that is of such outstanding value that its conservation is important for current and future generations; and established a register of World Heritage Sites. It is intended that properties on the World Heritage List will be conserved for all time. Member states commit themselves to ensure the identification, protection, conservation, and presentation of World Heritage properties.

The World Heritage Committee's ***Operational Guidelines for the Implementation of the World Heritage Convention (2008)*** set out: the procedure from the inscription of properties on the World Heritage List and the List of World Heritage in Danger; the protection and conservation of World Heritage properties; the granting of International Assistance under the World Heritage Fund; and the mobilisation of national and international support in favour of the Convention.

The ***UNESCO Convention for the Protection of the Archaeological Heritage of Europe (revised)*** is a Europe-wide international treaty which establishes the basic common principles to be applied in national archaeological heritage policies. It supplements the general provisions of the ***UNESCO World Heritage Convention (1972)*** and aims to protect archaeological heritage as a source of the European collective memory and as an instrument for historical and scientific study. It sets out a framework which requires the member states to:

- maintain an inventory of archaeological heritage and designated protected monuments and areas;
- create archaeological reserves; and
- for finders of any element of archaeological heritage to report and make it available to the competent authority.

The ***European Convention on the Protection of the Archaeological Heritage (1992)*** made a number of important agreements including setting the definition of archaeological heritage as 'all remains and objects and any other traces of mankind from past epochs….shall include structures, constructions, groups of buildings, developed sites, moveable objects, monuments of other kinds as well as their context, whether situated on land or under water.

9.2.2 National

UK

The ***Ancient Monuments and Archaeological Areas Act 1979*** provides for the scheduling of ancient monuments and offers the only legal protection specifically for archaeological sites. The ***Planning (Listed Buildings and Conservation Areas) Act 1990*** outlines the level of protection received by listed buildings, scheduled monuments and buildings within Conservation Areas.

There are a number of other Acts which afford protection to cultural and historical assets, including the ***Protection of Wrecks Act 1973***, which provides protection for shipwrecks of historical, archaeological or artistic value; the ***Protection of Military Remains Act 1986***, which provides protection for the wreckage of military aircraft and designated military vessels, and the ***Treasure Act 1996***, which sets out procedures for dealing with finds of treasure, its ownership and rewards, in England, Wales and Northern Ireland.

Conservation areas were introduced by the **Civic Amenities Act 1967** and are designated for their special architectural and historic interest. Most conservation areas are designated by the local planning authority. English Heritage can designate conservation areas in London, where they have to consult the relevant London Borough Council and obtain the consent of the Secretary of State for National Heritage. The Secretary of State can also designate in exceptional circumstances - usually where the area is of more than local interest.

At a national level, the draft ***Heritage Protection Bill*** contains provisions to unify the designation and consent regimes for terrestrial heritage assets, and transfer responsibility for designation of these assets. It also contains provisions to reform the marine heritage protection regime in England and Wales by broadening the range of marine historic assets that can be protected. The draft Bill is based on the

proposals set out in the White Paper, Heritage Protection for the 21st Century (2007), and is one element of a wider programme of on-going heritage protection reforms. There are however, no current plans to enact the Bill and it is not known whether its provisions will become statute.

The Department for Culture, Media and Sport White Paper ***Heritage Protection for the 21st Century (2007)*** sets out a strategy for protecting the historic environment, based on three core principles: developing a unified approach to the historic environment; maximising opportunities for inclusion and involvement; and supporting sustainable communities by putting the historic environment at the heart of an effective planning system.

England

The National Planning Policy Framework (NPPF) (2012) expects local planning authorities to set out in their local plan a positive strategy for the conservation and enjoyment of the historic environment and in doing so recognise that heritage assets are an irreplaceable resource. The Framework sets out the core land use planning principles that should underpin both plan-making and decision-taking and in doing so expects planning to "conserve heritage assets in a manner appropriate to their significance, so that they can be enjoyed for their contribution to the quality of life of this and future generations".

When considering the impact of a proposed development on the significance of a designated heritage asset, the Framework expects great weight to be given to the asset's conservation. The more important the asset, the greater the weight should be. The Framework explains that significance can be harmed or lost through alteration or destruction of the heritage asset or development within its setting. As heritage assets are irreplaceable, the Framework expects any harm or loss to require clear and convincing justification. Where a proposed development will lead to substantial harm to or total loss of significance of a designated heritage asset, "local planning authorities should refuse consent, unless it can be demonstrated that the substantial harm or loss is necessary to achieve substantial public benefits that outweigh that harm or loss", or all of the criteria set out in paragraph 133 (mostly relating to the lack of a viable use) apply.

English Heritage, the Government's statutory adviser on the historic environment in England, has published a number of guidance documents for the protection of the historic environment, including ***Wind Energy and the Historic Environment (2005)***, ***Biomass Energy and the Historic Environment (2005)***, ***Climate Change and the Historic Environment (2005)*** and ***Conservation Principles, Policies and Guidance for the Sustainable Management of the Historic Environment (2008)***.

9.2.3 South West Region

No relevant plans were identified within the region for this topic.

9.3 Overview of the Baseline

9.3.1 National

UK

The UK has over 459,000 listed buildings, approximately 33,720 scheduled monuments, 2,416 historic parks and gardens, in excess of 10,259 conservation areas and 28 World Heritage Sites.[146]

England

In England there are approximately 374,081 listed building entries, 19,717 scheduled monuments, 1,601 registered historic parks and gardens, 9,080 conservation areas, 43 registered historic battlefields, 46 designated wrecks and 17 World Heritage Sites. Nearly 19,446 sites in England are 'at risk'.

The density of shipwreck remains in the English territorial sea is amongst the highest in the world due to the combined effects of historically high volumes of shipping traffic, a long history of seafaring and an often hazardous coastline.[147]

English Heritage have identified the following proportions of heritage sites as at risk within England:

- 3.1% of grade I and II listed buildings;
- 7.4% of conservation areas (from those that were included within the report);
- 17.2% of scheduled monuments;
- 6.1% of registered parks and gardens;
- 14% of registered battlefields, and;

[146] Department of Culture, Media and Sport, 2009, http://www.culture.gov.uk/4168.aspx
[147] English Heritage, http://www.english-heritage.org.uk/caring/listing/what-can-we-protect/listed-buildings/

- 17% of protected wreck sites[148].

A nationwide survey of conservation areas, conducted by English Heritage and the 75% of England's local planning authorities who responded, indicates that approximately 1 in 7 is at risk from neglect, decay or unsympathetic change[149]. The main threats identified were:

- unsympathetic replacement doors and windows (83% of conservation areas);
- poorly maintained roads and pavements (60%);
- the amount of street clutter (45%);
- loss of boundary walls, fences or hedges (43%);
- unsightly satellite dishes (38%);
- the effects of traffic calming or traffic management (36%);
- alterations to front elevations, roofs and chimneys (34%);
- unsympathetic new extensions (31%);
- the impact of advertisements (23%); and
- neglected green spaces (18%).

9.3.2 South West Region

The South West region is home to over 6,900 scheduled monuments, over 89,000 listed buildings, over 1,500 conservation areas and 4 World Heritage Sites (Stonehenge and Avebury; Bath; Cornwall and West Devon Mining Landscape; and the Devon and Dorset Jurassic Coast). The number and types of heritage assets within the South West region for 2003 and 2011 are set out in **Table 9.1** below.

[148] English Heritage, 2010, Heritage at Risk Summary, http://www.english-heritage.org.uk/publications/har-2010-summary/
[149] http://www.english-heritage.org.uk/content/publications/publicationsNew/heritage-at-risk/Conservation_Areas_at_Risk/caar-booklet-acc.pdf

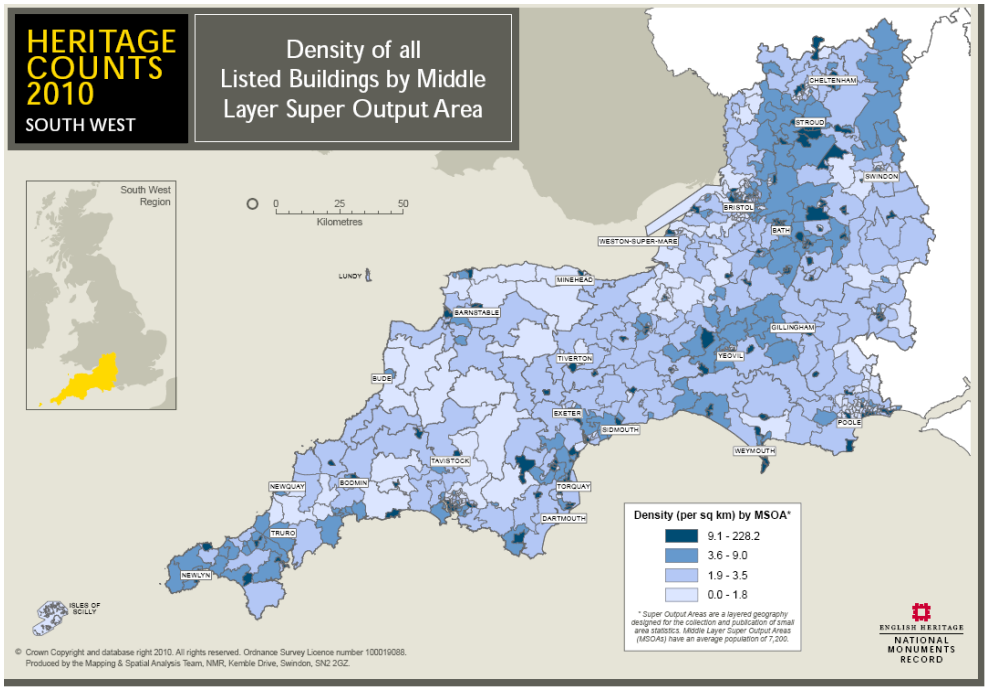
Table 9.1 Cultural heritage assets in the South West

Regional Assets	2003	2011
World Heritage Sites	3	4
Scheduled Monuments	6,903	6,984
Listed Buildings Grade I	2,017	2,047
Listed Buildings Grade II*	5,079	5,146
Listed Buildings Grade III	81,769	82,264
Registered Parks and Gardens	287	294
Registered Battlefields	8	8
Protected Ship Wrecks	23	23
Conservation Areas	1,509	1,567

Source: English Heritage (2011) Heritage Counts 2011 South West, available from http://hc.english-heritage.org.uk/content/pub/2011/hc-2011-south-west.pdf [Accessed June 2012]

The density and distribution of listed buildings in the South West is illustrated in **Figure 9.1** below.

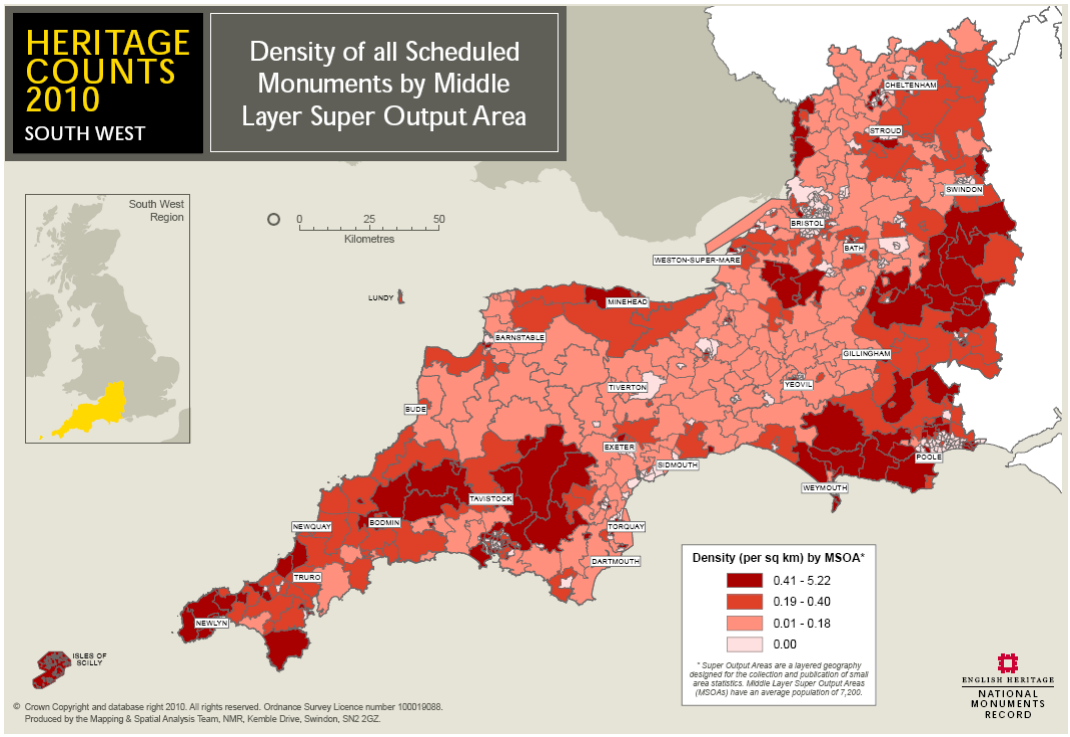
Figure 9.1 Density and distribution of listed buildings in the South West



Source: English Heritage (2010) Heritage Counts 2010 South West, available from http://hc.english-heritage.org.uk/content/pub/HC-LB-SW [Accessed June 2012]

The density and distribution of scheduled monuments in the South West is illustrated in **Figure 9.2**.

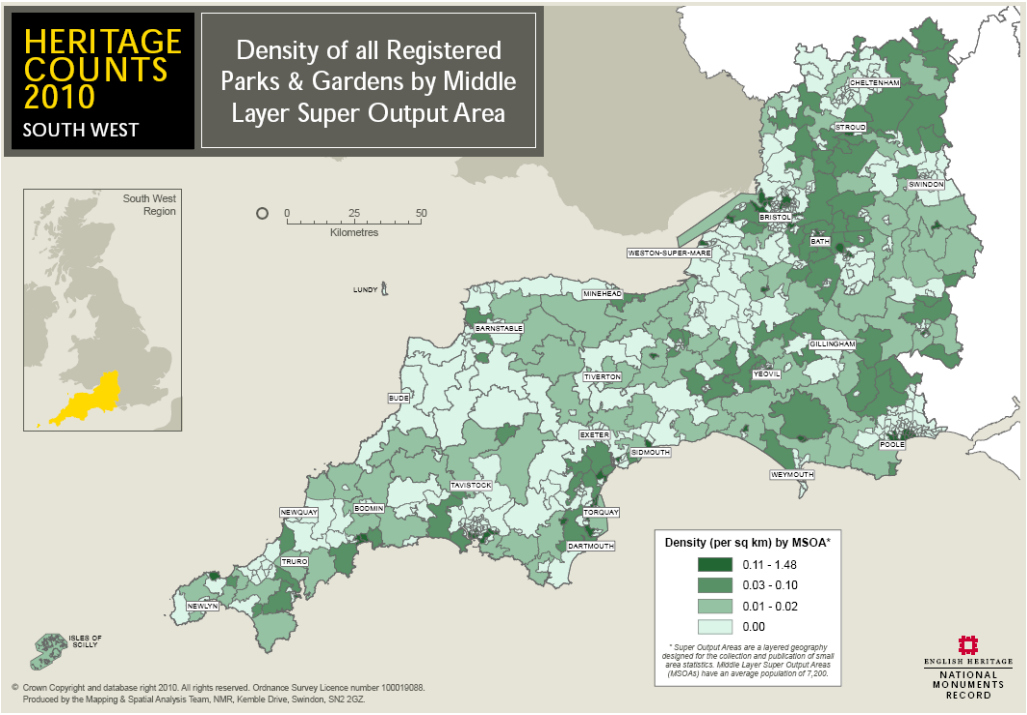
Figure 9.2 Density and distribution of scheduled monuments in the South West



Source: English Heritage (2010) Heritage Counts 2010 South West, available from http://hc.english-heritage.org.uk/content/pub/HC-SM-SW [Accessed June 2012]

The density and distribution of registered parks and gardens in the South West is illustrated in **Figure 9.3** below.

Figure 9.3 Density and distribution of registered parks and gardens in the South West



Source: English Heritage (2010) Heritage Counts 2010 South West, available from http://hc.english-heritage.org.uk/content/pub/HC-RPG-SW [Accessed June 2012]

Nearly 40% (880,000ha) of the South West is a protected landscape, comprising either a National Park (Dartmoor, Exmoor and a small area of the New Forest), or an Area of Outstanding Natural Beauty (of which there are 13 wholly or partly within the region). Of the region's 2,100km coastline, 638km (one third) is Heritage Coast, which makes up 60% of the total for England.

There was only an increase of 1% in listed building consent applications in the South West in 2010/11, compared to an increase nationally of 7%. In the South West, 5,952 applications were submitted in 2010/11, 20% fewer than in 2002/03. The number of scheduled monument consent applications in the South West dropped by 21% between 2002/03 and 2010/11, as opposed to a national increase of 13%. There were 153 applications in 2010/11.

In 2010/11 there was 147.3 full time equivalent (FTE) local authority historic environment staff in the South West, 12.3 FTEs fewer than 2009/10. Nationally, there has been a 5.6% reduction in the number of local authority historic environment staff between 2003 and 2011, but in the South West the reduction is higher, at 11.4%. At the end of the financial year 2011, there was a Heritage Champion in 32 of the 41 authorities in the South West (78% coverage, in line with the national average).

There were 1.74m visits to staffed English Heritage properties in the South West in 2010/11, accounting for around a third of all English Heritage visits. The figure was up by 3% on the previous year (2009/10),

and by 9% on 2007/08. There were 4.47m visits to staffed National Trust properties in the South West in 2010/11, accounting for 28% of all National Trust visits in England. This was a 2% increase on the previous year. There were over 78,000 English Heritage education visits in the South West in 2010/11, the highest number since 2001/02, and an increase of 49% on that year, the second highest rate of growth after London. [150]

English Heritage publish annually a report of heritage at risk. Key findings for the South West published in 2011 are summarised below[151].

Buildings At Risk

- Nationally, 3.0% of grade I and II* listed buildings are at risk. In the South West this falls to 2.1%, representing 154 sites.
- 13 sites have been removed from the 2010 Register, but 16 have been added.
- 58% of entries (106 buildings) on the baseline 1999 Register for the South West have been removed as their futures have been secured, compared to the national figure of 53% (757 buildings).

Scheduled Monuments

- 16.9% (3,339) of England's19,748 scheduled monuments are at risk, compared to 20.3% (1,419 sites) in the South West.
- In the South West, 84 sites have been removed from the 2010 Register, but 93 sites have been added.
- 8.5% of entries (121 sites) on the baseline 2009 Register for the South West have been removed due to positive reasons, compared to the national figure of 11.9% (399 sites).
- Arable ploughing and unrestricted plant, scrub or tree growth account for nearly two thirds of sites at risk nationally. The proportion is similar in the South West.

[150] Heritage Counts 2011 South West, http://hc.english-heritage.org.uk/content/pub/2011/hc-2011-south-west.pdf

[151] http://www.english-heritage.org.uk/content/publications/publicationsNew/heritage-at-risk/har-2011-local-summaries/acc-HAR-2011-sw-summary.pdf

- Nationally, 82% of scheduled monuments at risk are in private ownership, this falls to 75% in the South West.

Registered Parks and Gardens

- 103 of England's 1,610 registered parks and gardens are at risk, an increase from 6.2% (99) in 2010 to 6.4% this year. In the South West, 18 sites are at risk (6.1%).
- Nationally, 6 sites have been added and 2 removed from the 2010 Register. In the South West, 2 sites have been added.

Registered Battlefields

- Of the 43 registered battlefields in England, 6 are at risk, 2 less than the 2008 baseline. None of the 8 registered battlefields in the South West are at risk.

Protected Wreck Sites

- Of the 46 protected wreck sites off England's coast, 7 are at risk, 3 less that the 2008 baseline. None of the 23 protected wreck sites off the coast of the South West are at risk.

Conservation Areas

- 288 local planning authorities (86%) have taken part in the national survey of conservation areas, of which 35 are in the South West.
- Of the 1,089 conservation areas surveyed in the South West, 88 (8.1%) are at risk.

9.4 Environmental Characteristics of those Areas most likely to be Significantly Affected

9.4.1 National

UK

Although from 2000 to 2007 there has been a steady decrease in the number of buildings identified as at

risk, for the first time between 2007 and 2008, the number of entries within the Buildings at Risk Register rose for the first time[152]. Furthermore, the average cost of repairing each building on the Register has steadily increased.

Redundancy is a major factor driving listed buildings into risk. The kinds of historic buildings now at greatest risk are those associated with defence (15%), agriculture (8%) and manufacturing industry (13%).

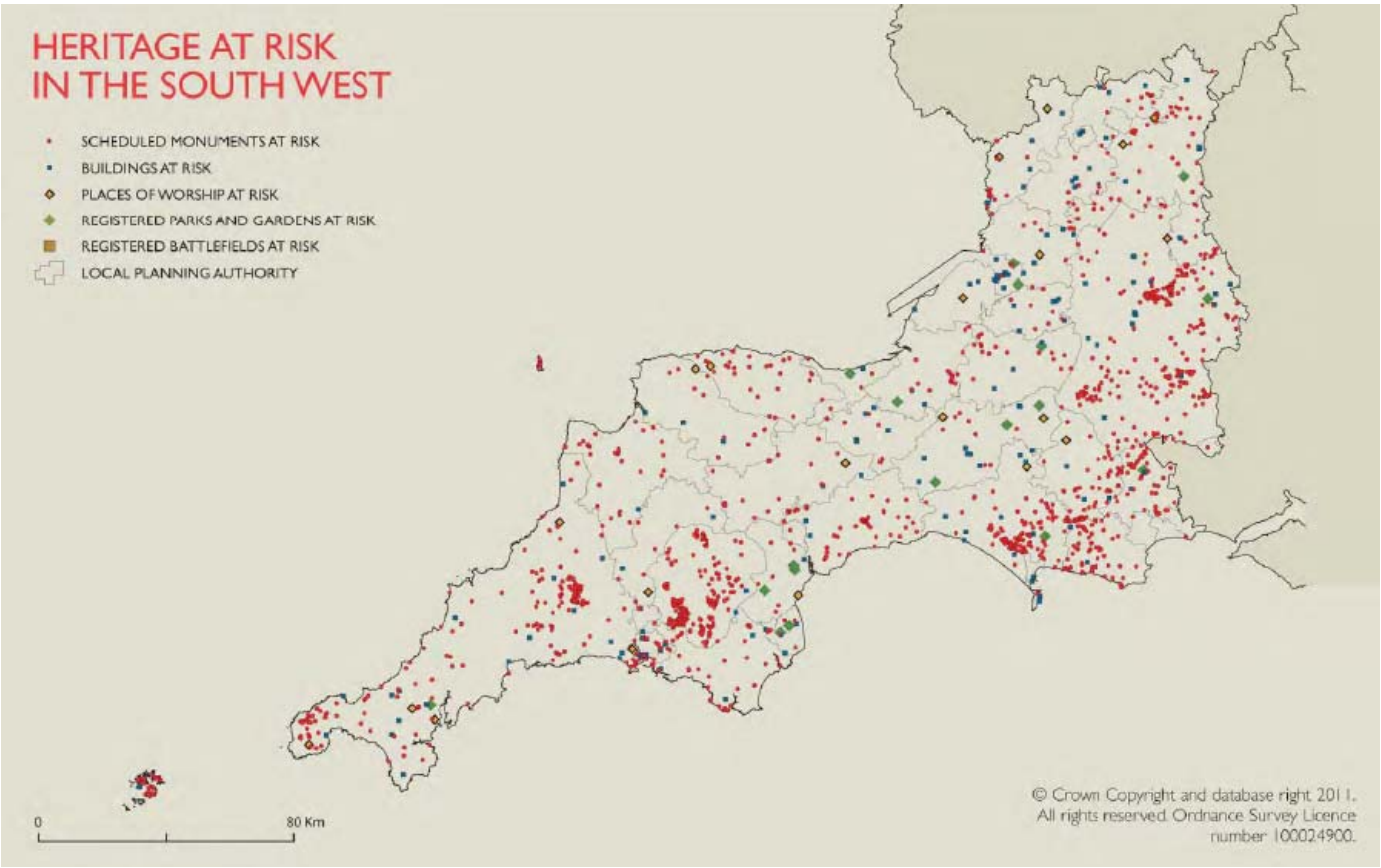
There are concerns that the current recession will reduce public spending which will further reduce conservation staff for local authorities and reduce grants and subsidies to problem sites at a time when there will be an reduction in the willingness of developers to take on more challenging buildings at risk, an increase in vacancy rates and a decrease in funds owners will be abele to invest in repair and maintenance.

9.4.2 South West Region

As noted above, the Heritage at Risk Register 2011 for the South West lists the heritage assets at risk within each local authority area and identifies whether that risk results from neglect, decay or inappropriate development. **Figure 9.4** shows the distribution of assets at risk across the South West.

[152] English Heritage, Heritage at Risk Report 2010, http://www.english-heritage.org.uk/publications/har-2010-report/

Figure 9.4 Heritage at Risk in the South West



Source: English Heritage (2011), Heritage at Risk Register 2011, South West, available from http://www.english-heritage.org.uk/publications/har-2011-local-summaries/ [Accessed June 2012]

9.5 Likely evolution of the baseline

9.5.1 National

UK

The current trend in cultural heritage condition is generally towards little change in the number of historic assets and a decline in the percentage that are at risk.[153]

English Heritage report that there has been little change in the total number of historic assets between

[153] http://www.english-heritage.org.uk/hc/upload/pdf/HC08_National_Acc.pdf)

2002 and 2009; the total number of listed buildings in England has increased by 0.9% during this period with the largest increase in Grade II* (1.4%). The number of scheduled monuments has increased by 1.9% over the same period whilst registered parks and gardens increased by 7.3% (104) between 2002 and 2009. The number of scheduled monuments increased by 1.9% between 2002 and 2009.[154]

9.5.2 South West Region

The key findings from the Heritage At Risk Register 2011 for the region are:

- 13 listed buildings have been removed from the 2010 Register, but 16 have been added.
- 84 scheduled monuments have been removed from the 2010 Register, but 93 sites have been added.
- 2 registered parks and gardens have been added since the 2010 Register.

9.6 Assessing Significance

Table 9.2 sets out guidance utilised during the assessment to help determine the relative significance of potential effects on cultural heritage. It should not be viewed as definitive or prescriptive; merely illustrative of the factors that were considered as part of the assessment process.

Table 9.2 Approach to Determining the Significance of Effects on Cultural Heritage

Effect	*Description*	*Illustrative Guidance*
++	Significant positive	• Alternative would make a significant positive and long-term contribution to the setting and conservation of designated cultural heritage features (e.g. – through enhancement of settings, permanent removal of structures creating a negative visual impact, large scale enhancement of designated features).
+	Positive	• Alternative would bring minor short-term improvements to the setting and conservation of designated or locally important cultural heritage features.
0	No (neutral effects)	• Alternative would not have any significant effects on any cultural heritage sites or assets.
-	Negative	• Alternative would bring minor short-term degradation to the setting and conservation of designated cultural heritage features.

[154] English Heritage, Heritage Counts 2009, England, http://hc.english-heritage.org.uk/upload/pdf/HC09_England_Acc.pdf?1286268742

Effect	Description	Illustrative Guidance
--	Significant negative	• Alternative would cause long-term degradation to the setting and conservation of designated and locally important cultural heritage features (e.g. – through direct and permanent loss or damage to designated sites, introduction of structures that will have a considerable and permanent negative visual impact).
?	Uncertain	• From the level of information available the effects the impact that the alternative would have on this objective is uncertain.

9.7 Assessment of Significant Effects of Retention, Revocation and Partial Revocation

Table 9.3 summarises the significant effects identified in the detailed assessment of RPG10 policies against the cultural heritage topic.

Table 9.3 Significant Effects against the Cultural Heritage Topic

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
EN3 Retention	++	++	++	This policy deals specifically with the historic environment. It states that local authority plans, and those of other bodies, should protect and enhance designated historic and archaeological buildings, areas, features, sites and monuments (and their settings), rescuing those identified as being at risk. The policy also seeks to encourage the restoration and appropriate re-use of buildings of historic and architectural value. The policy was based on PPGs 15, Planning and the Historic Environment and 16, Archaeology and Planning which are now superseded. RES Regional Priority 3B 'Promote and enhance what is best about the region' reflects this policy in seeking to maintain and enhance the region's environmental assets and to use them to raise the profile and image of the South West. Overall, retention has been assessed as having a significant positive effect against the cultural heritage topic, particularly given the region's rich and distinctive historic environment.
EN3 Revocation	++	++	++	Policy EN3 has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10) and, further, superseded by local policies reflecting policy/legislation published since RPG10. In this context, legislation protecting listed buildings, scheduled monuments, conservation areas and registered parks and gardens remain in place. These high levels of protection would be unchanged by revocation. The NPPF includes reference to the historic environment within the definition of sustainable development, 'sustainable development involves seeking positive improvements in the quality of the built, natural and historic environment, as well as in people's quality of life'. Section 12 of the NPPF outlines the specific requirements for LPAs concerning the historic environment. These include that LPAs should set out in their local plan a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				threats. In doing so, they should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance. Given the strong policy support for the protection and enhancement of the historic environment afforded by the NPPF and legislation, it is expected that the effects associated with revocation would be the same as those identified in relation to retention.
TCS2 Retention	++	++	++	This policy requires local authorities and other bodies to protect existing open space and recreational facilities and identify opportunities for new cultural, leisure and community sports facilities. Retention is therefore likely to have a significant positive effect against the cultural heritage topic.
TCS2 Revocation	++	++	++	Policy TCS2 has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10). Taking this into account alongside the provisions of national policy set out in the NPPF and the high level nature of Policy TCS2, revocation is expected to generate similar significant positive effects with respect to the cultural heritage topic as those identified in relation to retention.

9.7.1 Effects of Revocation

The historic environment of the South West is rich and diverse and ranges from important prehistoric sites such as Stonehenge through to areas that are of significant importance to both the nation's and the region's industrial heritage such as the tin mines of Cornwall. The region also includes geologically important heritage features such as the Jurassic Coast which is one of 4 World Heritage Sites within the South West.

RPG10 Policy EN3 seeks to protect the historic environment present within the region and to ensure that new development preserves and enhances historic assets including their setting. It also encourages a proactive approach to re-use historic buildings at risk encouraging restoration and appropriate re-use. Revocation of Policy EN3 will not affect the positive effects identified as a result of this policy. A total of 34 local authorities have plans in place which are in general conformity with RPG10 and which include policies complementary to Policy EN3. Furthermore paragraphs 126 – 141 of the NPPF set out strong national policy on conserving and enhancing the historic environment. The NPPF states that local planning authorities should set out in their local plan a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats.

In addition to the policy guidance referenced it is relevant that the most important cultural heritage sites are subject to statutory protection and this will continue post revocation. Furthermore, in planning for the historic environment, local authorities should continue to draw on available information, including data from partners, to address cross boundary issues; they should also continue to liaise with English Heritage to identify and evaluate areas, sites and buildings of local cultural and historic importance.

Policy TCS2 concerns cultural, leisure and sport facilities. Significant positive effects are likely to be less direct than under Policy EN3 and will be associated with the policy encouragement to maximise accessibility to cultural attractions and the benefits of cultural development that can positively affect environmental conditions. Revocation will not affect the positive outcomes identified for this policy.

9.7.2 Effects of Partial Revocation

The effects of partial revocation concern either:

- Revoking all the quantified and spatially specific policies (for instance where a quantum of development, land for development or amounts of minerals to be extracted or waste disposal is allocated to a particular location in the region) and retaining for a transitional period the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period all the spatially specific policies where a quantum of development or land for development is allocated to a particular location in the region and revoking the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period policies, ambitions and/or priorities, the revocation of which may lead to likely significant negative environmental effects.

There were no likely significant effects on cultural heritage associated with the retention or revocation of the quantitative policies as no quantitative policies were identified in the assessment as having likely significant effects on this topic.

The assessment has also found that there are no policies in RPG10 where the act of revocation will cause a significant negative effect whilst retaining the same policy will maintain a significant environmental benefit.

9.7.3 Effects of Retention

Retention of the Regional Strategy would result in continuation of the baseline (subject to the level of funding from organisations such as English Heritage and the Heritage Lottery Fund continuing to be made available). Because of the strong planning policy and legal protection given to heritage assets, most of the damaging activities are caused by factors outside the control of the planning system (particularly certain agricultural activities, weathering or other natural effects).

9.8 Mitigation Measures

Given that all likely significant effects identified would be positive, no mitigating measures are proposed

for this topic.

10. Landscape and Townscape

10.1 Introduction

The overview of plans and programmes and baseline information contained in this section provides the context for the assessment of potential effects of the proposals to revoke the regional strategies on landscape and townscape. Information is presented for both national and sub-regional levels.

Landscape in this context is defined by **The European Landscape Convention** as 'an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors'. This definition is stated as covering natural, rural, urban and peri-urban (i.e. the urban-rural fringe) and includes land, inland water and marine areas. For the purposes of this appraisal though, landscape is taken to apply to rural areas and townscape to urban areas. Visual effects are those effects that influence how people see a landscape or townscape, such as the erection of a building.

10.2 Summary of Plans and Programmes

10.2.1 International

The ***European Landscape Convention*** is principally directed at the national level, but emphasises the importance of landscape as a cultural as well as an aesthetic asset. It commits signatories to promoting the protection, management and enhancement of landscapes across a country, and integrating landscape considerations into all relevant policies. The Convention's definition of landscape reflects the idea that landscapes evolve through time, as a result of being acted upon by natural forces and human beings. It also underlines that a landscape forms a whole, the natural and cultural components of which are taken together, not separately. The convention also calls for improved public involvement in landscape matters. The UK became a signatory to the European Landscape Convention in 2006.

10.2.2 National

UK

In the UK, there are numerous Acts governing the protection of the countryside, landscape and natural environment. The ***National Parks and Access to the Countryside Act 1949*** makes provision for National Parks, confers powers for the establishment and maintenance of nature reserves, makes provision for the recording, creation, maintenance and improvement of public paths and for securing access to open country and confers further powers for preserving and enhancing natural beauty.

National Parks are areas of relatively undeveloped and scenic landscape. Designation as a national park may include substantial settlements and human land uses which are often integral parts of the landscape. Land within a national park remains largely in private ownership. There are currently thirteen national parks in England and Wales. Each park is operated by its own national park authority, with two "statutory purposes":

- to conserve and enhance the natural beauty, wildlife and cultural heritage of the area, and
- to promote opportunities for the understanding and enjoyment of the parks.

The Norfolk Broads and Suffolk Broads has the same status as the national parks in England and Wales. The Broads Authority has powers and duties almost identical to the national parks, but is also the third-largest inland navigation authority. Because of its navigation role the Broads Authority was established under its own legislation on 01 April 1989. The Broads Authority Act 2009 improves public safety on the water.

AONBs are areas of high scenic quality that have statutory protection in order to conserve and enhance the natural beauty of their landscapes. AONB landscapes range from rugged coastline to water meadows to gentle lowland and upland moors. Natural England has a statutory power to designate land as Areas of Outstanding Natural Beauty

The ***Countryside and Rights of Way Act 2000*** increased the duty of provision of public access to the countryside and strengthened legislation relating to Sites of Special Scientific Interest (SSSIs). In particular, it requires public bodies to further the conservation and enhancement of SSSIs both in carrying out their operations, and in exercising their decision making functions.

The ***Marine and Coastal Access Act 2009*** seeks to ensure clean healthy, safe, productive and biologically diverse oceans and seas, by putting in place better systems for delivering sustainable development of marine and coastal environment.

Other relevant Acts include:

- The ***1967 Forestry Act (as amended 1999)*** restricts and regulates the felling of trees. The ***1968 Countryside Act*** enlarges the function of the Agency established under the National Parks and Access to the Countryside Act 1949, to confer new powers on local authorities and other bodies for the conservation and enhancement of natural beauty and for the benefit of those resorting to the countryside.
- The ***1986 Agriculture Act (with numerous revisions)*** covers the provision of agricultural services and goods, agricultural marketing compensation to tenants for milk quotas, conservation and farm grants.

- The ***Commons Act 2006***, which protects common land and promotes sustainable farming, public access to the countryside and the interests of wildlife.

England

The ***Natural Environment and Rural Communities (NERC) Act 2006*** implements key elements of the Government's Rural Strategy published in July 2004. The NERC Act is designed to help achieve a rich and diverse natural environment and thriving rural communities through modernised and simplified arrangements for delivering Government policy. The NERC Act established a new independent body - Natural England - responsible for conserving, enhancing, and managing England's natural environment for the benefit of current and future generations. The Act made amendments to the both the Wildlife and Countryside Act 1981 and the Countryside and Rights of Way Act 2000, which further enhance provisions to biodiversity generally and SSSIs in particular.

The ***National Planning Policy Framework (2012)*** includes strong protections for valued landscapes and townscapes as well as recognising the intrinsic character and beauty of the countryside. The importance of planning positively for high quality design is underlined and local and neighbourhood plans are expected to "develop robust and comprehensive policies that set out the quality of development that will be expected for the area". Planning policies and decisions are expected to respond to local character and history, and reflect the identity of local surroundings and materials, while not preventing or discouraging appropriate innovation. The Framework states (paragraph 64) that "Permission should be refused for development of poor design that fails to take the opportunities available for improving the character and quality of an area and the way it functions".

The Framework has a number of specific requirements relating to planning and landscape including a clear expectation that the planning system should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes. Local planning authorities are expected to set criteria based policies against which proposals for any development on or affecting protected landscape areas will be judged. In doing so, distinctions should be made between the hierarchy of international, national and locally designated sites and "great weight" should be given to "conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty". Local planning authorities in their plan-making are expected to take account of climate change and changes to landscape and contain a clear strategy for enhancing the natural, built and historic environment. Where appropriate, "landscape character assessments should also be prepared, integrated with assessment of historic landscape character, and for areas where there are major expansion options assessments of landscape sensitivity".

10.2.3 South West Region

No relevant plans were identified within the region for this topic.

10.3 Overview of the Baseline

10.3.1 National

UK

Statutory sites designated (wholly or partially) for their landscape value include National Parks, AONBs, Country Parks, Registered Historic Parks and Gardens, Historic Gardens and Designed Landscapes, National Scenic Areas (NSAs) and Regional Parks (in Scotland) and World Heritage Sites.[155]

Other important (non-statutory) sites include Areas of Great Landscape Value (AGLV) in Scotland; Heritage Coasts (in England and Wales); and National Trust/National Trust for Scotland properties.

The UK has 15 National Parks[156] and (excluding Scotland) 49 AONBs[157]. Each National Park is administered by its own National Park Authority whose duty it is to conserve and enhance natural beauty, wildlife and cultural heritage; and to promote opportunities for the understanding and enjoyment of the special qualities of National Parks by the public. The Broads Authority in England has a third purpose to protect the interests of navigation[158]. The primary purpose of AONB is to conserve and enhance the natural beauty of the landscape.

England

The 'Character of England Landscape, Wildlife and Cultural Features Map' produced in 2005 subdivides England into 159 areas with similar landscape character called National Character Areas (NCA).[159]

There are nine National Parks in England; the most recently designated National Park being the South Downs National Park on 31 March 2010). Together with The Broads (which has similar protection to a National Park) they cover 9.3% of the land area in England.

There are 34 AONBs in England, one of which straddles England and Wales (the Wye Valley AONB). AONBs cover 18% of England and Wales.[160] The East Hampshire and Sussex Downs AONB designations were revoked on the 31 March 2010 when the South Downs National Park Designation Order came into effect. In all, AONB designation covers approximately 15 per cent of the land area of

[155] JNCC, landscape designations, http://www.jncc.gov.uk/page-1527
[156] Association of National Park Authorities, http://www.nationalparks.gov.uk/
[157] National Association of AONB, http://www.aonb.org.uk
[158] http://www.nationalparks.gov.uk/learningabout/factsandfigures.htm
[159] http://www.naturalengland.org.uk/ourwork/landscape/englands/character/areas/default.aspx
[160] See http://www.aonb.org.uk/wba/naaonb/naaonbpreview.nsf/Web%20Default%20Frameset?OpenFrameSet&Frame=Main&Src=%2Fwba%2Fnaaonb%2Fnaaonbpreview.nsf%2F%24LU.WebHomePage%2F%24first!OpenDocument%26AutoFramed (accessed 19.10.2009)

England.

England has been divided into areas with similar landscape character, which are called National Character Areas (NCAs). A total of 159 NCAs have been identified in England. The boundaries of the NCAs are not precise and that many of the boundaries should be considered as broad zones of transition.

Natural England are currently re-writing and re-designing all of England's 159 NCA profiles and aim to publish the first of the new versions from September 2012.

Heritage Coasts are areas defined (they are not statutorily designated) for the beauty and undeveloped nature of the coastline. They represent 33% (1,057km) of England's coastline and are managed to conserve their natural beauty and, where appropriate, to improve accessibility for visitors. Most Heritage Coasts are within the boundaries of National Parks or AONBs, although some including Lundy, the Durham Coast, and Flamborough Head stand alone.

A national record of nearly 1450 Registered Historic Parks and Gardens which contribute to the landscape is maintained by English Heritage. It is a non-statutory designation but the designation is a material planning consideration.

There are 17 World Heritage Sites in England, the most recent of these to be recognised as such is the Cornwall and West Devon mining landscape which was inscripted by UNESCO in 2006.[161]

10.3.2 South West Region

The South West of England has a highly varied landscape that includes high sea cliffs, rolling chalk downland grasslands and open lowland heaths and which is covered by several national and international designations. There are two National Parks wholly in the South West, Dartmoor and Exmoor, covering 7% (167,855 ha) of the region, and the region also contains a small part of the New Forest. There are also 6 UNESCO endorsed sites of international value. These include 4 World Heritage Sites (Stonehenge and Avebury, Bath, Cornwall and West Devon Mining Landscape, Devon and Dorset Jurassic Coast), the North Devon Biosphere and the English Rivera Global Geopark.

There are 11 Areas of Outstanding Natural Beauty (AONB) wholly within the South West that cover 30% (720,030 ha) of the region, plus parts of two others (see **Table 10.1**)

[161] http://whc.unesco.org/en/list/

Table 10.1 Areas of Outstanding Natural Beauty in the South West of England

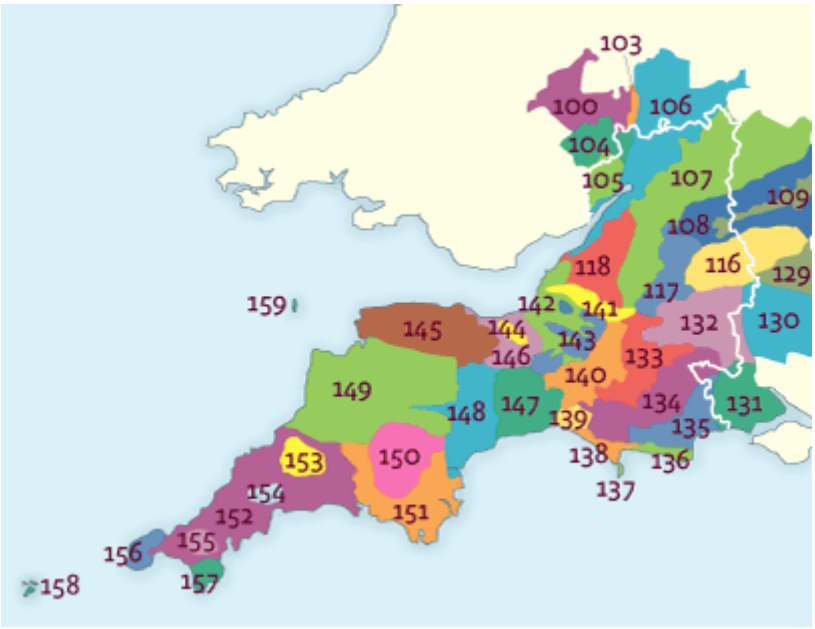
Area of Outstanding Natural Beauty	Area (sq km)	Coverage within South West of England
Cornwall AONB	958	Cornwall
Isles of Scilly AONB	16	Isles of Scilly
Tamar Valley AONB	195	Parts of Cornwall and Devon
South Devon AONB	337	Devon
North Devon AONB	171	Devon
Quantock Hills AONB	99	Somerset
Blackdown Hills AONB	370	Somerset
East Devon AONB	267	Devon
Mendip Hills AONB	198	Parts of Somerset, North Somerset, Bath and North East Somerset
Cranborne Chase and West Wiltshire Downs AONB	981	Parts of Wiltshire and Dorset
Dorset AONB	1,129	Dorset
Cotswolds AONB	2,038	Gloucestershire, Wilshire, South Gloucestershire, Bath and North East Somerset
North Wessex Downs	1,730	Parts of Wiltshire

The region contains 60% of the 1057km of Heritage Coast in England. There are also a number of non-protected areas including two of the country's 12 Community Forests (the Forest of Avon and the Great Western Community Forest).

There are 42 National Character Areas in the South West of England[162], 25% of England's 159 National Character Areas (see **Figure 10.1**).

Figure 10.1 Landscape Character Areas in the South West

162 http://www.naturalengland.org.uk/publications/nca/southwest.aspx



Key:

100. Herefordshire Lowlands

103. Malvern Hills

104. South Herefordshire and Over Severn

105. Forest of Dean and Lower Wye

106. Severn and Avon Vales

107. Cotswolds

108. Upper Thames Clay Vales

109. Midvale Ridge

116. Berkshire and Marlborough Downs

117. Avon Vales

118. Bristol, Avon Valleys and Ridges

129. Thames Basin Heaths

130. Hampshire Downs

131. The New Forest

132. Salisbury Plain and West Wiltshire Downs

133. Blackmoor Vale and Vale of Wardour

134. Dorset Downs and Cranborne Chase

135. Dorset Heaths

136. South Purbeck

137. Isle of Portland

138. Weymouth Lowlands

139. Marshwood and Powerstock Vales

140. Yeovil Scarplands

141. Mendip Hills

142. Somerset Levels and Moors

143. Mid Somerset Hills

144. Quantock Hills

145. Exmoor

146. Vale of Taunton and Quantock Fringes

147. Blackdowns

148. Devon Redlands

149. The Culm

150. Dartmoor

151. South Devon

152. Cornish Killas

153. Bodmin Moor

154. Hensbarrow

155. Carnmenellis

156. West Penwith
157. The Lizars
158. Isles of Scilly
159. Lundy

The three principal Green Belts in the South West of England are the Avon Green Belt, the Gloucester and Cheltenham Green Belt and the South West Hampshire & South East Dorset Green Belt.

10.4 Environmental Characteristics of those Areas most likely to be Significantly Affected

10.4.1 National

UK

The UK has many important and protected landscapes which may be sensitive to development. The character of the UK's landscapes are broadly being maintained, however 20% show signs of neglect.

The natural environment of the UK is much less 'rich' than 50 years ago and remains under pressure from more intense use of the land and sea; continuing economic development, climate change and increased pressures from public access.

Although it is recognised that some changes in landscape, such as restoration of derelict industrial sites, have led to improvements in the quality of the natural environment, Natural England state that landscape change on the whole is resulting in declining diversity, distinctiveness and ecological richness[163].

10.4.2 South West Region

According to a 2008 Natural England Report, 76% of National Character Areas in the South-West are defined as Maintained or Enhanced and this compares favourably with other regions[164]. However, 19% of National Character Areas are defined as 'Neglected' and 5% as 'Diverging'.

A review of the three principal Green Belts in 2006 concluded that there are a limited number of locations where urban expansion can be achieved without significantly and adversely affecting the purpose of the

[163] http://www.naturalengland.org.uk/ourwork/landscape/threats/default.aspx
[164] State of the Natural Environmental in the South West, Natural England, 2008.

Green Belt.[165]

10.5 Likely evolution of the baseline

UK

Over the last century the following landscape character trends have been experienced: [166]

- a gradual erosion of local distinctiveness in some areas, through a process of standardisation and simplification of some of the components that make up landscape character;
- a loss of some natural and semi-natural features and habitats such as ancient woodlands and unimproved grassland;
- a decline in some traditional agricultural landscape features such as farm ponds and hedgerows, and a loss of archaeological sites and traditional buildings;
- increased urbanisation, often accompanied by poor design standards and a decline in the variety of building materials, and the importation of urban and suburban building styles into rural areas; and
- a loss of remoteness and reduced tranquillity because of built development and traffic growth.

There are a number of pressures and risks outlined in the ***State of the Natural Environment 2008***) that may affect the quality of landscapes in England. These include[167]:

- **Sea-level rise:** Over the next few decades it is anticipated that there will be major sea incursions inland during storms, particularly on the south and east coasts of England. If measures such as managed retreat are not adopted in low-lying areas, there may be widespread losses of intertidal and coastal habitats. In the coastal zone, sea-level rise may also result in the direct loss of freshwater habitats such as reedbeds and wet grasslands.
- **Fire:** More droughts in the future will make the countryside increasingly vulnerable to wildfire, with potential for heathland, grassland, broadleaved woodlands and bogs to undergo major change in their structure.
- **Grazing management:** More summer droughts may mean that grazing is no longer possible in some open habitats such as fens, grasslands and heathlands due to die-back of vegetation

[165] Strategic Green Belt Review, Final Report, Colin Buchanan 2006.

[166] Natural England, State of the Natural Environment 2008, Landscape Characterisation and Change, http://www.naturalengland.org.uk/publications/sone/sections.aspx

[167] Natural England (2008) State of the Natural Environment http://www.naturalengland.org.uk/publications/sone/default.aspx

and a lack of drinking water for animals. The spread of diseases (e.g. bluetongue) related to climate change may also reduce livestock numbers and restrict movement, altering grazing patterns and landscapes.

- **Energy production:** The production of biofuels in the countryside may result in changes to landscapes. Wind energy developments are likely to be more common.

- **Development pressure:** Within rural England, the area of developed land has increased by about 4% since 1990. It is expected that the pace of development within England will increase in the future to make up for the current shortfall in housing provision. The effect of this increase pressure for development is likely to be felt most acutely in central and southern England, particularly around identified Growth Areas and Growth Points.

England

Natural England report that in 2008 existing landscape character was being maintained in 51% of England's landscapes, whilst in a further 10% existing character was being enhanced. However, 20% of landscapes were showing signs of neglect. [168]

Data from 1990 to 2003 indicates that in England the number of Character Areas with patterns of change that either maintain or enhance character has increased from 36% to 61%. The number of Character Areas with evidence of neglect or erosion of character has decreased. This evidence suggests that the character of the majority of English landscapes, at Character Area scale, is being sustained.

Forestry Commission England seeks to maintain the area of certified woodland and to ensure that 95% of woodland SSSIs are in favourable condition by 2011[169].

The protected nature of National Park and AONB landscapes make it less likely that these landscapes will be affected by some of the risks outlined (e.g. development pressure) although those protected landscapes nearest to existing urban areas are more likely to be at risk.

10.5.1 South West Region

Over the last century landscape and townscapes have experienced:

- a gradual erosion of local distinctiveness in some areas, through a process of standardisation and simplification of some of the components that make up landscape character;

[168] Natural England, State of the Natural Environment 2008, Landscape Characterisation and Change, http://www.naturalengland.org.uk/publications/sone/sections.aspx
[169] Forestry Commission England, 2008, Delivery Plan 2008-2012: England's Trees, Woods and Forests

- a loss of some natural and semi-natural features and habitats such as ancient woodlands and unimproved grassland;
- a decline in some traditional agricultural landscape features such as farm ponds and hedgerows, and a loss of archaeological sites and traditional buildings;
- increased urbanisation, often accompanied by poor design standards and a decline in the variety of building materials, and the importation of urban and suburban building styles into rural areas; and
- a loss of remoteness and reduced tranquillity because of built development and traffic growth.

The South West is the fastest growing region in terms of population growth, with associated levels of development and pressures on resources likely to have a significant impact on landscape character relative to other regions.

The South West Future Landscapes Technical Report 2009[170] identifies significant challenges ahead if land management in the South West is to continue to deliver social and economic benefits whilst maintaining a high quality and distinctive landscape, including:

- competing demands for land and volatile commodity and fuel markets;
- food production, new forms of energy production, housing and related infrastructure increasing demand for recreational land use - equine, golf, hobby farming, garden centres, theme parks; and
- cumulative impacts of small scale development.

10.6 Assessing significance

Table 10.2 sets out guidance utilised during the assessment to help determine the relative significance of potential effects on the landscape and townscape objective. It should not be viewed as definitive or prescriptive; merely illustrative of the factors that were considered as part of the assessment process.

Table 10.2 Approach to determining the significance of effects on landscape and townscape

Effect	*Description*	*Illustrative Guidance*

[170] http://www.naturalengland.org.uk/Images/Phase%201%20Technical%20Report%20March%2009%20low%20res_tcm6-19385.pdf

Effect	Description	Illustrative Guidance
++	Significant positive	• Alternative would make a significant positive contribution to statutorily-designated landscapes. • Alternative would have a significant positive effect on the setting and attractiveness of local landscapes and townscapes (e.g. through the replacement of poorly designed/derelict buildings with high quality development). • Alternative would enhance public access to the countryside and increase open space provision.
+	Positive	• Alternative would serve to enhance statutorily-designated landscapes. • Alternative would have a positive effect on the setting and attractiveness of local landscapes and townscapes. • Alternative would enhance public access to open spaces and the countryside.
0	No (neutral effects)	• Alternative would not have any effects on landscapes or visual amenity. • Alternative would not enhance or restrict public access to open spaces and the countryside.
-	Negative	• Alternative would have short-term negative effects on statutorily-designated landscapes. • Alternative would have a negative effect on the intrinsic character of landscapes and townscapes. • Alternative would affect the visual amenity of local communities. • Alternative would temporally restrict public access to open spaces and the countryside.
--	Significant negative	• Alternative would have long-term negative effects on statutorily-designated landscapes (such as AONBs). • Alternative would severely affect the intrinsic character of landscapes and townscapes. • Alternative would severely affect the visual amenity of local communities. • Alternative would result in the loss of open spaces and restrict public access to the countryside.
?	Uncertain	• From the level of information available the effects the impact that the alternative would have on this objective is uncertain.

10.7 Assessment of Significant Effects of Retention, Revocation and Partial Revocation

Table 10.3 summarises the significant effects identified in the detailed assessment of RPG10 policies against the landscape topic.

Table 10.3 Significant Effects against the Landscape Topic

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
SS20 Retention	++	++	++	This policy relates to rural land uses including at the urban fringe, supporting rural development and agri-environmental measures that respect the wider landscape objectives of RPG10. The policy also specifically stipulates that the plans of local authorities and other bodies should seek to protect and enhance the region's countryside character including designated assets and supports the protection of woodland and community woodland projects (which may offer landscape improvements). RES Regional Priority 3B 'Promote and enhance what is best about the region' reflects this policy in seeking to maintain and enhance the region's environmental assets and to use them to raise the profile and image of the South West. Given the potential for the implementation of this policy to conserve and enhance the region's landscapes, retention has been assessed as having a significant positive effect against the landscape topic.
SS20 Revocation	++	++	++	Effects associated with the revocation of Policy SS20 are expected to be similar to those identified in relation to its retention above in the short term. This reflects the fact that most local plans have been in place since RPG10 was published and are therefore expected to accord with the provisions of the policy (34 local authorities have plans in place which are in general conformity with RPG10). The NPPF (at paragraph 115) sets out the policy basis for conserving the landscape and scenic beauty of nationally and regionally important designated areas. In addition to the NPPF, the Natural Environment White Paper outlines the Government's vision for the natural environment over the next 50 years, including practical action to improve the quality of the natural environment by halting the decline in habitats and species, the degradation of landscapes and the erosion of natural capital. At the regional/sub-regional level there also exists a range of National Park and AONB Management Plans which comprise actions to conserve and enhance these designated landscape assets. In consequence, the significant positive effects from addressing this issue will be similar to those from retention.
EN1 Retention	++	++	++	This policy strongly supports the protection and enhancement of the region's rich and varied landscape including internationally and nationally designated sites. In addition, it stipulates that local authorities and other agencies in their plans, policies and programmes should have regard to landscape joint character areas of the region and conserve and enhance local character. RES Regional Priority 3B 'Promote and enhance what is best about the region' reflects this policy in seeking to maintain and enhance the region's environmental assets and to use them to raise the profile and image of the South West. Given the potential for the implementation of this policy to conserve and enhance the region's landscape, retention has been assessed as having a significant positive effect against the landscape topic.
EN1 Revocation	++	++	++	The legal requirement for local planning authorities to ensure that internationally and nationally designated sites are given the strongest level of protection and that development does not have adverse effects on the integrity of sites of European or international importance for nature conservation would be unchanged by revocation. This policy has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10) and, further, superseded by local policies reflecting policy/legislation published since RPG10. The NPPF (at paragraph 115) also sets out the policy basis for conserving the landscape and scenic beauty of nationally and regionally important designated areas. In addition to the NPPF, the

Regional Plan Policy	Score			Commentary
	Short Term	Medium Term	Long Term	
				Natural Environment White Paper outlines the Government's vision for the natural environment over the next 50 years, including practical action to improve the quality of the natural environment by halting the decline in habitats and species, the degradation of landscapes and the erosion of natural capital. At the regional/sub-regional level there also exists a range of National Park and AONB Management Plans which comprise actions to conserve and enhance these designated landscape assets. In consequence, the significant positive effects from addressing this issue will be similar to those from retention.
EN3 Retention	++	++	++	This policy deals specifically with the protection of historic and archaeological buildings, areas, features, sites and monuments. The level of protection afforded by Policy EN3, combined with the requirement for plans to take account of landscape context and setting, should also have positive effects on landscape/townscape assets including, for example, the region's extensive Heritage Coast. RES Regional Priority 3B 'Promote and enhance what is best about the region' reflects this policy in seeking to maintain and enhance the region's environmental assets and to use them to raise the profile and image of the South West. Overall, retention has been assessed as having a significant positive effect against the landscape topic, particularly given the region's rich and distinctive historic landscapes.
EN3 Revocation	++	++	++	Policy EN3 has already been largely put into effect (34 local authorities have plans in place which are in general conformity with RPG10) and, further, superseded by local policies reflecting policy/legislation published since RPG10. In this context, legislation protecting listed buildings, scheduled monuments, conservation areas and registered parks and gardens remain in place. These high levels of protection would be unchanged by revocation. The NPPF includes reference to the historic environment within the definition of sustainable development, 'sustainable development involves seeking positive improvements in the quality of the built, natural and historic environment, as well as in people's quality of life'. Section 12 of the NPPF outlines the specific requirements for LPAs concerning the historic environment. These include that LPAs should set out in their local plan a positive strategy for the conservation and enjoyment of the historic environment, including heritage assets most at risk through neglect, decay or other threats. In doing so, they should recognise that heritage assets are an irreplaceable resource and conserve them in a manner appropriate to their significance. Given the strong policy support for the protection and enhancement of the historic environment afforded by the NPPF and legislation, it is expected that the effects associated with revocation would be the same as those identified in relation to retention.

10.7.1 Effects of Revocation

The Regional Strategy contains a number of policies which seek to conserve or enhance the rural and urban landscape in the region. The South West of England has a highly varied landscape that includes high sea cliffs, rolling chalk downland grasslands and open lowland heaths and which is covered by several national and international designations. The two National Parks together cover 7% (167,855 ha) of the region, in addition to the 6 UNESCO endorsed sites of international value and 11 AONBs which themselves cover some 30% (720,030ha) of the region.

Policy EN1, which seeks to provide for the strong protection of the region's internationally and nationally important landscapes, has been identified as having a significant positive benefit for landscape in the region. The policy requirements are repeated by legal requirements and national policy (paragraph 115 of the NPPF) requirements so the protection afforded to these areas would be unaffected by revocation.

Policies on the rural fringe (SS20) and the historic environment (EN3) have secondary, yet significant, positive effects upon both landscape and townscape because they seek to protect the context of the region's settlements and the region's historic environment. In the short to medium term the policy objectives set out within SS20 will continue following revocation due to the fact that almost all of the local plans or core strategies within the region were adopted after the publication of RPG10 and therefore contain complementary policy. National policy and legislation would also continue to provide for the protection of historic areas, features and their settings following revocation of Policy EN3.

10.7.2 Effects of Partial Revocation

The effects of partial revocation concern either:

- Revoking all the quantified and spatially specific policies (for instance where a quantum of development, land for development or amounts of minerals to be extracted or waste disposal is allocated to a particular location in the region) and retaining for a transitional period the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period all the spatially specific policies where a quantum of development or land for development is allocated to a particular location in the region and revoking the non spatial policies, ambitions and priorities; or
- Retaining for a transitional period policies, ambitions and/or priorities, the revocation of which may lead to likely significant negative environmental effects.

The likely significant effects on landscape associated with the revocation and retention of the quantitative/spatially specific policies are summarised in **Table 10.3** for Policy EN1. However, the effects associated with revocation were not considered to be negative or different from retention.

The assessment has found that there are no policies in RPG10 where the act of revocation will cause a significant negative effect whilst retaining the same policy will maintain a significant environmental benefit.

10.7.3 Effects of Retention

The effects of retaining the Regional Strategy would see a continuation of the baseline, at least in so far

as it is influenced by the planning system, with a high level of protection given to those landscapes of national and local importance. It is expected, as with revocation, that the quality of the urban and suburban landscape will improve over time with the creation of more green infrastructure and more sensitive building design.

10.8 Mitigation Measures

Given that all likely significant effects identified would be positive, no mitigating measures are proposed for this topic.